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Effectiveness of Webquest Technology Application in the Development Information Educational Environment

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Abstract

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The present paper considers the issues of the education system influence on all the life spheres of society, implementation of media-education strategy by means of modern information technologies web2.0 with application of webquest within development of high-tech information educational environment. At present it is evident that the future of the Russian society is connected with development of innovation-based economy which is impossible without modernization of the system of professional education. These issues are relevant nowadays as informatization process influences the society life greatly. This influence rests on primarily the role of “knowledge” factor in all the service sectors and society activity performed by means of mass media. Wide expansion of media in education process has lead to change in the fundamental concept of education – new strategies appeared: media-education, distance education and open education. In this respect there are many questions, and efficient use of mass media technologies within the frameworks of implementing new strategy of media education is one of the main issues among them.

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1. Introduction

At present it is evident that the future of the Russian society is connected with development of innovation-based economy which is impossible without modernization of the system of professional education. Innovation-based economy acts as a controlled object that conditions search for new approaches, the ones implementing the strategy of innovative development of modern professional



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education system. Current state of professional education development is characterized by its restructuring. Growing diversification of education institutions leads to formation of new hierarchy of professional education system (Suzdalova et al., 2015).

Research has revealed the need for change in the integration mechanisms of objects of educational, research and development and production activities.

Studying foreign experience (Germany, Denmark, Great Britain) allows to define well the opportunities of networking cooperation. The experience of these countries is marked by significant influence of social partners on politics and content of students' preparation for employment.

Germany is characterized by fairly high index of youth employment which is determined by modern social and economic politics of the country aimed at support and development of small and medium enterprises. P. Drewek notes that modernization of professional education by professionals from different fields of expertise has been paid large attention to.

A wide network of continuous technical education and advanced training has been established for workers of different enterprises. They used stimulating methods, as well as approaches to develop self-esteem of the students and their motivation. As noted by G. Thiess, H. Gropler, large attention in education process has been paid to development of skills to maintain business relations with social partners. In order to provide the employment of young people government encourages cooperation of companies and enterprises with educational institutions. Thus it enables to combine theoretical training of students with content of technical activity, meaning combination of education and industry (Loshchilova et al., 2015).

21st century is the age of global reorganization of human activity concerning all of the areas starting with culture and finishing with education. In this regards we are to a large extent interested in change of approach to education process in conditions of total society informatization. Thus informatization of the society can be considered as a global social process, its basic aspect being scientific and technical process of providing optimum conditions to satisfy and implement information needs of people by using information sources of different types. Therefore classical form of education ceases to exist. It is presently replaced with innovative form – media education (Suzdalova, & Kvashnina, 2015).

In this respect there are many questions, and efficient use of mass media technologies within the frameworks of implementing new strategy of media education is one of the main issues among them.

2. Materials and methods

Innovative development is the basis of education modernization. It is the need to establish multi-level system of professional education that will further provide new opportunities to optimize the activity of educational institutions (meaning strategies, programs, models and projects which are forecast-based) to satisfy the recruitment needs in different areas of professional expertise. The transition from mass education to “individual” training of highly demanded specialists, “exceptional” specialists, specialists of a definite level of qualification and expertise is a present tendency (Suzdalova et al., 2015).

Thus the nature of education system has a significant meaning in different aspects of society development: economic, social and cultural and legal. Z. Allak said “By means of education culture is transmitted and transformed, and social functions and statuses are built”. Structural changes in values of society occur, as qualitative replacement in society development has taken place; the structure of individual’s image of good and bad, standards of behavior become chaotic.

Russian society develops dynamically and education becomes the main component of this development and social welfare of an individual. This component influences significantly the system conversion processes in economics, politics, society, etc. The process of large integration of educational space of the Russian Federation with the world educational space takes place. Integration of national education requires conducting research in different scientific fields, primarily education sociology. Research of that kind contributes to strengthening the influence of the Russian culture on development of human civilization while keeping the national mentality at the same time.

Russian education system can compete with education systems of advanced countries to the full extent. However in this case there arises the need in public support of the existing educational politics implying activation of the role of the state in education system, recovery of its responsibilities, reorganizing education with providing the necessary resources and developing mechanisms of effective use of the provided resources.

Russian education policy reflects on the whole the national interests relating to education system, taking into consideration the general tendencies of the world development. In this regards some changes in education system should be made. Among them could be the following:

- rapid development rates of the society that significantly enlarge the opportunities of not only social but also political choice thus increasing the level of preparation of each citizen to the choice of that kind;
- transition to information-based society by means of information technologies, acquiring the skills of tolerance and social skills, extending the scopes of intercultural interaction;
- growth of the number of total problems, possible to solve only by international cooperation of the society with formation of progressive, modern thinking of young population of the country;
- rapid development rate of economics and competitive ability with simultaneous decrease of fields requiring low-skilled and unskilled labor leading to global restructuring in sector of employment, as nowadays growth of professional mobilization occurs in combination with the need in continuous education, constant advanced training and professional re-training;
- increase in the value of human capital assets is a national wealth, conditioning intensive development rate of education level of both youth and adults.

