opción

Revista de Antropología, Ciencias de la Comunicación y de la Información, Filosofía, Lingüística y Semiótica, Problemas del Desarrollo, la Ciencia y la Tecnología

Año 35, 2019, Especial N° 19

Revista de Ciencias Humanas y Sociales
ISSN 1012-1587/ ISSNe: 2477-9385
Depósito Legal pp 198402ZU45

Universidad del Zulia
Facultad Experimental de Ciencias
Departamento de Ciencias Humanas
Maracaibo - Venezuela

Opción, Año 35, Especial No.19 (2019): 565-590
ISSN 1012-1587/ISSNe: 2477-9385

Implementation of the competence approach with the help of network project activities

Elvira K. Samerkhanova, Elena P. Krupoderova, Klimentina R. Krupoderova, Lyudmila N. Bakhtiyarova, Alexander V. Ponachugin, Tatiana I. Kanyanina

Research Scholar, Minin University
Elvira@mail.ru, Elena@mail.ru , Klimentina@mail.ru , Lyudmila@mail.ru , Alexander@mail.ru , Tatiana@mail.ru

Abstract

The article discusses the possibilities of implementing the competence-based approach to learning through project activities via use of methods of generalization, comparison and forecasting. As a result, the formation of important general professional competencies of future bachelors of pedagogical education occurs when students themselves are the developers of educational and network projects. An analysis of the capabilities of digital tools based on network services led to the conclusion that the project activity can create new unique network content and active interaction between its subjects, be the network applied practically.

Keywords: Competence-Based, Universal, General Competences.

Implementación del enfoque de competencia con la ayuda de las actividades del proyecto en red

Resumen

El artículo analiza las posibilidades de implementar el enfoque basado en la competencia para aprender a través de las actividades del proyecto mediante el uso de métodos de generalización, comparación y previsión. Como resultado, la formación de importantes competencias profesionales generales de los futuros licenciados en educación

Recibido: 05-12-2019 •Aceptado: 10-03-2019

pedagógica se produce cuando los propios estudiantes son los promotores de proyectos educativos y de red. Un análisis de las capacidades de las herramientas digitales basadas en servicios de red llevó a la conclusión de que la actividad del proyecto puede crear un nuevo contenido de red único y una interacción activa entre sus temas, ya sea la red aplicada en la práctica.

Palabras clave: Competencias Basadas, Universales, Competencias Generales.

1. INTRODUCTION

The modern information society forms a new value system where knowledge, skills and abilities are necessary but far from sufficient results of education. The person is required to be able to navigate in huge streams of information, select it and critically process it; to be capable of self-development and continuing education; of working in a team; to be ready to make decisions; to master new technologies and to possess such qualities as adaptability, responsibility, mobility, tolerance. A most important reason for renewing education and improving its quality is the use of the competence approach both in general and higher education. Currently, said the approach is one of the most developing areas of pedagogical theory and practice. The issue of implementing the competence-based approach in education is discussed in the research of (Golub et al., 2013; Efremova, 2012; Zimnyaya and Zemtsova, 2008; Raven, 2002). A number of studies on various educational developmental technologies (including the project method) for implementing the competence approach: Efremova (2012), Matyash (2012), and (Polat and Bukharkina, 2007).

The significant influence of Internet development on education deserves special attention. Thus, pedagogical studies of Raitskaya (2011) explored significant educational opportunities for modern Internet services. The current stage in the Internet development is characterized by the active use of social network services (Web 2.0 services) which make effective cooperation possible between network participants. The Internet is becoming a platform for the possibility of organizing collective activities to create intellectual content with the participation of a large audience. The works of Krupoderova and Bryksina (2018), Krupoderova and Krupoderova (2018), Ponachugin (2017), and Samerkhanova et al. (2016) substantiate the use of network social services to organize project activities of students. Using Web 2.0 services in project activities opens up additional opportunities for the formation of students' competencies, for active network interaction, and the creation of new unique network content.

