

RELEVANT KEY PROFESSIONAL SKILLS AND THE LEVEL OF THE EDUCATION SEEKERS' AWARENESS IN THIS REGARD

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Abstract. *The modern development of the professional market is characterized by rapid transformations associated with the widespread use of digital technologies and the advent of artificial intelligence. This situation affects the field of employment, accelerating the emergence and disappearance of professions, and leads to a reassessment of the key professional skills that modern employees should have. However, there is a certain gap between the skills that are needed in the professional market and the ability of the education system to ensure their development. Given the trends of rapid technological transformations and corresponding changes in the employment market, professional education should train specialists capable of constant improvement of their professional level, possible retraining. Such tasks involve a certain change in the functions and objectives of higher education, and therefore scientists are increasingly paying attention to the process of formation and development of those students' skills which will contribute to the realization in the employment market even during its structural transformations. The purpose of the study is to review the extent to which the students themselves know and understand the content and requirements of modern skills with a view to improving the professional training of future specialists by the higher education system. Based on research in the field of professional skills, the skills identified at the World Economic Forum 2023 in Davos have been chosen as a guide. A survey of education seekers with the aim of identifying the understanding of the importance of the specified skills has shown a gap between the optimal set of skills and the education seekers' perception of them. We observe a shift in the preferences of education seekers towards technological skills, and at the same time*

insufficient awareness of the importance of so-called soft skills, which collectively constitute the sphere of skills necessary to achieve professional and life success and is an indicator of human capital. The findings support the need for purposeful development in the process of professional training of the key skills that employees need today in order to improve the conformity of education and training with the requirements of the professional market.

Introduction

The rapid development of technology in the 21st century is causing global changes in the economy and employment. There are different views on how the rapid development of digital technologies will affect the economic progress of countries. According to forecasts of the World Economic Forum in Davos, the rapid labor automation will lead to a significant loss of jobs and their replacement by machines within the next five years (Future of Jobs Report, 2023). It is emphasized that a significant part of professions that have previously been the prerogative of people is under threat of extinction. Other researchers believe that the development of technology, on the contrary, will contribute to the emergence of new types of employment, that the reduction of jobs will be balanced by the creation of new jobs in new industries - "jobs of tomorrow" (Clark, 2020). The trends arising under the influence of the development of artificial intelligence and digital technologies indicate that in the coming years there will be a need for skills capable of providing a number of benefits in the professional market for the individual who possesses them.

Problem statement

As a result of the rapid structural transformation of the employment market under the influence of innovations, during the next decade a significant share of newly created jobs will fall on completely new professions, those that exist now will undergo significant transformations in terms of their content and skill requirements. The World Economic Forum: Future of Jobs Reports 2020 and Future of Jobs Reports 2023 analyze the current skills needed for employment today. Among more than 26 necessary skills, there are both those that have long been formed by education, and those that are new (Future of Jobs Report, 2023). Researchers have pointed out that most existing educational systems were created under the influence of the Second Industrial Revolution, and therefore cannot keep up with the pace at which the digital age creates new scenarios and new demands for the skills (Gratton, 2018). The pace of technological change causes not

only the gap between demand and supply of skills, but, as the reports of the Forum in Davos show, widens this gap. The education system not only in Ukraine, but also in the world fails to react enough to these changes. These trends should be taken into account during the professional training of modern specialists, which should ensure the formation, on the one hand, of resilient, basic skills such as technological, managerial, cognitive; and on the other hand, to prepare for the ability to change and improve one's skills, since, according to research, the skills of modern employees will be transformed within the next five years (Clark, 2020). As noted by Juan Carlos Ayala Calvo & Guadalupe Manzano García (Calvo & Garcia, 2020), today's graduates need more skills for employment than those they received during their studies at higher education institutions. Under such conditions, it is relevant to study the question of how the higher education system responds to such challenges, and whether it is able to train specialists with the key skills identified in the Future of Jobs Report 2023 in Davos. Taking into account the above-mentioned issues on the development and formation of skills in the XXI century, the question warrants answers on the extent to which the students themselves know and understand the content and modern skills requirements with a view to improving professional training of future specialists in the higher education system.

