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Education in the VUCA world through formation hard and soft skills in students

The article is devoted to the actual problem of developing the professionalism of future teachers-psychologists through the formation of hard and soft skills. The authors attach great importance to the formation of these skills, calling them a necessity in the modern world. The authors conducted a theoretical analysis of psychological and pedagogical literature on the topic of the study. The article touches on an equally relevant topic, to which they also paid great attention – this is education in the VUCA world. The relationship of the formation of hard and soft skills and adaptation in the VUCA world was carried out, the main components of the world of transformations were determined: Vision, Understanding, Clarity, Agility. To achieve success in each of the components, teachers need to focus on the formation of students' professional skills. 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 Buketov University. The article presents the results of an empirical study conducted by the authors. 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 teachers in the modern VUCA world.

Keywords: skill, competence, vision, understanding, clarity, agility, future teachers, VUCA world, professional sphere, theoretical knowledge, practical skills.

Introduction

Success in the labor market depends mainly on two components – developed soft and hard skills. Various industrial changes that have taken place in the world contribute to the creation of a new industry, where the main source of success becomes a person. The object of research of various sciences is a person with his certain set of qualities. In our study, we want to reveal the need for the formation of soft and hard skills among university students. The Industrial Revolution has become a challenge for the education system, revealing the need to create certain conditions for the harmonious development of the student's personality. The revolution in the field of the education system requires the preparation of high-quality human resources adapted to changing conditions.

University graduates need to be more qualified, flexible, professional and adaptive specialists. All this can be achieved by changing the training format. Changes in the training format mean a training policy that will focus on the formation of soft and hard skills.

The modern world is characterized as an economic era where all activities are focused on the competitiveness of the global labor market. And the market, in turn, needs personnel with highly developed intelligence, the level of development of which is directly related to the skills formed.

The question of orientation to the needs of the market is raised in the Message of the Head of State Kassym-Jomart Tokayev to the people of Kazakhstan “A just state. One nation. A prosperous society” dated September 1, 2022 [1], which indicates the need to focus on the real needs of the labor market and compliance with the objectives of the new economic course of the country.

The need to prioritize the formation of skills was mentioned back in the 90s of the last century, when the concept of VUCA — a world based on instability, uncertainty, complexity and ambiguity was first mentioned (deciphering the abbreviation by capital letters) [2]. According to the creators of this concept, it is impossible to prepare in advance for any changes, it is difficult to make forecasts and make plans. In the VUCA world, it is necessary to focus on the formation of skills and competencies that will be the key to success in modern society. The formed hard skills and soft skills of students will make it possible to make a positive interpretation of VUCA to the world as Vision, Understanding, Clarity, Agility.

Literature review

The terms “hard” and “soft” skills were proposed back in the 50s of the 20th centuries, then they were considered as separate units. After some time, the two terms began to be considered as complementary skills, which together play an important role in the formation of each person's personality.

Dennis R. Laker and Jimmy L. Powell consider it is necessary to distinguish between the two concepts. In their research, the authors analyze the need for students to study information both in the field of “hard skills” (professional) and in the field of “soft skills” (intrapersonal and interpersonal) [3].

By distinguishing between the two types of skills, it becomes clear that these skills are given special attention by scientists. Due to the fact that the skills we study have become popular in the current century, and the interest in them is new and innovative. For example, Achmad Fajar Hendarman & Uwe Cantner analyzed the literature on the issue of studying this problem and noted the importance of the formation of individual innovativeness of the individual along with hard skills and soft skills, due to the fact that the skills themselves are innovative [4].

Masduki Asbari believes that the formation of soft and hard skills among lecturers of higher educational institutions directly affects the innovative abilities of the lecturer because these abilities allow developing the organizational culture of the teacher [5].

Pieterse, V., & Van Eekelen, M. in their study describe the technical and personal skills necessary for students to successfully find employment, the authors conducted a study in which they examined the problems of students in the formation of these skills and gave recommendations on how to eliminate gaps in students' knowledge [6].

Dora Abidi, in turn, considered strengthening the organizational capabilities necessary to build training sessions using soft skills and designated this as a strategy for the VUCA of the world [7].

