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The need to form “hard skills” and “soft skills” for future pedagogues in the context of digitalization of education

The article is devoted to the actual problem of the organization of personal development of future pedagogues in the process of their professional training. As a solution to this problem, the authors pay attention to the study of the problem of the formation of hard skills and soft skills in future pedagogues, their role in professional career and personal development. These skills allow future pedagogues to success adaptation to the educational environment. The role of the formation of hard skills and soft skills in the process of professional development of future pedagogues in the context of digitalization of education is increasing every year. The article discusses the concepts of hard skills and soft skills and their importance for the development of future pedagogues in the professional field. The authors conducted a literary analysis on the topic of the study, noted common and distinctive features in approaches to the understanding of supra-professional and professional skills by various authors. The authors conducted a survey among students of the educational program 6B01101 — Pedagogy and psychology, the basis of the study was the pedagogical faculty of the Karaganda University of the name of academician E.A. Buketov. The results of the empirical research conducted by the authors are presented in the article. The results of the study allowed the authors to conclude that it is necessary to form not only theoretical knowledge, but also practical skills that will contribute to the creation and development of a competitive and competent society of pedagogues of a new formation. The problems raised by the authors are relevant for further research and will be continued in the search for forms and methods of forming hard skills and soft skills for future pedagogues in the conditions of digitalization of education.

Keywords: skill, competence, creativity, flexibility, professional skills, future teachers, digitalization of education, professional sphere, educational institutions, theoretical knowledge, practical skills.

Introduction

In the modern period of global changes in the world associated with new technological advances and the introduction of innovations, accelerated development of information technology and mobility of human resources, education and science should be at the forefront of transformation. The global changes that occurred during the pandemic had a direct impact on the education system. These changes require a different approach to the higher education system, where safety and the use of distance learning technologies come to the fore.

The creation of a modern effective education system in Kazakhstan is one of the important conditions for achieving the strategic goal set by N.A. Nazarbayev to enter the top thirty developed countries of the world. Therefore, as noted in his article «Looking to the Future: Modernization of public Consciousness», it is

necessary to concentrate, change yourself and, through adaptation to changing conditions, take the best of what the new era carries [1].

The issue of affordable and high-quality education is raised in the Address of the Head of State K.K. Tokayev to the people of Kazakhstan «Kazakhstan in a new reality: time for action» dated September 1, 2020, which indicates the need for the formation of competencies in demand in the labor market, where the bet will be placed on the formation of hard skills and soft skills of future teachers [2]. Professional competencies: hard skills and soft skills, as a driving force for the development of modern society, are an integral part of the modern higher education system, especially in the context of a pandemic.

The global pandemic has set certain priorities in the education system, bringing to the fore the problem of training future specialists using distance learning. It is worth noting that the sudden outbreak of the pandemic has not only changed the nature of the training of specialists, but also the understanding of the need to form modern skills that will contribute to the timely and comprehensive development of students' personality.

Due to the accelerated development of the socio-economic direction, there is a need to keep up with the changes and constantly improve the competencies and skills of future pedagogues in order to achieve one of the main goals of the higher education system — the preparation of future specialists for professional activity. Thus, it is necessary for higher education to respond in a timely manner to the dynamics of changes in society and to prepare teaching staff for new conditions, namely, to use professional skills and knowledge in their professional field.

Literature review

Recommendations on the formation of hard skills and soft skills in the higher education system appeared in world practice back in the 1950s of the last century. The terms hard skills and soft skills themselves arose as an analogy to the computer concepts hardware and software and were later extrapolated from the field of economics and business to the social sphere [3].

A computer, at first glance is a kind of material object that can be felt. But the main thing in a computer is software, without which the device cannot work. The same can be said about skills. It seems that for successful work you need to have a certain set of highly professional skills, which experts call «hard» skills. But almost always high pay and successful career growth are not always achieved by the best specialists in their field, but on the contrary, people who have «soft» skills. In this regard, there is a need to study both hard skills and soft skills [4].

