

Research Paper

Features of Using the Opportunities of the Digital Environment of the Higher Educational Institution for the Development of Future Economists' Professional Competence

Nataliia Bakhmat¹, Liudmyla Sydoruk^{2*}, Hanna Poberezhets³, Viktoria Misenyova⁴, Olena Boyarova⁵ and Yuliia Mazur⁶

¹Department of the Department of Theory and Methods of Primary Education, Kamianets-Podilskyi Ivan Ohienko National University, Kamianets-Podilskyi, Ukraine

²Department of Economic Cybernetics, Information and Socio-Cultural Activity, Educational and Rehabilitation Institution of Higher education "Kamyanets-Podilsky State Institute", Kamianets-Podilskyi, Ukraine

³Dept. of Ukrainian Studies, Faculty of Accounting and Finance, Mykolayiv National Agricultural University, Mykolayiv, Ukraine

⁴Department of Foreign Languages and Professional Communications, Yaroslav Mudryi National Law University, Kharkiv, Ukraine

⁵Department of Accounting and Taxation, National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine

⁶Department of Marketing, Interregional Academy of Personnel Management, Kyiv, Ukraine

*Corresponding author: l_sudoryk@ukr.net (ORCID ID: 0000-0002-4970-5197)

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ABSTRACT

The present academic paper is devoted to studying the degree of development of individual components of future economists' professional competence in the digital environment of higher educational institutions. In the course of the research, the level of effectiveness of digitalization of higher educational institutions was studied. To assess the actual competence level of future specialists in the field of economics, a questionnaire survey of students - future economists in Poland, the Czech Republic, Germany, and France was conducted. Based on the analysis of the results, the qualifications of students - future economists were assessed, considering the features of labour markets in different countries. According to the research data, it has been established that apparent differences in the degree of digitization of higher education institutions can be observed in various countries, which affects the competence of future specialists. The difference in the degree of development of digital technologies in higher educational institutions causes the formation of a significant gap in the level of professionalism in general and digital competence, in particular, among students of economic specialties. To carry out a highly-effective professional activity, an economist should possess relevant technical, digital, competency-based, and mathematical skills. The survey has revealed that the lack of critical thinking skills in the Czech Republic and Germany and active self-study among students - future economists is especially acute. According to the results of the survey, it has been established that the main reason for the lack of this type of skills is the insufficient number of academic hours allocated during the educational process for their formation, forasmuch as in the conditions of the digitalization of higher education, the time frame of training is limited. Along with this, a lack of development of social and communication skills that develop the professional competence of economists is observed in the Czech Republic, France and Germany.

HIGHLIGHTS

The present academic paper is devoted to studying the degree of development of individual components of future economists' professional competence in the digital environment of higher educational institutions. In the course of the research, the level of effectiveness of digitalization of higher educational institutions was studied.

Keywords: Economists, digital technologies, competence

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Taking into account the mass transition of higher educational institutions to distance learning, which has been observed in recent years worldwide, students and teachers were obliged to adapt to the new conditions of the educational environment in a short time (Zinovieva *et al.* 2021). Such transition provides for systematic digitalization and the latest technologies for studying educational materials, communication, assessment and monitoring of students' knowledge level. Currently, the education system has undergone radical digital transformations, which have significantly accelerated its digital development; however, it has had different consequences for the formation of the professional competence of future economists (Kleiner, 2019; Leshchenko *et al.* 2021). Although the general level of digital skills of students has increased significantly, this type of skill within the program of general educational institutions was limited to the use of standard technologies in the lesson (Zoom, Microsoft Teams, Skype, Viber, and Moodle). At the same time, for effective further professional activity, economists should develop a much higher level of digital competence (for example, master 1C software for analytical work, document management programs, balance sheet analysis, Excel capabilities for creating financial models, and forecasting cash flows). In this context, the issue of developing the professional competence of future economists in the conditions of the adaptive digital environment of higher school is actualized (Bygstad, Øvrelid, Ludvigsen, & Dæhlen, 2022). While before the spread of the pandemic and the beginning of the full-scale military invasion of Russia into Ukraine, adaptive training systems were at the stage of implementation and experimental study of their effectiveness. Then, the situation changed radically during the events mentioned above. After all, taking into account the migration processes connected with them, universities in different countries of the world should ensure the rapid adaptation of students and teachers to the digital environment to achieve effective professional development of future specialists (Bond *et al.* 2018), (Delere *et al.* 2021).