In their book “Managing in a VUCA World”, Mack, O., Khare, A., Krämer, A., & Burgartz, T., speaking about the need to manage the VUCA world, make an argument about the independence of learning based on personal and professional experience gained on skills [8].

Riyanti, B.P.D., Sandroto, C.W., & DW, M.T.W. analyze the impact of hard skills and soft skills on students' ability to become entrepreneurs. The authors believe that hard skills will allow students to start a business, and soft skills will make their business successful [9].

Having analyzed the psychological and pedagogical literature on the subject of the study, we believe that hard skills cannot be considered separately from soft skills because the formation of both skills leads to success not only in professional activity, but also in the changing VUCA world.

Experimental

In this article, using the analysis of scientific psychological and pedagogical literature on the problem of research, generalization of pedagogical experience and survey methods, an attempt was made to determine the level of students' awareness of the differences in the terms Hard skills & Soft skills using the questionnaire method.

As part of the work on our research, we considered it was necessary to clarify the students' degree of awareness of the studied skills. If students do not distinguish between the two skills, then this may become a certain difficulty in their future professional activities.

To conduct the survey, we used a Google form, which ensured the scale, speed and minimum time spent on data processing. The questionnaire consisted of 20 questions, each of which contained a certain characteristic, after reading which, students had to determine what kind of skill it was. Table 1 shows the questions used in the questionnaire.

Table 1

Questions within the framework of the survey

№	Question
1	If you are a great communicator, is it hard skill or soft skills?
2	Qualification — is it hard skill or soft skill?
3	Certificates of completed courses — is it hard skill or soft skill?
4	If you are extremely motivated, is it hard skill or soft skills??
5	If you are proficient in HTML, is it ...
6	Proficiency in a foreign language is ...

7	Being a team player is ...
8	Being a qualified carpenter is ...
9	Organization is ...
10	Soft skills are usually related to your personality and your communication skills with people - yes - no
11	Hard skills will help you get a job, and soft skills will allow you to keep your job - yes - no
12	Soft skills do NOT help to determine the type of person you have to work with - yes - no
13	Hard skills are specific professional abilities - yes - no
14	Once you acquire a hard skill, it usually stays with you throughout your career - yes - no
15	Hard skills are usually not quantifiable and teachable, such as accounting strategies, computer programming, etc. - yes - no
16	A good CV will NOT have a good balance of your soft & hard skills - yes - no
17	Despite the fact that hard & soft skills are equally valuable, in some professions the demand for soft skills is higher than for hard skills - yes - no
18	Which of the following is not a soft skill? - problem solving - flexibility - teamwork - degree / diploma
19	Which of the following skills is not a hard skill? - typing speed - machine operation - time management - computer programming
20	Unlike hard skills, it is difficult to point to concrete evidence that you possess soft skills - yes - no

This survey was the ascertaining stage of our experiment. The link to the questionnaire was sent to the 2nd year students of the educational program 6B01101 – Pedagogy and Psychology of the Karaganda Buketov University, in total 38 students were involved. This sample is explained by the fact that 2nd-year students have already studied disciplines according to the work curriculum from the cycle of GD (general disciplines), PD (profile disciplines) and BD (basic disciplines), therefore they have a certain amount of knowledge in the direction of their profession and also 2nd-year students have the opportunity and time to eliminate gaps in knowledge and the formation of hard and soft skills.

Results and Discussion

A general analysis of the responses showed that the students who took part in the survey are aware of the terms hard skills and soft skills. In the course of the survey, low results were revealed when students found it difficult to choose the right answer. According to the results of the survey, it can be concluded that only 23.6% of students scored high results by answering questions on a scale from 15 to 20 points. The average level of students' awareness of the studied skills is 26.3%, and the low level of students' awareness on the scale of

correct answers from 0 to 10 points was 50%. The results of the survey are presented in Table 2. The visual result is shown in Figure.