1.1 formulation of the problem

A characteristic feature of the modern stage of Russian education development is the transition to the competence approach. Competence is often seen as the ability to solve problems, and competencies are seen as behaviors that provide this ability. In most research papers, competence is interpreted as an integral characteristic of the student, reflecting their ability to use the entire set of existing knowledge, skills, capabilities, experience, and personal qualities to solve emerging problems. In the Federal State Educational Standards of Higher Education, all

competencies are divided into universal, general professional and professional. Professional knowledge and experience today are not the basic requirements the compliance with which ensures a specialist demand on the labor market. An important criterion for successful vacancy competition is the assessment of a university graduate's personal potential of – special personal qualities that ensure the graduate's core competencies and their competitively important skills (Efremova, 2012; Inchamnan, 2018). To form such essential qualities as mobility, flexibility, striving for self-education throughout life, willingness to solve problems and work in a team, be prepared for stressful situations and able to quickly resolve crises, new methods techniques and forms of work are necessary for university graduates .

The basic educational technology supporting the competence-oriented approach in education is the project method. In its didactic essence, it aims to form abilities that help act effectively in a real-life situation and adapt to changing conditions, navigate in various conditions and work in various teams. The project method makes it possible to organize students' learning activities, observing a reasonable balance between theory and practice, between academic knowledge and pragmatic skills. The project method is more than a hundred years old, yet its importance is significantly increased due to the transition to competency-based learning. The enormous didactic potential of this method lies in its adaptability to the time and to its challenges. Time dictates its own requirements for the instrumental base of applying this method. Undoubtedly, the project method can be used without information and communication technologies, yet they provide significant advantages, allowing full realization of the possibilities of students-teachers

cooperation during project activities. Today, the instrumental basis of the project activity is network technologies. The goal of the research is to show the didactic potential of ICT tools, primarily social networking services, for organizing students' project activities, and to justify the possibility of developing the necessary students' competencies during network project activities. The didactic potential of network social services (Web 2.0 services) for the formation of certain universal and general professional competencies will be considered on the example of organizing network project activities of future bachelors of pedagogical education of Minin Nizhny Novgorod State Pedagogical University.

1.2. Literature review

Analysis of psychological and pedagogical literature shows that the conceptual apparatus of the competency-based approach is not well-established and is being actively discussed in scientific circles. Thus, the basic concepts of competence and competency have a wide range of interpretations. Competency in literature most often refers to functional areas of activity, and competence to behavioral (Efremova, 2012). The works of Raven (2002) contain the most detailed idea of competence. He connects the level of competence with the effectiveness of the subject's activities, understanding as competence the subject's ability to combine various potentially important cognitive, emotional and volitional components of the activity for the sake of its successful implementation and achieving the maximum result. Profound research on the competency-based approach in education was conducted by (Zimnyaya and Zemtsova,

2008). The authors view competencies as some internal, potential, hidden psychological neoplasms: knowledge, perceptions, action programs, value systems, and relationships.

The authors of the present study believe (Khutorskoy, 2014). Most precisely define the concept of competence – it is a predetermined social requirement for the educational preparation of the student, expressed by the totality of interrelated value-semantic orientations, knowledge, skills, and practical experience necessary for the implementation of personal and socially significant activities (Khutorskoy, 2014). Thus, the concept of competence is most often used to describe the effectiveness of mastering and performing a specific type of activity, and as a property of an individual, it manifests itself only in the course of this activity. In the Federal State Educational Standards of Higher Education, competence refers to the ability to apply knowledge, skills, and personal qualities for success in a particular field; such definition is pragmatic and understandable for students, teachers, and employers. Understanding the results of education as sets and levels of certain competencies requires appealing to student-centered learning technologies. The student-centered approach is different from traditional technology when the teacher is the main actor at all stages of the educational process. The student-centered technology of education creates conditions for disclosing personal characteristics of students and establishing a partnership and trust between the teacher and students. The task of the teacher is to organize the active independent work of students in the study of educational material, speaking at the same time not only as a source of information but as an assistant, adviser and partner. At the core of the learning process lies cooperation and productive communication of students, aimed at joint

problem solving, building the ability to highlight the important points, to set goals, to plan activities, to distribute functions and responsibility, to think critically and achieve meaningful results.