Recently, the study of the formation of hard skills and soft skills has attracted the attention of not only foreign teachers, but also domestic ones. For example, research in this field is most often found in the works of the following pedagogues: Abashkina O., Barinova O.V., Gaiduchenko E., Marushev A., Davidova V., Zhadko N.V., Churkina M.A., Ivanov D., Kanardov I., Klyukovskaya I., Miroshnichenko A.N., Novikov A.M., Choshanov M.A., Chulanova O.L., Pavlova E., Portland Y., Sosnitskaya O., Tataurshchikova D., Shipilov V. [5-10].

The modern labor market dictates new requirements for specialists. More and more researchers, representatives of various branches of scientific knowledge (psychology, pedagogy) note the importance of hard skills and soft skills for achieving competitiveness by university graduates in the labor market. Scientists note that the rapid penetration of computer technologies will lead to a reorientation of the needs of the labor market to competencies that digital technologies will not be able to compensate for.

Consequently all scientists divide professional skills into two groups: hard skills and soft skills. After conducting a literary review of psychological and pedagogical sources, we came to the conclusion that the concept of skills is often combined with the concept of competencies, but there are discrepancies. The main difference between skills and competencies is that skills are automated, in this regard, in our opinion, the formation of «hard» and «soft» skills in future pedagogues can be brought to automatism and thereby contribute to the development of personal and professional qualities of students.

The formation of these skills involves not only cognitive intelligence, but also social intelligence, which forms social knowledge and skills, which are the most important factor in the career development of future pedagogues. In addition to social intelligence, emotional intelligence is also involved, which is characterized by the following features: the ability to convince, find an approach to people, the ability to resolve conflict situations, willingness to consider risks, loads, stresses and conflicts, creativity, flexibility, a tendency to search for alternative solutions. Thanks to the development of hard skills and soft skills, future pedagogues will have not only subject and professional knowledge, but also various universal knowledge in the field of their

professional trajectory. The personal and professional qualities of students formed at the proper level will lead to a quick response and adaptation in the constantly changing conditions of the world labor market.

Consequently, the profession of a teacher takes a leading position in the labor market and a large set of professional knowledge and skills is required from specialists of this profile, but in addition they must possess the hard skills and soft skills system. These are objective requirements of the modern labor market, therefore, the problem of the formation of these competencies must be solved in the process of studying at a university because studying at the university is the starting point for the development of any specialist in his professional direction. If we set the main task — the need to form "hard skills" and "soft skills" for future teachers in the conditions of digitalization of education, then this will lead to the fact that our personnel will always be adapted to the changing conditions of modern society.

Experimental

To increase the level of formation of hard skills and soft skills, future pedagogues need to form knowledge and skills in this area. Pedagogues should know the specifics of these terms and form an understanding of these two terms among students. In order to consolidate the theoretical material about «hard» and «soft» skills, we conducted a survey among the 3rd year students of the educational program 6B01101 — Pedagogy and Psychology. 33 students of the pedagogical faculty of the Karaganda University of the name of academician E.A. Buketov took part in the survey.

A questionnaire was proposed, consisting of closed and open questions, which students had to answer in as much detail as possible. The questionnaire for the study of the formation of hard skills and soft skills for future pedagogues in the conditions of digitalization of education consisted of the following questions:

1. Do you understand the essence of the concept of «skill»?
2. Do you understand the essence of the concept of «competence»?
3. What qualities do you consider the most important for your future profession?
4. Define the concepts of hard skills and soft skills.
5. Which of these two skills do you consider necessary for professional activity?
6. Do you acquire the above skills while studying at university?
7. What prevents you from acquiring hard skills and soft skills at university?
8. Do you manage to master the basics of interpersonal communication in the conditions of digitalization of education?
9. Evaluate the level of teaching disciplines and the qualifications of teachers.
10. Do you consider the pedagogical education you receive to be of high quality?
11. What is the most difficult for you in the process of studying at the university?
12. What professional qualities are necessary for the profession of a future pedagogues-psychologist?
13. What skills, both professional and personal, do you think society requires from graduates, and how do you assess their importance?