Table 2

Survey results

№	Awareness level (by levels)	Number of respondents (people)
1	Low level (0–10 points)	19
2	Average level (10–15 points)	10
3	High level (15–20 points)	9

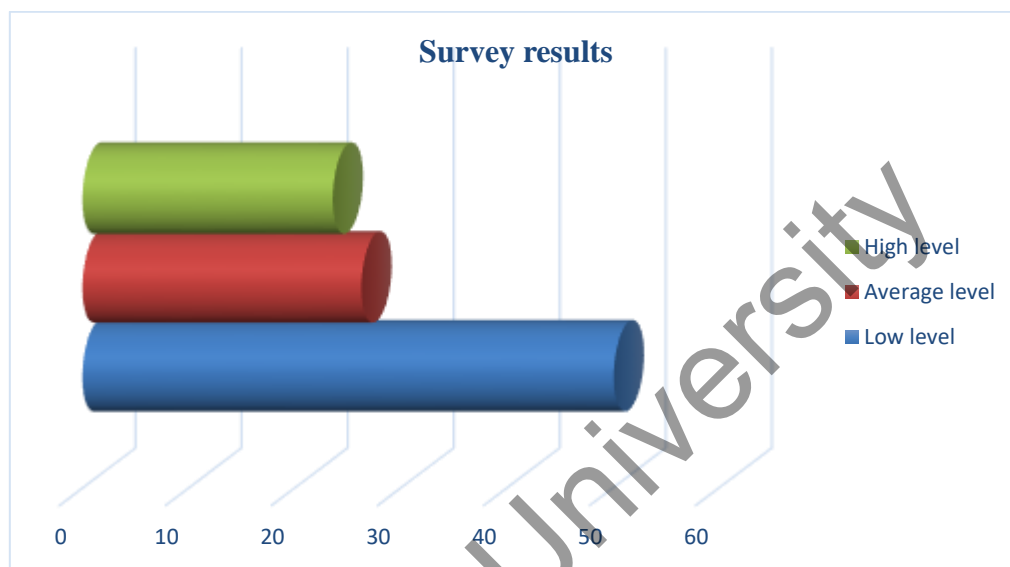


Figure. Survey results

Students note that the hardest questions were given to them, in which it was necessary to choose between hard and soft skills. Questions where it was possible to answer “yes” or “no” were given to them easier due to a random choice. At the end of the survey, the students were interested in the difference between the two terms and many of them showed great interest in studying the problem we are investigating.

So, for example, to the question: “If you are a great communicator, is it hard skill or soft skill?” the majority of respondents answered that it is hard skill, explaining that communication skills are developed only by professionals. And to the question: “If you are good at HTML, this is ...” most students answered soft skills, explaining that they do not fully understand the meaning of this term.

Analysis of the results of the control section allowed us to conclude that the existing level of awareness of the terms hard and soft skills has a number of disadvantages:

- the theoretical material that students study within the framework of the disciplines provided for in the curriculum, affecting the professional skills of future teachers, sufficiently fully reveals the pedagogical activity itself, without affecting the professional and pedagogical skills necessary for successful career growth;
- students do not form complex ideas about the terms hard and soft skills, because many students do not understand their difference;
- most students do not think about the importance of the formation and development of skills due to the lack of theoretical and practical knowledge in the field of this issue;
- there is no specialized knowledge, as well as practical skills for the formation of hard and soft skills.

This stage of the experiment allowed us to identify the experimental and control group for the subsequent stages of the experiment — the formative and control. Thanks to the conducted control section, we were able to identify the problems associated with the study of professional skills, as well as to develop a special course aimed at the formation of hard and soft skills for future teachers-psychologists in the modern VUCA world.

Conclusions

Summing up the results of the survey, we can draw the following conclusions: skills are a necessity not only for society, but also for the education system. Certain skills are no worse or better than each other, each skill in itself is something complete and important. The skills complement each other, forming students with various skills they need to adapt to the modern world of innovation and digitalization.

As mentioned above, skills are the key to success in professional activities. The VUCA world dictates new rules within which it is necessary to build your professional activity according to the demands of this world. The results of the study show that there is a huge interest among students to master certain types of skills, but they lack knowledge in this area. The teaching profession requires constant development, and development, in turn, will lead to results.

It is not very easy to acquire skills, therefore, if teachers notice during the years of study that students lack certain skills, and then this factor should be improved. Any skill, regardless of whether it is formed quickly or slowly, stable or weakened, depends on the desire, determination and receptivity of the subject; practice depends on the complexity of the skill itself.