The purpose of the academic paper is to assess the quality of the digital environment of higher educational institutions from the viewpoint of the possibility of achieving a high level of professional

competence for future economists. In order to achieve the purpose outlined, the degree of digitization of higher educational institutions was analyzed, the skills required for economists in the labor markets of different countries were identified, and the specifics of labor markets and challenges related to the employment of economists were clarified.

Literature Review

The competence concept is defined by scientists as a comprehensive, integrated property of an individual to carry out a certain activity, as a property that includes personal abilities, knowledge, skills and individual styles of action for professional self-fulfillment (Jackson, 2019). Competence can also be defined as the ability to solve specific problems and tasks in the daily work of a specialist in various fields of activity, using his skills, knowledge, and experience, adhering to the value system (Chen & Roldan, 2021), (Castro *et al.* 2020).

Professional competence is used as a qualitative sign of the degree according to which a specialist performs specific actions within the framework of his professional activity. From the viewpoint of the researchers of the issue specified, the components of professional competence include as follows: the degree of awareness of one's motives, incentives for practical work (taking into account one's interests, requirements, requests, value orientations, ideas about social roles); the level of assessment of personal qualities, character traits, professional qualities (professional knowledge, abilities, skills, professionally significant properties); the level of regulation of the pace and directions of one's own professional and personal development, taking into account the outlined principles (Matkovic, Tumbas, Pavlicevic, 2018).

Thus, a specialist's competence characterizes his qualification: the acquired knowledge, skills, experience, and work styles necessary for professional activity. In this interpretation, competence implies the ability of a qualified employee to apply the knowledge gained during training in one's professional activities (Kulathinal *et al.* 2020).

Studying the issues related to the topic of our research, scientists consider the classification of

types of specialist's competencies, in particular, "types of knowledge, skills and work styles", which is used by the OECD to describe the requirements for the development of professional qualities, evaluate the competencies of specialists in different countries.

Considering the components of the professional competence of future economists, scientists highlight the following ones:

- ♦ skills: stable personal qualities that affect productivity (Martin & Tapp, 2019);
- ♦ types of knowledge: the information system used in the general spheres of a specialist's activity (Reddy *et al.*, 2017);
- ♦ personal characteristics: developed attributes that contribute to learning or performance, including basic skills;
- ♦ work styles: personal characteristics that can affect how well someone performs a job (McLeod & Graber, 2018).

In the scientific literature, the digital adaptability of the educational process is understood as the use of information and computer technologies to ensure flexibility, focusing on the student's personal interests and individual qualities (innate abilities, character traits).

The digital educational environment of higher educational institutions is understood as an innovative system of pedagogy of educational activities built based on information and communication technologies, new pedagogical methods, teaching techniques, computer-based tools, information, and resource support for adapting the educational process to the potential and needs of students in higher education ((Kraus *et al.* 2022). But the use of information and communication technologies is not fully implemented in the higher education process (Iatsyshyn *et al.* 2019).

The economic analysis of the labor market in scientific publications is mostly focused on assessing the characteristics of specialists' first employment or work experience. Many studies show an interconnection between job performance and professional demographic characteristics (for instance, nationality, gender), academic and educational features (for instance, grades, research portfolio quality, and consultant reputation), as well as features of the educational program (Rajab, 2018).

Along with this, some scientists consider the issue of professional competence, types of competencies and skills of specialists, and types of specialists' professional qualifications that are formed in the educational process in higher educational institutions, paying particular attention to studying the concept of adaptability of the educational process and its components (Ali *et al.* 2020). At the same time, currently, there are no comprehensive studies on the training of professional skills of future economists in the conditions of the adaptive digital environment of higher educational institutions in the scientific field (O'Doherty *et al.* 2018), (Rajab, 2018).