The project method is well-proven for the implementation of the competency-based approach in education. The history of its use in different countries is revealed in the textbook (Matyash, 2012), and Polat and Bukharkina (2007) made a serious contribution to the justification of its benefits. The author gives the following definition of the project method: The project method is a way to achieve a didactic goal through the detailed elaboration of the problem, which should be completed with a very real result, shaped in one way or another. Of particular interest to the present research work on the organization of project activities of students of pedagogical universities: (Gazizova et al., 2016; Krupoderova and Krupoderova, 2015), and (Smagina, 2015). The main objective of using the said method in the field of higher pedagogical education is to develop students' project thinking and to prepare using this method in future professional activities. The instrumental basis of the project activity is social Internet services (Web 2.0 services) since they require the active participation of users in the content formation. Raitskaya (2011) published researches on the educational capabilities of Web 2.0 services. Web 2.0 services help organize productive project activities. Network project activity is an effective technology that significantly increases the level of student autonomy and cognition, develops critical thinking and communication skills, gives teamwork and problem-solving experience, and helps work with various types of information. The authors of the present research regard the substantiation of its possibilities to form

universal, general professional and professional competences as a topical scientific and practical task.

1.3 Purpose of research

The study aims to substantiate the didactic possibilities of network social services for the organization of productive project activities of future bachelors of pedagogical education, ensuring the implementation of the requirements of the Federal State Educational Standards, which allows forming the necessary competencies of students.

2. METHODOLOGY

The methodological basis of the study was as follows:

-Theoretical and methodological analysis and synthesis of existing special domestic and foreign scientific and methodical literature, conceptual analysis of scientific articles and publications on the topic;

-Study and synthesis of both domestic and foreign developments on the organization of students' project activities on the basis of network social services;

- Use of methods of generalization, comparison and forecasting.

3. RESULTS AND DISCUSSION

The network project activity in this study will be understood as joint teaching and research, cognitive or creative activity (hosted on the network) that has a common goal and agreed methods based on the network interaction and aimed at achieving its overall result. The didactic potential of the network project activities for the formation of universal and general professional competencies of future bachelors of pedagogical education will be justified below. Work on a project always begins with the choice of the research topic and with determining how to solve the problem; with a discussion of research methods and ways of presenting results; with distribution of responsibilities in the group and of planning activities. This stage of the project activity gives good opportunities for the formation of such universal competence as the ability to determine the range of tasks within the framework of the goal and to choose the best ways to solve them. At the same time, it is reasonable to conduct brainstorming in jointly edited documents (for example, Google documents or Google spreadsheets), using on-line mental maps, fishbone schemes, SWOT problem analysis and other means of on-line visualization (http://www.mindmeister.com, http://www.mindomo.com, http://www.classtools.net, http://www.gliffy.com, etc.) using on-line virtual boards (http://www.twiddla.com, http://www.scribblar.com, https://ru.padlet.com, etc.). Discussion of possible solutions to problems is possible through interaction in blogs, Wiki-sites, online communities, etc. Project management services, such as http://www.smartsheet.com,

http://www.teamer.ru, are suitable for selecting the most effective ways to solve problems and allocate resources.

In the project activity, the stage of collecting information, of assessing its reliability, its scientific character and relevance is very important. At the same time, universal competences are formed that fall into the category of systemic and critical thinking. Students must demonstrate the ability to select sources of information that are adequate to the tasks and relevant to the scientific worldview. Unfortunately, not all of them are ready to work with information resources. The found materials are not always subjected to critical analysis, and references to the found resources are often incorrect; therefore, systematic work is needed to organize the search and selection of high-quality information resources by students. Catalogs of digital educational resources, dictionaries, encyclopedias, electronic tutorials, materials of virtual museums and on-line libraries should be recommended for use. The students' attention should be directed towards the organization of the effective search for resources using search engines, the correct construction of queries and the use of language commands to build queries. When organizing a project activity, attention should be paid to network services which allow jointly collecting bookmarks for useful resources, for example, the Russian-language service http://bobrdobr.ru. Besides, https://www.symbaloo.com service allows organizing not only a repository of links to useful resources, but also presenting them in a convenient visual form, using so-called web mixes. It is possible to jointly select resources using documents and joint editing tables.