In conclusion, we believe that the results of the study will be useful for the teaching staff of higher educational institutions. As soon as teachers will focus their attention on the issue of the formation of professional skills, competitive specialists will appear on the labor market, which VUCA world needs. It is difficult to overestimate the importance of hard and soft skills in the VUCA world, and we suggest starting to form these skills already in the learning process, while choosing the best of them that will be universal and applicable in various fields of activity. They will be useful both in a crisis situation and in a quiet time. It is valuable that you can and can apply, and not just know. Therefore, education in the VUCA world through the formation of hard and soft skills in students is the surest solution.

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Студенттерде **hard skills** және **soft skills** қалыптастыру арқылы VUCA әлеміндегі білім

Мақала **hard** және **soft skills** қалыптастыру арқылы болашақ педагог-психологтердің кәсібилігін дамытудың өзекті мәселесіне арналған. Авторлар бұл дағдыларды қалыптастыруға үлкен мән береді, оларды қазіргі әлемдегі қажеттілік деп атайды. Зерттеу тақырыбы бойынша психологиялық-педагогикалық әдебиеттерге теориялық талдау жүргізілген және VUCA әлеміндегі білім туралы өзекті мәселелерді қарастырған. **Hard** және **soft skills**-тің қалыптасуы мен VUCA әлеміндегі бейімделу арасындағы байланыс жүргізілген, трансформация әлемінің негізгі компоненттері анықталған, олар: *Vision, Understanding, Clarity, Agility*. Белгілі бір жетістікке жету үшін педагогтер студенттердің кәсіби дағдыларын қалыптастыруға баса назар аударуы керек. Авторлар «6B01101-Педагогика және психология» білім беру бағдарламасының студенттері арасында сауалнама жүргізді. Зерттеудің негізі академик Е.А. Бөкетов атындағы Қарағанды университетінің педагогика факультеті болды. Мақалада авторлар жүргізген эмпирикалық зерттеудің нәтижелері келтірілген. Зерттеу нәтижелері авторларға теориялық білімді ғана емес, сонымен қатар қазіргі VUCA әлемінде бәсекеге қабілетті және құзыретті педагогтер қоғамын құруға және дамытуға ықпал ететін практикалық дағдыларды қалыптастыру қажет деген қорытынды жасауға мүмкіндік берді.

Кілт сөздер: дағды, құзыреттілік, пайымдау, түсіну, айқындық, икемділік, болашақ мұғалімдер, VUCA әлемі, кәсіби сала, теориялық білім, практикалық дағдылар.

Т.Г. Исхакбаева, К.Т. Аналбекова, К.Т. Кошқумбаев

Образование в VUCA мире через формирование жестких и мягких навыков у студентов

Статья посвящена актуальной проблеме развития профессионализма будущих педагогов-психологов через формирование *hard* и *soft skills*. Авторы уделяют большое значение формированию данных навыков, называя их необходимостью в современном мире. Ими проведен теоретический анализ психолого-педагогической литературы по теме исследования. В статье затронута не менее актуальная тема — образование в VUCA мире. Проведена взаимосвязь сформированности *hard* и *soft skills* и адаптации в VUCA мире, определены основные составляющие мира трансформаций: *Vision, Understanding, Clarity, Agility*. Чтобы достичь успеха в каждом из составляющих, педагогам необходимо сделать акцент на формировании у студентов профессиональных навыков. Авторы провели опрос среди студентов образовательной программы 6B01101 — «Педагогика и психология», основой исследования послужили анкеты обучающихся педагогического факультета Карагандинского университета имени академика Е.А. Букетова. В статье представлены результаты эмпирического исследования, проведенного авторами. Результаты исследования позволили авторам сделать вывод о том, что необходимо формировать не только теоретические знания, но и практические навыки, которые будут способствовать созданию и развитию конкурентоспособного и компетентного общества педагогов в современном VUCA мире.

Ключевые слова: навык, компетентность, видение, понимание, ясность, гибкость, будущие учителя, мир VUCA, профессиональная сфера, теоретические знания, практические навыки.

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