MATERIALS AND METHODS

The practical study of modern approaches to the development of the future economists' professional competence in the digital environment of a higher educational institution was conducted by surveying 1 719 people, namely graduates and teachers studying and carrying out research and teaching activities at the economics faculties of higher educational institutions in Poland, the Czech Republic, Germany, and France. The survey was organized using a questionnaire through the Typeform service.

During the survey, the respondents were asked several questions regarding the main aspects of applying educational strategies for students. Survey participants were asked to express their subjective viewpoint on each question in percentages from 0% to 100%.

The survey was conducted by the research authors taking into account the number, age, and gender composition of teachers and students in the educational institutions based on which the study was conducted.

All respondents gave their consent to the disclosure and publication of the information provided by them.

The permission to conduct the study was agreed upon by the ethics committees operating based on educational institutions, teachers, and students of who participated in the survey.

In the first part of the present research, the digitalization degree of universities was studied, namely the level of ICT implementation. At the same

time, when providing answers, the respondents were asked to consider the available innovative methods and technologies of education in higher educational institutions in Poland, the Czech Republic, Germany, and France. The proportion of graduates working in highly innovative environments and workplaces and the proportion of graduates involved in the implementation of innovations was also assessed.

Based on indicators of innovative provision (technologies, means, and tools of higher educational institutions) of the mentioned countries, the respondents were asked to evaluate the degree of their adaptability, flexibility, and differences in the level of digitalization of higher education as a potential influencing factor on the formation of economists' professional competence.

During the research, the professional skills required in the labor markets of different countries were assessed. In addition, such groups of competencies were analyzed, namely: "1. Basic skills (Content). 2. Basic skills (process). 3. Social skills. 4. Skills for solving complex problems. 5. Technical skills. 6. Skills in using system capabilities. 7. Resource management skills".

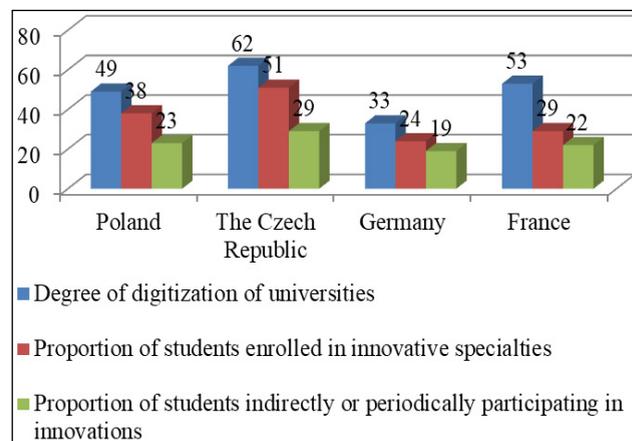
By the way, the specifics of labor markets (challenges for the employment of economists), and qualitative indicators were also assessed, namely: 1. Employment. 2. Hours worked. 3. Salary. 4. Insufficient qualifications. 5. Unemployment. The assessment was carried out to compare the quality of digital means of training specialists in the educational programs "Economics", "Business and Management" in different countries and identify the specifics of the labor market in the context of their professional employment.

RESULTS AND DISCUSSION

Taking into account the significant activity in the application of digital technologies in higher education, universities around the world are forced to adapt the training programs of specialists, increasing the number and improving the quality of training in the use of electronic information tools in the conditions of an adaptive digital environment (O'Doherty *et al.* 2018).

The achieved degree of digitalization and the use of innovative tools and teaching aids are decisive for the effectiveness of further work on the development

and improvement of the economists' professional competence (Matkovic, Tumbas, Pavlicevic, 2018). Traditionally, the level of technology application as innovative learning and teaching methods is quite high in higher education compared to other levels of education. However, as our survey has revealed, there are clear differences in the degree of digitalization in countries, which determines and influences the competence of future specialists (Fig. 1).