Analysis of research and publications

Recently, skills have been studied in the context of technology-driven transformations in the labor market and challenges facing the education system. A significant amount of research is devoted to the role of skills in employment (Calvo & Garcia, 2020; Salman et al, 2020). Taking into account the trends of rapid technological transformations and corresponding changes in the employment market, vocational education should train specialists capable of constant improvement of their professional level, possible retraining. Such tasks involve a certain change in the functions and objectives of higher education, and therefore scientists are increasingly paying attention to the process of formation and development of those education seeker's skills which will contribute to the realization in the employment market even during its structural transformations. It is no coincidence that attention is focused on such elements of professional training as "skills" and "competencies", since these are two interrelated components in the structure of professional qualifications.

In the study of professional skills, there are two basic questions that need to be answered: the essence of the concept 'professional skill', and the classification of skills. Despite the fact that the skill has been studied for more than a dozen years, the definition of this term has not

yet received a unified formulation. Skill is considered as a component of competence. Competence according to scientists Salman M., Ganie S., Saleem I/ includes two groups of skills - soft and hard skills, i.e. social-communicative and professional skills (Salman et al, 2020).

Researchers often use the terms soft and hard skills to describe related concepts: they are interpreted as flexible skills, life skills, transversal skills, cross competencies, generic competencies, key competencies for a successful life and well-functioning society, key competencies for lifelong learning, 21st century skills, transferable skills, future work skills, skills for talent, skills for social progress, employability skills, core skills, necessary skills, workplace know-how skills, essential skills (Bohdan, 2023).

Other authors Miller, Biggart, & Newton, combine all classifications and introduce the term employability skills - these are the qualities that employers look for in college graduates and on which professional growth and continuous learning depend (Trevelin et al, 2023). The team of authors Del Carpio, Ximena, Olga Kupets, Noël Muller synthesized a variety of views on the essence of the concept of skill and define it as the flexible ability of a person to perform assigned tasks and respond to situations. Skills are certain attitudes, beliefs, and behaviors that can change as an individual develops and can be improved within special programs and policies. They divide skills into three broad categories: cognitive, socio-emotional and technical (Del Carpio et al, 2017).

Despite the existing scientific research on the issues of classification of skills, organization and methods of teaching modern skills, the issue of the level of formation of relevant professional skills and their understanding by education seekers is still poorly studied.

The purpose of the study is to determine the level of education seekers' awareness of key professional skills.

Research results

Thus, to date, there is also no unified classification and hierarchy of skills, however, despite the differences in classifications, definitions and methodological approaches, the analysis of sources has shown that a modern specialist must possess a certain set of skills for long-term success in the employment market. Analyzing the various classifications of professional skills that will be relevant in the next decade (Calvo & Garcia, 2020; Kautz et al, 2014) it has been found that each of them has an almost identical set of components that make them up, only their places change. Some researchers put technological skills in the first positions, others put cognitive skills first, while still others consider as the main skills those viewed by others as

components of a particular skill. Thus, the classification consists of the same set of competencies, but in different modifications.

Therefore, it can be concluded that the number of modern skills is limited to two dozen, but their number is quite sufficient for researchers to justify their classifications and hierarchies with one or another significant change in the competency requirements.

In the matter of the skills hierarchy, the opinion of employers is important, emphasizing that today's employees need certain key skills. (Future of Jobs Report 2023) The Future of Jobs Report 2023 in Davos has defined the top 10 basic skills that modern employees should have and which will be relevant in the next decade. Skills from this list are classified by specificity: cognitive skills, self-efficacy skills, technological skills, and skills for working with others. The highest position in the list is occupied by the cognitive skills - analytical thinking and creative thinking, in the top 10 they occupy the first and second positions. Self-efficacy skills: resilience and flexibility are ranked third, motivation and lifelong learning are ranked fourth and fifth, respectively, and self-efficacy skills such as dependability and attention to detail are ranked seventh. Technological skills in the ranking are represented by the skill of technological literacy, which occupies the sixth position. The skills of working with others close the list: the eighth position is occupied by empathy and active listening, while the ninth is occupied by leadership and social influence. The skill of quality control, which belongs to management skills is ranked tenth.