Network social services are of particular importance at the stage of collecting primary information by questioning a specific target audience. Using the Internet significantly increases the number of potential respondents and makes the sample representative, and the methods and results of the study valid. For students, as a rule, the collected data after generalization and processing represent new knowledge that helps explain events, facts, and so on. The tools of this kind of analytics are various on-line survey tools. The formation of universal competence in critical analysis and synthesis of information occurs at the design stage (at which the research is carried out directly). Thanks to network services, the list of products of project activities created by students is greatly expanded. Presentation of research results is possible on Wiki sites, in joint documents and spreadsheets. Video recordings of observations, experiments and interviews can be put on various video hosting sites. It is possible to organize collective work with maps, to present material using info graphics and interactive posters, etc. Moreover, the display of research results is possible in the form of on-line presentations, Wiki articles, on-line time tapes, mental maps, web albums, screencasts, podcasts, etc.

The final product created by the students presents not only the substantive aspect of the research (What did we get?), but also the way to achieve it (How did we arrive at this result?), and reflects the course of the research and analyzes its results. When choosing a toolkit for creating project products, students can use various training materials on working with network services presented on the developer sites or created by Internet users. Two sites can serve as examples here: https://sites.google.com/site/badanovweb2 and

https://sites.google.com/site/proektmk2. On each of them, Web 2.0 services are classified by purpose; there are training materials for each service and examples of its use in education. Project protection can be carried out in person using various presentation technologies, or in the mode of webinars, Skype-conferences, etc. The presentation stage of the project activity allows forming such universal competence as the ability to carry out business communication in oral and written forms. Such universal competence as the ability to carry out social interaction and realize its role in a team is formed at any stage of the project activity. Interaction of the group members, discussion of ideas, distribution of responsibilities can be carried out both by the classic means of network communication (via e-mail, mailing lists, chats, forums, video conferencing) as well as through blogs, network communities and groups.

When using the phrase 'network communication tools', it should be clearly understood that the very term 'communication' implies not only networking but also joint productive activities (planning these activities, creating collective information products, working together in documents, organizing joint information storages, etc) during which the interaction of its participants is effectuated. Network offices occupy a special place among the tools of joint activities. The most famous are Office 365 by Microsoft and Google Drive – online offices that include a text processor, a spreadsheet, a service for creating presentations, and an online cloud storage service with file sharing functions. Collective productive activities can be carried out with the help of other social networking services mentioned above: hypertext creation services, mental maps, virtual boards, time tapes, etc. In order to realize the ability to carry out social interaction and fulfill own role in a team, self-assessment is important, as well as the

mutual evaluation of the fulfilled research; these can be carried out in joint editing documents, blogs and by using on-line visualization tools. The network project activity has a high didactic potential for the formation of general professional competencies. For example, for future bachelors of pedagogical education such competence as the ability to organize joint and individual educational activities is important. By participating in project activities as students, future teachers are preparing to become developers of educational and extracurricular network projects for schoolchildren. Examples can be given of the formation of other general professional competences in the course of network project activities.

Serious attention in organizing project activities should be given to the issue of evaluation. Different assessment strategies, methods and corresponding assessment tools can be used. There are such formative assessment strategies as assessing the needs and interests of students, encouraging autonomy and interaction, monitoring progress, testing understanding and encouraging metacognition. The final assessment is conducted to demonstrate understanding and skill. At different stages of the project activity, different assessment strategies are used. Applying an evaluation strategy, it is important to understand what its purpose is; what results are expected; what help learner receives in determining their strengths and weaknesses and finding out what helps them and what prevents them from studying. The effectiveness of organizing project activities largely depends on the students' initial experience, on their interests, needs and motivation. The teacher’s task is to diagnose the students' interest, the degree of their immersion in the problem of research, and the presence of project activities skills at the beginning of the project. With the help of various network services such as on-line surveys,

documents, tables of joint editing and on-line interactive boards, the teacher identifies the needs of students; conducts brainstorming to discuss issues of concern; divides into groups for research. Possible forms of results presentation, requirements for the final products of research activities and a work plan are discussed, and the methods and tools of formative assessment of the project activities are analyzed.