Due to renovation of education system the Russian Federation keeps its place within the leading, progressive countries of the world and also proves reputation of the country – the owner of high level of science, culture and education development.

In fact each individual strives for freedom and is able to communicate and to create. However an individual can lose these abilities due to some obstacles. In Russia society experiences the situation where more and more people become interdependent small parts of social and economic mechanisms.

The process of disposal of an individual from culture, from people around, work, and himself occurs, as he loses control over salary and his labor on the whole. Such disposal affected the entire society living environment: education, culture, art, family, etc. Therefore education process obtains additional goal – providing of an individual's self-fulfillment, thus subjective personal experience of people contributes to their self-fulfillment and self-development. Along with that an individual is subject to psychological impact of confrontation of mass media and real world; they form a circle of social contradictions leading the society to destruction.

Nowadays educational environment is a special strategy that advanced countries follow. It enables national economy, which is the most important society life sphere, to develop. Therefore intelligence and not technology becomes the main capital of the present and the future; measure of significance of education considering the crisis state of the society only increases.

Studying the sphere of social problems nowadays becomes the state issue; it is due to the fact that state concerns about development and social protection of young people implies planning and organization of the highest level:

- state is responsible for young generation;
- state exerts control over education and providing education services;
- state performs legal regulation and record of demanded levels of education;
- state realizes rights of citizens for education of any level, etc.

Formation and development of legal aspects of individual's consciousness also directly depend on how education influences it as it refers to legal rights and has priority in the process of national resources distribution. Education as a constituent part of individual's rights contributes to development of creative abilities and deeper participation in life of the society. Social aspects of terms of reference of modern educational system reflect and characterize to the large extent the existing problems of the Russian society.

Among the most significant problems are:

1. social and economical – connected with targeted governmental economical support of the system of Russian education (grants, scholarships, support of orphans and legally free children, transition of students from paid education to the free one);
2. choosing educational institution – freedom of such choice is not restricted, however each person is responsible for choosing this or that educational institution;
3. choosing profession after graduation from the educational institution – problem of employment in life of a modern person is significant. State order for definite types of specialists is canceled, there is no social protection while employment in accordance with the obtained education, thus it makes it difficult for graduates and educational institutions as well;
4. professional advancement and personal development – it is necessary to create environment to encourage development of individual abilities of a person, together with formation of experience in the field of social interaction. The society itself should provide all the opportunities for continuous education during the whole life of an individual according to his own needs;

5. integration of the national education system with the world one – creating optimum conditions for interaction of different education systems on the international level using education projects, mass media, information technologies without total changes and global intervention in social basis of each nation's cultural heritage and contributing to the development of modern society.

Social welfare of an individual and society is defined by many indicators and conditions, including the education level of an individual. Education enables person to adapt for social life and gives a chance to make it better. The following social-adaptation levels of modern education can be defined (Barzaeva, & Abdulazizova, 2015):

- microlevel – self-education;
- mesolevel – education in family,
- personal education;
- macrolevel – education in state and private educational establishments, in system of extended education;
- megalevel – education within international educational programs, in the system of interstate cooperation, etc.

Stable operation and development of education on all social-adaptation levels provides dynamic renewal of an individual and society.

The main objectives of education at the present period of the Russian state development can be mentioned as (Barzaeva, & Abdulazizova, 2015):

- increasing the quality of education,
- establishing social-pedagogical programs of youth development as the basic condition for increasing social mobility of an individual and changing social-psychological atmosphere in the society.

The national education system is marked by prerequisites for transition to new models of education policy (interaction of education, political, and religious activities of the society).

In the last decade Russia demonstrated transition from unified to variative education. The core of the new education strategy is in the innovative model of education management. Considering new social-political and economical conditions it is reasonable to manage backed by flexible education standards and ensured budgetary standards, large-scale prediction of professions development, strategic planning, wide cooperation of the center with regions, new information technologies. Effective management of constantly developing education system is impossible without implementing of the mentioned issues (Barzaeva, & Abdulazizova, 2015).

Science plays an important role in this process as the innovation reserve for development of education system, including the systems of education management. Organizing and full financing of scientific support of the governmental strategy on education development gets a significant value. National science should solve the objectives on implementing the program of professional retraining and advanced training of teaching staff, provide real basis for fundamental training of a teacher, development of teaching staff motivation.

General education school and professional school are institutes of socialization and education of young people. The system of life activity is improved in educational institutions and thus it influences positively the individual's health. Therefore scientifically based goals and content of education, humanistic principles of interaction between teachers and students, environment stimulating self-fulfillment of young people are to prevail in such educational centers. To safe health of the younger generation we need to specify the exact guidelines of creative development of education processes at all the levels of education system (Barzaeva, & Abdulazizova, 2015).

Social research demonstrated the significance of such problems as providing financial support to teachers, refinement of technical facilities of educational institutions, advanced training of teachers, improving methodological support of teaching process, development of scientific research, renewal of methodical literature and a whole range of problems connected with education of young people (Barzaeva, & Abdulazizova, 2015).