The analysis conducted by the World Economic Bank in 2017 "Skills for Ukraine" also analyzed employers' demand for skills in the domestic employment market (Del Carpio et al, 2017). Despite the fact that the study was conducted before the pandemic and military operations in our country, and accordingly, did not take into account the influence of these factors. At the same time, the skills that were relevant in the domestic employment market are correlated with modern requirements for the necessary qualities of employees. The study identified three groups of skills - cognitive, socio-emotional and technical. This study, among the cognitive skills identified as the most valuable in the professional market of Ukraine include the following: problem solving, sociability, creative and critical thinking, ability to learn, organization of working time. Among socio-emotional skills, domestic employers consider self-organization, stress resistance, ethics, teamwork, and achievement motivation to be the most important. If we combine these skills according to the usual characteristics, then they belong to two groups of soft and hard skills.

Analyzing the specified skills, it can be concluded that they have a wide application and are not limited to the narrow framework of one profession, and thus work for a long-term perspective. Possession of

skills from the specified list ultimately forms such a generalized characteristic as flexibility, the ability to find oneself in related professions, to retrain, to adapt to new demands and challenges brought about by modern technological changes. The main characteristic of most skills is the ability to master them during life. At the same time, the foundation for such an individual's ability is formed precisely by the education system.

In order to obtain data on the level of awareness of current professional skills for future employment among education seekers, the skills highlighted at the Forum in Davos have been chosen as a guideline. It should be taken into account that the specified top 10 skills are relevant precisely for those sectors of the economy for which vocational training takes place at UIPA. Although the list of necessary skills is relatively equal in different sectors of the economy, there are still certain differences. In the media entertainment and sports industry, empathy, active listening, dependability and attention to detail are valued twice as much as in other industries.

Determining the level of students' awareness of the importance of key skills for future self-realization in the professional market was carried out using a special questionnaire, which was compiled in the following way. The top 10 skills defined at the Davos forum, as mentioned above, were used as a benchmark. It was assumed that entrepreneurs who were interviewed to determine key skills were stakeholders who were interested in the availability of these skills among graduates of higher education institutions and thus directly influenced the education process, therefore their ranking of skills was more relevant than that of students. This gives reason to accept the rank sequences, constructed based on the results of the employers' survey, as optimal. According to the ranking indicators of the employers, a table of the optimal ranking distribution of the specified skills was made, which was presented to the students in the form of a questionnaire.

The following formula was used to analyze the survey results:

$$Y = \frac{\sum_{i=1}^m n_{1...N}}{m}$$

where Y is a rank index, m is the number of respondents, N is the number of ranks, n is the rank value.

To check the reliability of the studies, we were guided by the recommendations for sociological research (Vazhynskyi, 2016) changed the order of the answer options in each part of the questionnaire and conducted a repeat survey a few weeks after the previous one. Then the number of matches was compared according to

the data obtained for the first time and the second time. The reliability of the studies of each part of the questionnaire ranged from 79% to 83%. Such reliability meets the requirements of similar studies.

The research sample consisted of 130 students of the Ukrainian Engineering and Pedagogical Academy studying in the third and fourth years. Based on the purpose of the research, students studying in senior years have been selected, because the third- and fourth-year students have more formed professional competencies, and, accordingly, better formed ideas about their own profession. An additional factor that contributed to the selection of such an age sample for the survey is also the fact that a significant percentage of senior students already have work experience, and thus, have a certain understanding of employers' demands. The average age of the surveyed education seekers was 19.49 years. The data were collected through Google forms. After the first survey, the students received the results presented in Table 1 and Figure 1.