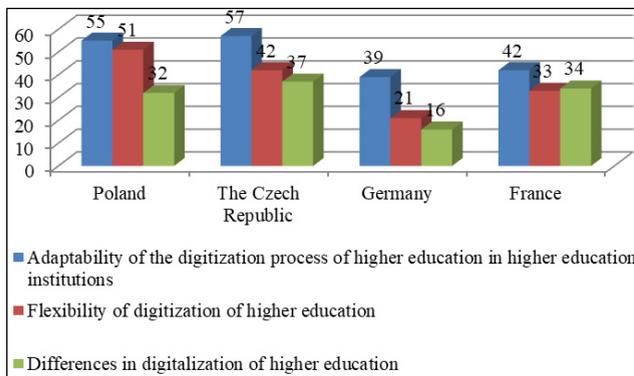


Source: It has been developed by the authors.

Fig. 1: The degree of using the latest digital technologies in the educational process of higher educational institutions, %.

Thus, according to the survey results, the Czech Republic and Poland have the highest level of introduction of electronic technologies in higher education, compared to the OECD average of 49,9% (percentage of graduates working in innovative jobs). At the same time, the Czech Republic also demonstrates a high level of student participation in implementing innovations in higher educational institutions - 51%, compared to the average level of 40% in OECD countries. On the contrary, in Poland, students get significantly fewer opportunities to use technology in education. By the way, a high level of technology penetration into higher education can also be observed in France: 41% of students study in a highly innovative environment, and 29% take an active part in its design (implementation of technologies, use of digital learning tools). The lowest rates of technology use in educational institutions are observed in Germany: 33% of students study innovative specialties, and 19% of students indirectly or periodically participate in innovations.

An essential stage of the research was the study of the impact of adaptability, flexibility, and differences in the digitalization level of higher education as potential influencing factors on the formation of the economists' professional competence.

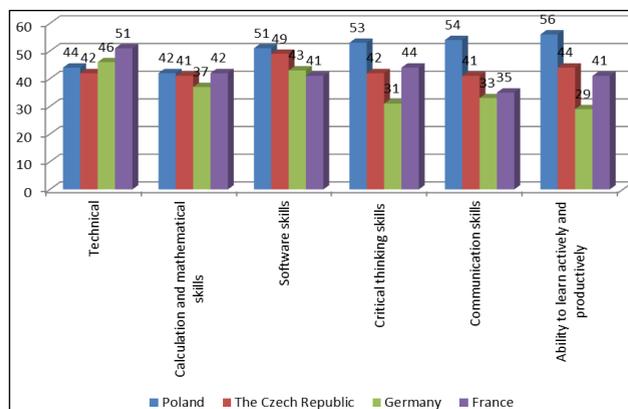


Source: It has been developed by the authors.

Fig. 2: Factors influencing the formation of professional competence of economists, %

In practical work, an economist should possess highly developed technical, calculation, and mathematical skills, as well as skills in working with software (for instance, calculation of cost, logistics costs, preparation of cost estimates, collection, and processing of analytical information, comparison of commercial offers from counterparties, analysis of financial statements, etc.).

The conducted analysis has shown that students develop these skills quite effectively in the digital environment of higher educational institutions, performing and controlling relevant tasks and discussing them in groups. In contrast, the formation of many other skills remains at risk (Fig. 3).



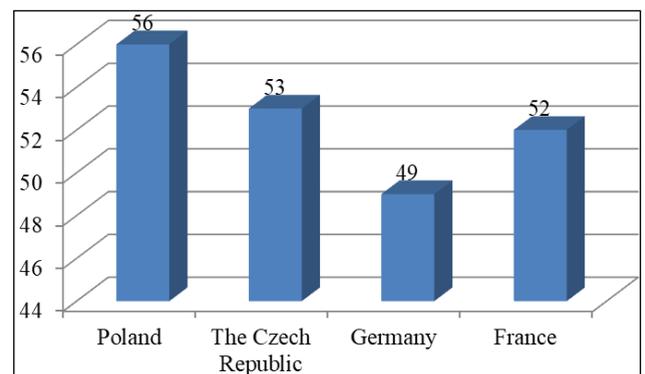
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Fig. 3: The level of mastery of skills necessary for working in economic specialities in different countries, %

For instance, the lack of critical thinking skills (low level of this indicator in the Czech Republic and Germany) or the active learning skill is especially acute among specialists. Critical thinking is developed only in practical activity as the formation of the ability to make conscious decisions in the process of high-level operations based on various strategies. This means that developing this skill requires time, which is limited in the conditions of digitization of higher education.

