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Formation of a competitive specialist in the field of teaching computer science in the context of updating the content of education

The article considers the issues of training competitive specialists in the field of teaching computer science, capable to conduct the teaching and educating of students taking into account the specifics of the taught subject; to contribute socialization, the formation of common culture of the individual, the perceived choice and subsequent development of professional educational programs; to use a variety of techniques, methods of teaching; to ensure the level of training of students who are able to solve tasks creatively and professionally at the modern scientific and practical level in the pedagogical sphere of activity. The content of the educational program, which contribute to the formation of fundamental knowledge in the field of pedagogy, computer science, information and communication technologies, integrated with the modern trends in the teaching activities of the computer science teacher, is analyzed. The conditions of integration of the education system of the Republic of Kazakhstan into the international educational space are shown for improving the quality of the training bachelor of education.

Keywords: training, competitive specialists, teaching computer science, educational programs, fundamental knowledge, education system, information and communication technologies.

Today training of specialists in the field of computer science requires comprehensive high-quality training of the teacher, who must be capable to navigate in dynamic information space, in any sphere of activity and to provide competitiveness in labor market. Therefore even if the higher education institution does not train specialists in the field of computer science, requirements to preparation in the field of computer science are rather high. On the other hand, the content and the organization of process of learning computer science need essential updating, for support of its adaptation to conditions of the market economy, the changed system of financing of educational institutions, the radical reorganization of structure of the national economy.

The process of computer science training must quickly adapt to the requirements of external factors, such as the market of educational services, the labor market, the level of training of the leavers of schools, lyceums and gymnasiums in the field of computer science.

The purpose of the educational program 5B011100 – «Information science» is the training of competitive specialists in the field of teaching computer science, capable to conduct the training and education of students taking into account the specifics of the taught subject; to contribute socialization, the formation of common culture of the individual, the conscious choice and subsequent development of professional educational programs; to use a variety of techniques, methods of teaching; to ensure the level of training of students who are able to solve tasks creatively and professionally at the modern scientific and practical level in the pedagogical sphere of activity [1].

In the process of learning, the student acquires knowledge in the field of: pedagogy of secondary education; computer science of the school course, according to the standards of the Republic of Kazakhstan; the issues of teaching computer science at school; planning and managing the educational process of students; modern ways to the development of educational materials based on methods, tools and technologies in accordance with established standards; implementation and use of the remote education, multimedia tools of learning, electronic forms of control of academic achievement; creation and processing of information resources with use information and communication tools and technologies.

The main task of training of specialists in the specialty 5B011100 – «Information science» is the formation of fundamental knowledge in the field of pedagogy, computer science, information and communication technologies, integrated with modern trends in the teaching activity of the computer science teacher. This task contributes to the formation of a competitive personality, who ready for life in the modern high-tech world.

Graduates of this educational program have profound and comprehensive knowledge in the field of informatization of education, methods of teaching computer science and competences of organizational activities for development and implementation of electronic educational resources in the field of education are formed.

As a result of training graduates will have profound knowledge and skills in the field of the solution of standard professional tasks in institutions of education.

The bachelor of education of specialty «Information science» implements their professional activity in the sphere of education.

Objects of professional activity are institutions of education: organizations of primary, main secondary, general secondary education, specialized organizations of additional education, pedagogical colleges, institutes of professional development and retraining of pedagogical staff, departments of education [2].

In the process of learning the student acquires knowledge in the area such as:

- pedagogy of secondary education;
- computer science of the school course, according to the standards of the Republic of Kazakhstan;
- issues of teaching computer science at school;
- planning and management of educational process of pupils;
- performance of motivational, diagnostic, correctional, communicative, methodical work in conditions of use of modern pedagogical and information-communication technologies;
- modern approaches to the development of educational and methodical materials based on methods, ways and technologies in accordance with established standards;
- introduction and use of various E-Learning forms, including remote education, multimedia tutorials, electronic forms of the control of progress;
- creation and processing of information resources with use information and communication tools and technologies.

The educational program allows to the student to acquire skills and abilities:

- possession of a system of subject, psychological, pedagogical and methodical knowledge and skills of applying theoretical knowledge in professional activity, taking into account specific social and pedagogical conditions;
- possession of methods and forms of the organization of educational and cognitive activity in accordance with the age and individual characteristics of pupils;
- ability to organize pedagogical collaboration (teacher-student, teacher-teacher, teacher-parent), including the conditions of profile training;
- skills of using of the information and communication technologies in pedagogical activity;
- possession of skills of application programming, using the modern tools and programming languages;
- ability to development and use of the electronic educational resources in the educational process;
- knowledge of software development technologies;
- application of modern technologies of training and education;
- ability to evaluate and analyze the activities of students during the educational process;
- ability to realize methodical knowledge and applied skills in specific situations;
- possession of methods of organization innovative activity in the teaching of computer science;
- ability to own knowledge in the field of the theory of pedagogical integration;
- ability to social partnership and pedagogical cooperation;
- possession of Kazakh, Russian, foreign languages;
- knowledge in the field of pedagogical innovation, pedagogical technologies.