Modern teacher nowadays faces an important objective of how to transfer his knowledge and skills within the taught lessons in interesting and quality manner.

It is primarily explained by influence of mass media on individuals; pedagogical methodology should be constantly enhanced to increase motivation and interest of students to the studied subjects.

Educational webquest is one of the many technologies to solve the problem of implementing media-education strategy.

Webquest is one of the basic instruments of web 2.0 technology. It is a unique methodology for design of systems; its main principle is in attracting the users to collection and checking the information materials based on internet services and projects, such as social networks, blogs, wiki, educational information resources, etc. (Basic Google for education, 2014).

Webquest is a problem task containing the elements of role playing, and internet sources are used for its completion.

Webquest contributes to:

- search of information that the teacher assigns students to find;
- effective development of mental processes of students at the stages of collection, analysis, processing and evaluation of the obtained information;
- enhancement of computer and internet skills.

Webquest is also an unusual and effective method of teaching and learning.

As an example of using such technology in practice within educational process we suggest to consider web-quest "information security" implemented within the academic discipline "Informatics and Information and Communication Technologies" in Yurga Engineering School of Machinery and Information Technologies.

3. Results and discussion

Webquest "Information security" is presented as an internet website where students solve the set objectives.

Necessity of such quest development occurred in the process of integration of internet potentials with academic disciplines at different stages of education. Webquest was developed specially for

attraction of special attention of students to the problems in the field of information security (WebQuest «Information security», 2015). It relates to the first type quests – short-term, considered for two lessons. Its goal is in acquisition of skills while solving the tasks devoted to peculiarities of information security provision on different stages of information system lifecycle and its significance.

Webquest is aimed at development of:

- analytical and creative abilities of students,
- creative potential,
- independence,
- communication skills,
- ability to work in micro-groups,
- increasing motivation to self-education,
- increasing self-esteem,
- public speaking skills.

A teacher developing such webquests should have deep knowledge in the academic discipline, as well as methodology and information communication technologies.

Web-quest development starts from statement of problem issue and central task. It is the problem that awakes interest, motivates a student for research activity. The second stage is formation of goals and objectives; the third one is defining roles for participants of problem issues and tasks for each of the roles; the fourth one is development of technical map of webquest and evaluation criteria; the fifth stage is platform selection (in this case it is Google Sites); the sixth stage is implementation an application of webquest in practice.

Webquest can be found at <https://sites.google.com/site/bezopasnostkda2/>.

Tab “WebQuest” contains a detailed instruction on quest solution, its goals and objectives, problem issue and central task of the quest (WebQuest «Information security», 2015).

Tab “Roles” contains a description of each role that helps a student to be guided in responsibilities and powers of the characters. Each role implies a unique block of tasks ((WebQuest «Information security», 2015).

All the results of tasks completion are recorded in the table “My achievements”, which can be found in the tab “My achievements” ((WebQuest «Information security», 2015).

Each task is evaluated according to the developed criteria that can be found at the tab “Evaluation criteria” ((WebQuest «Information security», 2015).

At the website you can find a number of useful links – the tab “Materials and useful links” ((WebQuest «Information security», 2015).

As was stated above application of this technology has great significance and influences positively studying problem issues of academic disciplines within education process.

This technology can be used in higher education. When forming evaluation means we face the need in diagnostic methods and indicators. Indicator is an element reflecting the state of object under study. Indicator is a marker reflecting changes of some parameter of the controlled technical process or object in the form that is the most comfortable for its direct perception by an individual.

Indicator is means used to monitor change of state of economical-administrative competencies of bachelors of mechanical engineering according to the developed indicators. Evaluation of the quality of training is one of the main activities in higher education (Lizunkov et al., 2015).

4. Conclusion

Application of the mentioned technology by teachers has the following practical value: first, students get communication and information competence as well as competence to solve problems and learn types of activities; second, a teacher obtains the opportunity to evaluate the extent to which students acquire the mentioned competencies. In this case objects under evaluation can be results of students' activities, e.g. presentation.

Thus, using webquest "Information security" within the academic discipline "Informatics and Information and Communication Technologies" we obtained the desired effect that demonstrated the following results:

- ready product (presentations, reports, schemes) implemented by means of Google services, moreover, the object under evaluation is not the volume of the studied information but application of the obtained knowledge and skills in practice for solving the set objectives and achievement of the set goal;
- "pedagogical effect" from deep merging with the process of "knowledge acquisition" with its logical application – involvement of the quest participants into information activity, thus stimulating learning activity in general. A teacher is not a primary source of information anymore, he mostly plays a role of consultant who gives the right direction and coordinates activities of students.

The obtained effect in its turn allowed forming the following skills of the students: working in team, taking responsibilities, self-determination, self-presentation.

After quest completion participants analyze critically their work, evaluate it, and give evaluation to other students' work. We also noted stable interest to study of training materials, enhancement of presentation skills, interest in special literature, realization of creative potential, enhancement of intellectual abilities.

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