The survey gave us the opportunity to make an intermediate cut, which contributed to the creation of a further research plan, which will be aimed at the most fruitful work on the formation of hard skills and soft skills for future pedagogues-psychologists in the conditions of digitalization of education. Within the framework of the conducted research, we identify the main determinants of the development of hard skills and soft skills and will continue further research in this direction, developing not only practical skills, but also paying great attention to the theoretical knowledge, personal and individual development of each student.

Results and Discussion

The analysis of the study of the features of the formation of hard skills and soft skills among future pedagogues in the conditions of digitalization showed that most students of the pedagogical faculty correctly understand the essence of the concepts of «skill» and «competence». For example, 60.6 % of the surveyed students understand and distinguish between these two concepts, 21.2 % of respondents are difficult to answer, and the rest — 18.2 % of students do not understand these two concepts, which indicates the importance of the study of the formation of these skills in the higher education system.

The results of the survey conducted among the 3rd year students of the educational program 6B01101 — Pedagogy and Psychology are presented in the Table 1 and in Figure 1

Students' understanding of the essence of the concepts of «skill» and «competence»

1. Do you understand the essence of the concepts of «skill» and «competence»?	Number of respondents	
	students	%
Yes	20	60,6
Not sure	7	21,2
No	6	18,2

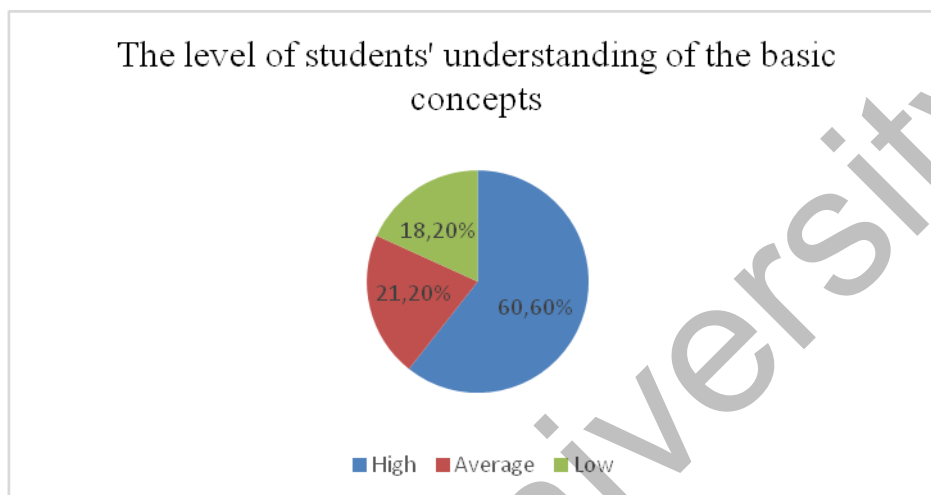


Figure 1. The level of students' understanding of the basic concepts

Among the core competencies, the students noted that the most important qualities are the personal and professional characteristics of the pedagogues. At the same time, the most important qualities that a teacher should possess in professional activity, students call critical thinking skills, corporate governance, time management and communication skills.

The students named the greatest difficulties in the formation and development of hard skills and soft skills: lack of knowledge in this field, laziness, as well as insufficient level of digital literacy for further development of these skills, for example, in a pandemic, when most students were not prepared to use distance learning technologies.

The most significant indicators of hard skills and soft skills, according to students, are the application of theoretical knowledge in practice, the formation of critical thinking skills, as well as the willingness of future teachers to work in a team. Most students believe that it is necessary to constantly develop their professional skills, pumping them in line with the modern demands of society.