Let us consider a strategy to encourage autonomy and cooperation. From the very beginning of the project, its participants should be set up for independent work and productive interaction. The tools of this strategy are various forms of self-assessment and mutual evaluation, instructions on the organization of work in a group, and blogs of project participants. When applying the strategy, on-line questionnaires, documents and tables of joint editing, on-line visualization services can be used. At the same time, students form universal competence related to self-organization and self-development. For the progress monitoring strategy, effective ICT tools are various collaborative editing tables, on-line calendars, project management services, etc. These contribute to building time management skills and building and implementing a self-development trajectory based on the principles of lifelong education. Students learn to critically evaluate the effectiveness of using time and other resources in solving problems, as well as the results received. Using a strategy to test the understanding and support of metacognition is very important in project activities. Using tools for building clusters, mental maps, denotate graphs, Ishikawa diagrams, etc. in the process of project activities qualitatively changes the character of the cognitive and research activities, creating conditions for self-education, self-development, and self-reflection. At the same time, for example, future bachelors of pedagogical education create opportunities

for the formation of general professional competence related to the development of programs for monitoring the education results and for overcoming learning difficulties.

For the final assessment, a strategy of demonstrating understanding is used. Learners can demonstrate understanding through the products of project activities, a portfolio of projects, and the protection of their research work. To create various forms and assessment checklists, on-line questionnaires, virtual whiteboards, and Wiki discussion pages can be used. Resource provision is also very important in the project activity. Materials such as memos, instructions, guidelines, lists of useful links, etc. are developed to accompany and support project activities. Moreover, these resources can be selected not only by the teacher but also students, and here the capabilities of network social services are employed. For example, co-creation of collections of bookmarks – links to Internet resources for the project – can be carried out using the services http://www.bobrdobr.ru, http://delicious.com, or http://www.symbaloo.com. Having mastered a new service, students can create instructions for their colleagues for working with it. Examples of the organization of network project activities by students of Nizhny Novgorod State Pedagogical University named after Kozma Minin can be found in the monograph by (Samerkhanova and Krupoderova, 2017). Students post their research papers on the University's Wiki site (Krupoderova and Plesovskikh, 2016) https://wiki.mininuniver.ru. Students use joint document editing services, on-line visualization, virtual boards, and infographics.

Below are examples of some educational and extracurricular projects that demonstrate the possibility of forming universal and general professional competencies of future bachelors of Nizhny Novgorod State Pedagogical University named after Kozma Minin? Every year, first-year students participate in the computer science project ‘Towards an Information Society’, posted on the University Wiki https://goo.gl/Moq246. The project is carried out while studying the topic ‘Information Society’ within the discipline ‘Informatics’. During the project, participants are looking for answers to such problematic issues as ‘What is an ‘information culture’? How does it relate to human culture?’, ‘What are the positive and negative consequences of informatization?’, ‘What are the prospects for Russia's entry into the information society?’, ‘How to ensure information security of the individual?’, ‘What are the causes of information wars?’, ‘What do we need information resources for?’ etc. The answers to these project questions demonstrate the willingness of participants to join the information society, understanding their place in it, and striving for self-improvement and self-realization. Let us analyze some of the students' work performed using network social services in the project ‘Towards an Information Society’. The participants of the Information Culture group studied the characteristics, types and structure of the information culture and displayed them on the mental map using the https://mindomo.com service. On an interactive on-line board (https://padlet.com), recommendations for ethical behavior on the Internet were formulated. The participants of the Information Society Trends group created a timeline (https://timetoast.com) displaying informational revolution and major milestones in the history of the development of the means of collecting, storing, processing and transmitting information. They also presented (in the form of a cluster) the main trends of the

information society using the service https://bubbl.us and created a Google presentation describing various concepts of the information society.

Russia in the Modern Information Society group investigated the main features and characteristics of the information society, analyzed the features of Russia's transition to the information society using an on-line mental map (https://www.mindmeister.com) and conducted a public opinion poll among groupmates about the development of the information society in Russia through Google forms. The Information Security group got acquainted with the Information Security Doctrine of the Russian Federation and built the Information Security mental map using the https://mindomo.com service; their Google presentation displayed hardware and software information protection. They also conducted a survey in Google forms among groupmates about how they ensure their information security and developed recommendations for ensuring information security on an interactive whiteboard in the https://paddlet.com service. The participants of the Information Wars group studied the history of information wars and presented them in the form of a timing tape (https://timetoast.com), built the Causes of Information Wars cluster and created an infographic on modern information wars and methods of conducting such wars using https://easel.ly. With the help of the cluster, the Information Resources group has classified the world information resources in the https://bubbl.us service, presented the main national resources of Russia with the help of a Google presentation and created a webmix with useful informatics resources using the https://symbaloo.com service.