As part of the training, students will study disciplines:

- Introduction to the pedagogical profession
- Pedagogy
- Methods of teaching computer science
- Theoretical Foundations of Informatics
- Innovative technologies in the organization of educational process at school
- Information and communication technologies in education
- Introduction to programming
- Development of Windows applications
- Programming in C, C ++, C #
- Computer architecture and operating systems
- Computer networks
- Creation of electronic educational resources
- Application Packages
- Computer technology three-dimensional graphics and animation

- Multimedia Technologies
- Web technologies
- Technology for solving tasks of increased complexity
- Databases in the information systems
- Development of client-server applications, etc.

In the context of integrating the education system of the Republic of Kazakhstan into the international educational space, with the aim of improving the quality of the bachelor's degree in education in the specialty 5B011100 of «Information science» at the Karaganda State University of a name of the academician Ye.A. Buketov international cooperation is carried out with such educational institutions and organizations: Charles University (Czech Republic, Prague). Rating: Academic Ranking of World Universities – 2014, 244; International center of education and professional development (Germany, Dusseldorf), Georg-August-Universität Göttingen (Germany), Istanbul University (Turkey), The University of Sofia «St. Kliment Ohridski» (Bulgaria). Rating: European country ranking 2014-2; Ss. Cyril and Methodius University (Slovakia, Tyrnava). Rating: Web university ranking 2014-5271; Adam Mickiewicz University (Poland, Poznan). Rating: Academic Ranking of World Universities – 2014. – 379; Hacettepe University (Ankara, Turkey) QS World University Rankings 651-700; State Educational Institution of Higher Professional Education «Omsk State Pedagogical University» (Russia, Omsk). Rating: Top Russian universities 2014-12; Vyatka State University. Rating: Top Russian universities 2014-54.

Within the framework of this educational program, students have the opportunity to pass the work (pedagogical) practice in general schools, lyceums and gymnasiums, also in the organizations of additional education [3].

The organizations and institutions in which students pass the work practice: Department of education of the Karaganda region, the Republican scientific and methodological center, Republican Institute for development of leading and research-pedagogical staff of education system of the republic of Kazakhstan, Nazarbayev Intellectual School of Chemistry and Biology in Karaganda; The Karaganda regional specialized boarding school for gifted children «Daryn»; State Administration «M.Zhumabayev gymnasium №39»; State Administration «Jambyl Specialized Boarding School №7 for gifted Children»; State Administration «High School №27»; State Administration «High school №66»; State Administration «High School №81»; State Administration «High School Lyceum №53»; State Administration «School Lyceum №101»; State Administration «S.Sattarov School Lyceum №57»; Karaganda State Administration «Karaganda Engineering College».

Thus, training must become an important component of professional training for the future teacher. The modern teachers must have knowledge not only in the field of information and telecommunication technologies, which is included in the content of computer science courses, but also must be an expert in the use of new technologies in their professional activity.

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Білім беру мазмұнын жаңарту жағдайында информатиканы оқыту саласында бәсекеге қабілетті мамандарды қалыптастыру

Мақалада информатиканы оқыту саласы бойынша, оқытылатын пән ерекшелігін ескере отырып, білім алушыларды оқытуды және тәрбиелеуді жүзеге асыра алатын, бәсекеге қабілетті мамандарды дайындау мәселелері қарастырылған. Білім беру бағдарламасы әлеуметтендіруге, тұлғаның жалпы

мәдениетінің қалыптасуына, кәсіби білім беру бағдарламаларын саналы түрде таңдауға және игеруге жағдай жасайды; оқытудың түрлі тәсілдерін, әдістерін және құралдарын пайдалану педагогикалық қызмет саласының міндеттерін заманауи ғылыми-тәжірибелік деңгейде шеше алатын білім алушыларды дайындау деңгейін қамтамасыз етеді. Информатика мұғалімінің оқытушылық қызметін дамытудың заманауи тенденцияларымен біріктірілген педагогика, информатика және ақпараттық-коммуникациялық технологиялар облысында терең білімді қалыптастыруға мүмкіндік беретін білім беру бағдарламаларының мазмұнына талдау жасалды. Білім бакалаврын дайындау сапасын жоғарлату мақсатында Қазақстан Республикасының білім беру жүйесінің халықаралық білім беру кеңістігіне бірлесу шарттары көрсетілген.

Кілт сөздер: дайындау, бәсекеге қабілетті мамандар, информатиканы оқыту, білім беру бағдарламалары, терең білім, білім беру жүйесі, ақпараттық-коммуникациялық технологиялар.

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Формирование конкурентоспособного специалиста в области преподавания информатики в условиях обновления содержания образования

В статье рассмотрены вопросы подготовки конкурентоспособных специалистов в области преподавания информатики, способных осуществлять обучение и воспитание обучающихся с учетом специфики преподаваемого предмета; способствовать социализации, формированию общей культуры личности, осознанному выбору и последующему освоению профессиональных образовательных программ; использовать разнообразные приемы, методы и средства обучения; обеспечивать уровень подготовки обучающихся, способных творчески и высокопрофессионально решать на современном научно-практическом уровне задачи в педагогической сфере деятельности. Проанализировано содержание образовательной программы, которая способствует формированию фундаментальных знаний в области педагогики, информатики и информационно-коммуникационных технологий, интегрированные современными тенденциями развития в преподавательской деятельности учителя информатики. Показаны условия интеграции системы образования Республики Казахстан в международное образовательное пространство с целью повышения качества подготовки бакалавра образования.

Ключевые слова: подготовка, конкурентоспособные специалисты, преподавание информатики, образовательные программы, фундаментальные знания, система образования, информационно-коммуникационные технологии.

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