The main factors preventing the acquisition of hard skills and soft skills at the university, students call personal passivity, laziness and unwillingness to develop in the first years, and as for senior courses, students note the impossibility of combining self-development and mastering the disciplines of the curriculum.

According to the results of the survey, we came to the conclusion that students of the pedagogical faculty have insufficient theoretical knowledge in the field of formation and development of hard skills and soft skills, which proves the need for a deeper study of this issue. We believe that the formation of supra-professional and professional skills of future pedagogues should be given great attention due to the global transformations of the education system.

In the process of training specialists at the university, special disciplines can form «hard» and «soft» skills, but for the competent use of these skills in work situations, students must practice them throughout the entire period of study at the university, participating in various competitions, projects, performing teamwork, etc. In modern conditions, hard skills not only complement soft skills, but also create new opportunities that contribute to the development and formation of professionalism.

Our empirical research has led us to the following conclusions:

1) most students are not familiar with the terms hard skills and soft skills, although when they get acquainted with them, they consider it important for their future professional activity;

2) the majority of respondents call critical thinking, corporate governance, time management and communication skills the most important qualities necessary for successful implementation in professional activity.

The survey also showed the need to form not only theoretical knowledge, but also practical skills that will contribute to the creation and development of a competitive and competent society of pedagogues of the new formation. The conclusion of the survey is not only to form theoretical knowledge in the field of hard skills and soft skills, but also to prepare future pedagogues for independent work in the conditions of digitalization of education.

Conclusions

In conclusion, it can be noted that the importance of two enlarged groups of competencies cannot be disputed, since hard answers the question «What should be done?» and soft answers the question «How can this be done in the best way?» On the principle of inseparability of hard and soft skills, it is necessary to build the specifics of training future pedagogues. Some educational institutions rely on soft skills when recruiting pedagogues, realizing that a future pedagogue who can learn quickly will grasp the necessary skills on the fly. Other educational institutions first focus on technical skills, realizing that a person will be able to develop soft skills in the process of work, completing tasks and implementing projects.

Our empirical research also allowed us to draw the following conclusions:

1) the concept of studying hard skills and soft skills has been popular in Western pedagogical science since the middle of the last century;

2) Western scientists in the terms «hard skills» and «soft skills» include the following features: the ability to convince, find an approach to people, the ability to resolve conflict situations, willingness to consider risks, loads, stresses and conflicts, creativity, flexibility, a tendency to search for alternative solutions;

3) after analyzing the terms «hard skills» and «soft skills», we came to the conclusion that these two skills complement each other and are necessary for effective professional activity in a constantly changing professional environment.

Thus, in the process of training competitive specialists, it is worth paying attention to the formation of hard skills and soft skills, regardless of the direction of training. Today, the profession of a pedagogue is coming to the forefront in the labor market and a large set of professional knowledge and skills is required from specialists of this profile. The problems we have raised are relevant for further research, we plan to continue it as part of the search for forms and methods of forming hard skills and soft skills for future pedagogues in the context of digitalization of education.

Indeed, in the process of training competitive specialists in the conditions of digitalization of education, it is worth paying attention to the formation of both hard skills and soft skills, regardless of the direction of training. Today, the profession of a teacher is coming to the forefront in the labor market and a large set of professional knowledge and skills is required from specialists of this profile, but, in addition, they must possess a system of professional skills that will contribute to the formation of a competitive Kazakhstan society.