Thus, in the Czech Republic, France, and Germany, a lack of communication skills was revealed that constitute the professional competence of economists particularly persuasion and negotiation. The ability to agree on the most favorable terms of loans, and insurance, and conclude contracts with intermediaries and partners is an essential practical objective of economists, which is rarely practised in higher educational institutions, especially in times of digitization and mass use of the latest platforms and learning tools by educational establishments.

In general, the survey results have revealed that economists - newcomers possess sufficient knowledge about different markets, which indicates the effectiveness of educational programs. The surveys indicate slight variation in knowledge deficit/surplus (Fig. 4).



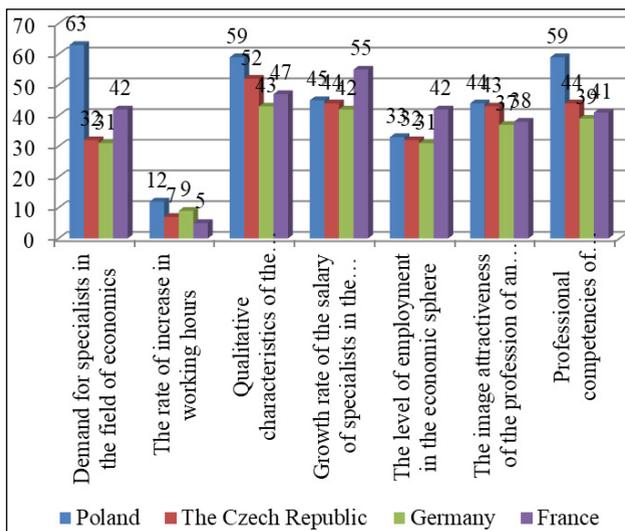
Source: It has been developed by the authors.

Fig. 4: The level of awareness of the functioning of various markets for goods and services, %

The quality and level of development of the labor market in different countries determine the demand for business professionals, the qualitative characteristics of their work results, the number of wages, the employment situation, the attractiveness of the profession, the professional competencies of subject specialists (their abilities, knowledge, skills,

and work style). Therefore, understanding the situation in the labor market is essential in forming future economists' professional competence. The labor market requirements influence the formation of educational programs (curriculums). In addition, the degree of cooperation between the university and the private sector can influence the funding of universities for integrating ICT into the educational environment and, thus, determine the degree of digitalization and adaptability of educational institutions (Nikadambaeva, 2020).

For instance, economists in France find it difficult to get employed using only the knowledge they have acquired during their studies (Fig. 5). Difficulties arise due to rapid employment growth in the profession, rapid replacement of unskilled personnel (that is, lack of knowledge and skills leading to rapid dismissal), and low unemployment rate. At the same time, the increase in working hours is slower than in other professions. In France, economists' salaries are also growing faster than in other professions.



Source: It has been developed by the authors.

Fig. 5: The quality and level of development of the labour market for economic specialties in different countries, %

The labor market for the profession “Economist” in Germany is slightly different from the labor market in France, in particular, due to the slow growth of employment (this may mean a long search and selection of qualified personnel, different approaches to employment by employers, low turnover of low-skilled personnel (this may be related to high skill levels and, therefore, high-

quality training programs). At the same time, the labor markets of Germany and the Czech Republic are similar due to the difficulty of getting employed in this profession, the increase in working hours and wages, and the low level of unemployment. The labor market in Poland differs significantly from those in France and Germany, primarily due to the ease of employment in the position of an economist, that is, the absence of difficulties in searching for a job.

In both Germany and the Czech Republic, the wages of economists are overgrowing, but the number of hours worked is growing slowly.