Let us give another example of the formation of universal and general professional competencies of future bachelors of Minin Nizhny Novgorod State Pedagogical University with the help of project activities in the framework of the discipline 'Internet technologies'. In this discipline, students develop individual projects in the form of Google sites. Content should contain the history of the global network, the classification of Internet services, the organization of effective information search in the network, the concept of cloud technologies, information visualization services, etc. Students should integrate into their website the author's educational materials on various Internet services; examples of using Wiki services, co-editing documents, interactive whiteboards, infographics, time tapes, mental maps, etc. An example of one of such sites is https://goo.gl/DiKHXX. The site is integrated with a timeline with the history of the Internet, created in the https://time.graphics; with a word cloud on the project built using https://wordcloud.pro/ru; with mental maps 'Classification of Information Threats' (http://www.mindomo.com) and 'My Information Environment' (http://popplet.com); with Google's Basic Internet Services document and a joint Google presentation about the student's group of the author and with the author's pages on the university Wiki.

The achievement of the results formulated in the Federal State Educational Standards is impossible only in the conditions of classroom work (even if innovative pedagogical models and technologies are actively implemented). Competencies are formed not only in the educational process but in the extracurricular activities of students. For instance, every year in December, a week of Russian informatics is held at the Faculty of Natural, Mathematical and Computer Sciences of Nizhny Novgorod State

Pedagogical University; the week is timed to the celebration of the Russian informatics day on December 4 and to the international action 'World Code Hour'. As part of the week, student hackathons on programming are held, and events dedicated to the contribution of Soviet and Russian scientists in the development of computer science and computing, round tables, meetings with IT specialists and various network projects are being organized. Network design is an innovative direction of pedagogical activity that is actively developing at the present time. This is connected both with the implementation of the requirements of the Federal State Educational Standards and with the development of network technologies, with the constant emergence of new Web 2.0 services which are the technological basis of the network project. Out-of-class project activity contributes to the formation of most universal competencies and some general professional competencies of students.

Today, any teacher who has the skills to organize project activities and has experience in using Web 2.0 services in teaching practice can become an initiator, developer and coordinator of a network project. Technological tools of the network project should provide: organization of joint group activities; implementation of effective information interaction; communication between the participants; access to information resources to all participants of the network project; formation of a network of students, publication and exchange of finished products of educational activities; organization of effective management and pedagogical observation; evaluation of educational activities. In this regard, the developer of a network project faces the following technological tasks: creation of a network site for the project; organization of electronic registration; placement of digital content (training materials, tasks,

products of the participants, photos, videos, text documents, presentations); organization of common networking events; organization of video broadcasts; organization of joint activities of participants in the network; coordination of the project and organization of communication lines (news posting, interaction of the organizers and participants, interaction of the participants among themselves); promotion of the project on the Internet; monitoring organization, transparent assessment of work. Various tools and services of the Internet allow solving all these technological problems.

Wikis, blogs and Google sites can be used as the information environment of the project. The Internet community has already gained considerable experience in the development and implementation of Internet projects; an extensive archive of implemented projects is presented on the portal of Chronicles (http://letopisi.org/) and on regional Wiki-portals. As an example of a network project in which students from Nizhny Novgorod State Pedagogical University named after Kozma Minin participated, the authors of the present study give the All-Russian network project 'Holy Knight of the Russian Land' (http://goo.gl/UJ89F5). The project was conducted at http://letopisi.org. During the project, participants sought answers to such problematic questions as 'Why is Alexander Nevsky the name of Russia?', 'What are the main personality traits of Alexander Nevsky?', 'What is the essence of the civilizational choice of Russia in the 13th century and what is the role of Nevsky in it?', 'What significance did the military victories of Alexander Nevsky have?', 'Why was Alexander Nevsky canonized?' 'How is the name of Alexander Nevsky immortalized in different cities?', 'Why is the image of Alexander Nevsky relevant in the 21st century?', 'What is the manifestation of

patriotism today?'. The answers to these project questions demonstrate the civic maturity of the participants, their sustainable life position, the desire for self-improvement and self-realization. Opportunities are being created for the formation of several universal and general professional competencies. This is the implementation of the search for information, its critical analysis; teamwork; communication in writing; time management; intercultural interaction; and the formation of readiness for the implementation of spiritual and moral education of students.