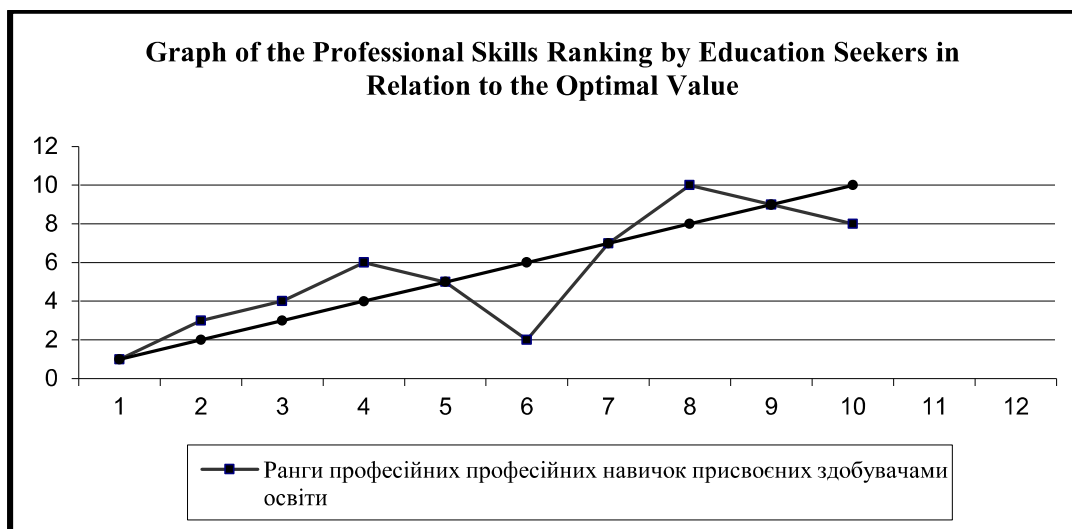
Top 10 skills	Rank	
	Optimal value	Value provided by students
1. Analytical thinking	1	1
2. Creative thinking (or creativity)	2	3
3. Resilience, stress tolerance and flexibility	3	4
4. Motivation and self-awareness	4	6
5. Curiosity and lifelong learning	5	5
6. Technological literacy	6	2
7. Dependability and attention to detail	7	7

8. Empathy and active listening	8	10
9. Leadership and social influence	9	9
10. Quality control	10	8

Table 1. Top Skills Students' Ranking Results

The results of the survey have been presented in comparison with the "optimal distribution". Reflecting the "optimal distribution" in this stacking order of values, straight lines are formed on the graphs, in relation to which the discrepancy and the direction of deviations from the optimal values, which have been obtained during the study of the respondents' answers, are visually presented.

Analyzing the results of the education seekers' survey, we can clearly see rank preferences, which show the greatest deviations in students' understanding of the place of modern professional skills at the time of the survey.



the ranks of professional skills assigned by the education seekers optimal rank values.

Fig. 1. Professional Skills Ranking by Education Seekers in Relation to the Optimal Value

The results of the ranking show that education seekers understand the importance of analytical thinking as a key professional skill that affects

their competitiveness. This skill was assigned the 1st rank by the students. This result shows that, in general, professional education forms an understanding of the importance and necessity of developing one's own analytical skills as one of the factors for achieving success and the ability to comprehensively solve various tasks and problems at the workplace.

Another important cognitive skill, "creative thinking (or creativity)" has been assigned only 3rd position by the students, which is the result of underestimation of the importance of such a skill by higher education, and, as a result, lack of understanding of the importance of this skill by students. Creative thinking, or creativity, has been constantly included in the top 10 skills, occupying the top positions of the rating, and is key for various industries that are transformed under the influence of new scientific inventions and new technologies. Creativity is considered not only as a special ability to implement and develop modern techniques and technologies, to independently find solutions when solving professional tasks, but also as the ability to work creatively, in particular, in relation to the creation of new objects of equipment and technologies (Future of Jobs Report, 2023; Calvo & Garcia, 2020; Del Carpio et al, 2017). This skill is one of those that directly affects the ability to adapt to changes in the workplace in the future.