Poland has a high level of employment and a low level of unemployment among economists; consequently, this job is in demand. Given Polish economists' slow growth of working hours, their wages are growing faster than in other professions. In addition, the profession's attractiveness is also associated with a low turnover of low-skilled workers, which can mean a high level of education. Therefore, the economist profession is the most attractive among young people in Poland. In the Czech Republic, as in Germany, getting a job as an economist is difficult because employment is growing slowly and the unemployment rate is low. Thus, the research has shown that today's graduates of economic specialties of higher educational institutions face macroeconomic risks in the labor markets, which are different in different countries (Morin, 2020). General economic conditions in the country, as one of the employment factors, determine the quality and type of training of the future economist and affect the duration of labor productivity.

The study has made it possible to reveal a relatively low level of unemployment in the economic sphere; however, it is difficult for graduates to find acceptable job vacancies. Adequate mobility in the labor market after graduation significantly increases the economist's productivity and his successful employment (Morin, 2020). Higher labor productivity contributes to greater job satisfaction, rapid formation of practical skills, and career growth of a specialist. A study of the determinants of job satisfaction for economists, based on data on individual (demographic, achievement, and job) and workplace features, shows that most working

people (men and women) are satisfied with their jobs.

Professional skills are the most critical determinant of successful professional activity, especially when working in a collaborative environment in the context of using digital technologies.

During the survey, the respondents pointed to the importance of an adaptive environment in an educational institution, which contributes to the formation of productive qualities and, accordingly, affects the efficiency of further work (D'Ambra *et al.* 2022).

The conducted research has made it possible to establish that indicators related to individual productivity and professional characteristics of the work of economists are essential determinants of the relative level of wages and the possibility of a successful career in this sector.

At the same time, the survey has revealed that currently, there is a significant gap in the remuneration of specialists in different countries, which requires the development of an adaptive environment of higher economic education to possible challenges for professionals from other countries. Although the nature of the pay gap has changed over the past two decades, the size of the gap has remained unchanged (Dong & Wang, 2018).

The survey has also shown an upward trend in the attractiveness of this profession in Poland, taking into account the higher wages and low unemployment. The level of demand for the economist profession in Germany and the Czech Republic is relatively high due to the wage increase.

The scholars (Matkovic, Tumbas, Pavlicevic, 2018) zed the place and nature of the work of candidates of various economic specialities in the labor market among US citizens and specialists with citizenship of other countries in their study. The authors have concluded that foreign graduates are more likely to find employment in the United States. At the same time, the increase in international students in US doctoral programs has revealed a new growing dimension of the labor market – the first international work prospects for new PhDs in business programs (Dong & Wang, 2018). This means that currently, a particular trend of oppressing qualified workers is

intensifying, which limits their employment; as a result of which, specialists of this type are forced to work at home or compensate for the lack of this type of vacancy in the labor market by employment in other areas where there is a demand for various categories of economists.

CONCLUSION

Therefore, the conducted research has made it possible to establish that in an adaptive digital environment, universities are forced to adapt to changes in the labor market, taking into account the digital technologies available for introduction in higher education when training specialists in economic specialties.

The analysis of scientific works on the topic under study has proven that the level of application of the latest technologies as innovative methods of training and professional development in higher economic education is higher than other levels of education. At the same time, there are significant differences in the degree of digitization within countries nowadays, which will determine and influence the competence of future specialists.

The development of digital technologies in higher education causes the gap formation in the qualifications of students - future economists, taking into account the different opportunities and the different education quality in different countries and different educational institutions within the same country. An economist should possess high-quality technical, digital, mathematical, and interpersonal skills in practical activities. The lack of critical thinking skills (in the Czech Republic and Germany) and active lifelong learning skills among working professionals is especially acute. At the same time, the survey has shown that developing such skills requires time, which is limited in the conditions of the digitalization of higher education. The lack of social skills that develop the professional competence of economists is also observed in the Czech Republic, France, and Germany. In general, students - future economists possess a sufficient qualification necessary for work in various market areas, which testifies to the effectiveness of educational programs in economic specialties in the world.

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