At the first stage, participants needed to visualize the era of Alexander Nevsky. They were asked to build mental maps, cause-and-effect maps, conduct a SWOT analysis, create on-line presentations, newspapers, etc. The second phase of the project was dedicated to Alexander Nevsky the commander. The teams built on-line time tapes 'Battle of the Neva' and 'Battle on the Ice' and answered the relevant problem questions. At the third stage, dedicated to Alexander Nevsky the saint, virtual geocaching took place. The participants had to decipher the QR codes where the places of the earthly memory of the pious Prince Alexander Nevsky were named, and mark them on the Google map. Numerous teams at the third stage offered presentations, play casts, publications and slideshows about the veneration of Alexander Nevsky as a saint. The fourth stage was called 'Alexander Nevsky – the name of Russia'. The participants had to create a video 'The Sun of the Russian Land' answering the question 'why is the image of Alexander Nevsky relevant in the 21st century?' The final stage of the project 'I love you, Russia' was devoted to answering the fundamental question in a joint online newspaper (https://goo.gl/HUWcPR).

The formation of important general professional competencies of future bachelors of pedagogical education occurs when students themselves are the developers of educational and network projects. As part of the discipline 'Information Technology in Education' over the past five years, students have developed about a thousand projects in computer science, mathematics, literature, history, foreign languages, technology, and physical culture. Students post portfolios of their projects on the University Wiki; these contain such materials as a project business card; a publication demonstrating the benefits of the project method; introductory presentation to identify the initial experience of students and their interests; product design examples; documents of final and formative assessment; and didactic and methodical materials. When developing educational projects, future bachelors of pedagogical education form a willingness to develop basic and additional educational programs, to organize joint and individual activities of students and to interact with participants in educational relations.

In addition, students of Nizhny Novgorod State Pedagogical University named after Kozma Minin have experience in developing network projects for schoolchildren. Examples of joint activities of teachers and students to develop educational competitions for schoolchildren: 'To Nizhny Novgorod, this means home' (http://goo.gl/4qm80); 'Hail, our free fatherland!' (Http://goo.gl/L4Oqu); 'Let us bow to those great years' (http://goo.gl/EuPo9); IT Marathon (http://goo.gl/jxcyCT), and 'Readers Country' (https://goo.gl/6bghoL). One of the latest examples

of projects developed by students for schoolchildren is the ‘Go to the Internet’ project (https://goo.gl/ydUrsX). Extensive preparatory work was done: the students developed a project statement, assignments for each of the four stages, created a large number of training materials, placed the project portfolio on the University’s Wiki site, put together a jury team, sent newsletters to schools, conducted the project, summed everything up and awarded the winners.

4. CONCLUSION

Analyzing didactic opportunities of network social services reveals their effectiveness for organizing project activities of future bachelors of pedagogical education both in the framework of auditing and of extracurricular work. Illustrative examples of the formation of universal and general professional competencies with the help of project activities based on network social services are presented. A priori, social services Web 2.0 focused on a collective approach to the development of intellectual content with the decentralized participation of a large number of people. Cognitive, creative and educational activities acquire a network and collective character. The analysis of the capabilities of digital tools based on Web 2.0 services allows the authors of the present research to conclude that the project activity is a process of creating new unique network content and active interaction of the subjects in the process of its creation and practical application.

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UNIVERSIDAD DEL ZULIA

opción
Revista de Ciencias Humanas y Sociales

Año 35, Especial N° 19, 2019

Esta revista fue editada en formato digital por el personal de la Oficina de Pubñlicaciones Científicas de la Facultad Experimental de Ciencias, Universidad del Zulia.
Maracaibo - Venezuela

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