Self-efficacy skills such as resilience, flexibility and mobility, motivation and self-awareness, curiosity and lifelong learning, dependability and attention to detail were ranked 4th, 6th, 5th and 7th respectively by students. It is significant that all self-efficacy skills, except for motivation and self-awareness, received values that are the same as the optimal or close to the optimal indicator. Education seekers gave the same value to lifelong learning as the optimal indicator, which is explained by the practical experience of students. As noted above, the majority of respondents in senior courses have some professional experience in performing certain functional duties at workplaces, which required them to quickly adapt to new professional conditions, master new technologies, improve their own knowledge and skills; to quickly change the type of work, perhaps even switching to another type of activity. This is a positive trend given that employers are emphasizing the importance of employees embracing a culture of lifelong learning as the life cycle of their skills shortens.

Such self-efficacy skill as "dependability and attention to details" according to the distribution by education seekers received the 7th position, and corresponds to the optimal distribution. The respondents understand employers' demands for high-quality and qualified performance of their work duties. This also applies to such a skill as "resilience, flexibility and mobility", which also received an indicator

close to optimal. It can be stated that the education seekers understand the impact of this skill on the ability to adapt, both to the requirements of the workplace and to the rapid transformations of the professional market.

At the same time, education seekers underestimate such a skill as "motivation and self-awareness", which indicates a number of problems that require correction from the professional education system. This skill, which occupies the fourth position according to the optimal rating, was given 6th place by students. The difference with the optimal value is two points. The efficiency of performing professional tasks is closely related to motivation, which is noted by employers. The presence of the motivation factor makes it possible to transform knowledge, skills and abilities into means of personal and professional growth. Therefore, it is important to develop an understanding of the relationship between such self-efficacy skills as "flexibility and mobility", "motivation and self-awareness", "curiosity and lifelong learning" during the course of higher education.

Respondents assigned 8th position to the proposed professional skill "empathy and active listening". This skill belongs to the skills of working with others. The difference relative to the optimal value by 2 points indicates an underestimation by students of the skills of working with others, which are basic for emotional intelligence and communicative competences. This skill is important in other areas as well, because it determines the direction and method of action not only in a specific profession, but also affects ways of solving career and life situations, the ability to cooperate with others. In today's professional environment, these skills are as important as the ability to communicate with others and explain tasks to them. That is, there is a certain gap between the demand for this skill among employers, and the understanding of the importance of this skill by education seekers. At the same time, another skill of interaction with others "leadership and social influence" was distributed by the students according to the optimal value. Thus, the results have shown that during the formation of professional value orientations, it is necessary to consolidate in the minds of students the understanding of the importance of working with others, which can affect not only the employment and success of individuals, but also the company's activities in general. However, this is not an easy task for the higher education system, since the development of these skills is slower and depends more on individual characteristics of the personality than on technical skills (Trevelin et al, 2023).

At the same time, students somewhat overestimate the importance of technological skills; there is a bias in estimates. Education seekers gave this value the second position in contrast to the optimal value. As

businesses introduce advanced technology, tasks such as information and data processing are becoming increasingly automated, leading to a reshaping of labor markets and a change in the skills required to work (Krasnoshchok et al, 2023). Technical skills consequently, although included in the Top 10 list, but in the opinion of employers are significantly inferior to cognitive skills and self-efficacy skills, and in the optimal distribution occupy the sixth position.

Conclusions

Therefore, higher education faces the task of ensuring the formation of key skills in education seekers which would meet the modern needs of the rapidly transforming professional market. In order to achieve this goal, it is necessary to study the issue of education seekers' awareness of modern professional skills, which are represented by the key skills identified at the Davos Forum 2023. A survey of education seekers, conducted in order to identify the understanding of the importance of the specified skills, showed a gap between the optimal set of skills and the perception of them among education seekers. There is a shift in the preferences of education seekers towards technological skills, and at the same time insufficient awareness of the importance of so-called soft skills, which collectively constitute the sphere of skills necessary to achieve professional and life success and is an indicator of human capital. The findings support the need for purposeful development in the process of professional training of the key skills that employees need today in order to improve the conformity of education and training with the requirements of the professional market.

Issues regarding strategies for the development of modern professional skills by the education system, ways to tighten the links between the education system and the employment market need further research.

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