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Білім беруді цифрландыру жағдайында болашақ педагогтерде «hard skills» және «soft skills» дағдыларын қалыптастыру қажеттілігі

Мақала болашақ мұғалімдердің кәсіби дайындық процесінде жеке дамуын ұйымдастырудың өзекті мәселесіне арналған. Осы мәселенің шешімі ретінде авторлар болашақ мұғалімдер арасында hard skills және soft skills дағдыларын қалыптастыру мәселелерін, олардың кәсіби мансаптағы рөлі мен жеке дамуын зерттеуге назар аударған. Бұл дағдылар болашақ мұғалімдерге білім беру ортасына сәтті бейімделуге мүмкіндік береді. Білім беруді цифрландыру жағдайында болашақ педагогтердің кәсіби дамуы процесінде hard skills және soft skills қалыптастырудың рөлі жылдан жылға артып келеді. Сонымен қатар hard skills және soft skills ұғымдары және олардың кәсіби саладағы болашақ педагогтердің дамуы үшін маңызы қарастырылған. Зерттеу тақырыбы бойынша әдеби талдау жүргізілген және осы тақырыпты зерттеген басқа авторлардың кәсіби дағдыларды түсіну тәсілдеріндегі жалпы және ерекше белгілер атап өтілген. 6B01101 — Педагогика және психология білім беру бағдарламасының студенттері арасында сауалнама жүргізілген, зерттеу базасы ретінде академик Е.А. Бөкетов атындағы Қарағанды университетінің педагогика факультеті таңдалған. Жүргізілген эмпирикалық зерттеулердің нәтижелері мақалада келтірілген. Зерттеу нәтижелері авторларға тек теориялық білімді ғана емес, сонымен қатар жана формациядағы мұғалімдердің бәсекеге қабілетті және құзыретті қоғамын құруға және дамытуға ықпал ететін практикалық дағдыларды қалыптастыру қажеттілігі туралы қорытынды жасауға мүмкіндік береді. Авторлар қозғаған мәселе әрі қарай зерттеу үшін өзекті болып табылады және білім беруді цифрландыру жағдайында болашақ педагогтерде hard skills және soft skills қалыптастыру нысандары мен әдістерін іздеуде жалғастырылатын болады.

Кілт сөздер: дағды, құзыреттілік, креативтілік, икемділік, кәсіби дағдылар, болашақ педагогтер, білім беруді цифрландыру, кәсіби сала, білім беру мекемелері, теориялық білім, практикалық дағдылар.

Л.А. Шкутина, Т.Г. Исхакбаева, Ж.А. Карманова, Я. Данек

Необходимость формирования «hard skills» и «soft skills» у будущих педагогов в условиях цифровизации образования

Статья посвящена актуальной проблеме организации личностного развития будущих педагогов в процессе их профессиональной подготовки. В качестве решения данной проблемы авторы уделяют внимание изучению проблемы формирования *hard skills* и *soft skills* у будущих педагогов, их роли в профессиональной карьере и личностном развитии. Данные навыки позволяют будущим педагогам успешно адаптироваться в образовательной среде. С каждым годом возрастает роль формирования *hard skills* и *soft skills* в процессе профессионального развития будущих педагогов в условиях цифровизации образования. В статье рассмотрены понятия *hard skills* и *soft skills* и их значимость для развития будущих педагогов в профессиональной сфере. Авторами проведен литературный анализ по теме исследования, отмечены общие и отличительные черты в подходах к пониманию надпрофессиональных и профессиональных навыков различными авторами. Авторами проведено анкетирование среди студентов образовательной программы 6B01101 — «Педагогика и психология», базой исследования послужил педагогический факультет Карагандинского университета имени академика Е.А. Букетова. Результаты

проведенного авторами эмпирического исследования представлены в статье. В свою очередь, они позволили авторам сделать вывод о необходимости формирования не только теоретических знаний, но и практических навыков, которые будут способствовать созданию и развитию конкурентоспособного и компетентного общества педагогов новой формации. Затронутая авторами проблематика является актуальной для дальнейшего исследования и будет продолжена в поиске форм и методов формирования *hard skills* и *soft skills* у будущих педагогов в условиях цифровизации образования.

Ключевые слова: навык, компетенция, креативность, гибкость, профессиональные навыки, будущие педагоги, цифровизация образования, профессиональная сфера, учреждения образования, теоретические знания, практические навыки.

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