Formation of Transversal Competences of Future Economists in the Conditions of Digital Space

Vladyslava Liubarets
National Pedagogical Dragomanov University

Nataliia Bakhmat
Kamianets-Podilskyi National Ivan Ohiienko University

Liudmyla Kurylo
The National University "Kyiv-Mohyla Academy"

Anhelina Spitsyna
National Transport University

Oleksandra Biriukova
National Pedagogical Dragomanov University

The article emphasizes the importance of economic education as a part of general education, in terms of market transformations and democratization of society. It is established that the concept of "transversal competence" is not sufficiently developed by European scientists. It is specified that transversal competence is a universal competence and a new format of an educator's experience. The articles mention that Digital Skills is a composite transversal competence of educators. It is proposed to take into account the increase of digital skills in the formation of transformational competencies of educators in the digital space using various forms and methods of improving digital skills. Such methods as Web Quest and the use of such Internet applications: Simple Note, Flash card, Quick Math, Duo Lingo, Animation en volume pro, Puppet Pals, Pixton, Vialoguas, digital workspace, Pear Deck, Padlet, Kahoot, social networks, messengers and email.

Keywords: educator, general competence, digital space, professional training, web-quest

INTRODUCTION

Global challenges (hunger, climate change, demographic imbalance, food and energy security, environmental issues, the global COVID-19 pandemic, etc.), on the one hand, and global economic development (hyper competition, informatization, internationalization, the Industrial Revolution 4.0 and o9thers) - on the other hand, are reflected in all spheres of human life and adjust the strategies of modernization of modern education.

Under COVID-19, the world is forced to find itself in isolation. Today, social distancing is the most effective way to slow the spreading of the virus. Digital tools make it possible to transform and develop new technologies in the economic sector, the development of them prevents the collapse of society. Thus, since the beginning of the pandemic, 36% of Ukrainians have moved to remote work (YOU Ukraine social initiative, 2021), and 22% combine remote work with the usual one. "Omnichannel commerce" is evolving rapidly as consumers turn to online stores to meet their needs. Physic-digital integration of companies is now more important than ever, and this explains the increase in consumption of digital content. In general, Internet traffic has increased by about 30%. Part of the data traffic has moved from mobile to fixed / Wi-Fi networks. The daily traffic pattern has also changed. In contrast to the period before COVID-19, Internet traffic began to grow in the morning to a level close to the evening, partly as a result of the remote work (Reynolds, 2020).

Coronavirus is constantly changing the way we live and work. Some patterns of behavior developed during the crisis, including large-scale digitization of processes, will remain even after cancelling the restrictions on activities. The use of "digital" technologies in economic activity currently requires modernization of the educational process. They allow to intensify the educational process, increase the speed and quality of perception, understanding and assimilation of knowledge in the digital economy.

It is obvious that the demands of global society, modern forms of economic cooperation and high-tech industry dictate the need to change the nature of education and training of educators themselves, aimed at training professionals with new opportunities and an expanded set of competencies and cognizance. Given the above, higher education is designed to create the conditions for the training of future economists of innovative type, with transversal competencies that can guarantee the individual transversality – a historical form of universality and modernity within a globalized society.

ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

Informatization of society requires a rapid transition to training experts in the field of Ukrainian economics, which requires a new high-quality level of its digitalization. That is, the digital economy puts forward additional requirements for the qualifications of specialists in various industries. The main resource is digital knowledge, and the key resource of development is individuals. Recently human activities consider the implementation of innovations, which, in its turn, requires the improvement of their knowledge, skills, competencies, and professionalism both in their own and in related areas of the economic industry. Automation of production processes requires not only professional competencies, creativity, communication, team cooperation in finding new solutions but also mastering digital competencies to be able to critically evaluate the information offered for reliability in terms of its logical construction (Kuzheliev & Britchenko, 2016).

As soon as the educational context is increasingly enriched with electronic and mobile technologies, e-learning research may offer more areas for educational practice. Integration processes, that is, the efforts of Ukraine to join the EU, social and economic conditions, development of market relations, determine the need to prepare a future specialist of the economic profile of a new type, who can represent the country at the international level and protect its interests within the framework of international cooperation (Tykhonova et al, 2019). Therefore, the training of a modern economist requires higher economic education to find new approaches to vocational training.

Education is the process and result of the human assimilation of a certain system of scientific knowledge, practical skills and related to the one or another level of development of its mental, cognitive and creative activities, as well as moral and aesthetic culture, which together determine the social image and individual originality of this person. Education is one of the widest pedagogical categories, which has a holistic, multifunctional and poly textual structure.

Education performs three important functions: human and creative – ensuring a certain level of knowledge, literacy, emotional and strong-willed state, behavioral orientations, readiness to perform various social roles, activities, etc. Technological – ensuring the "base of life", the formation of skills and abilities to labor, public, economic, professional activities, the development of communication in various

types of activities, etc.; humanistic – educating people in the line with peace, high morality, culture, understanding the priorities of universal human values (life, work, man herself, nature, etc.) (Dutka, 2008).

Economic education is considered to be an education aimed at analyzing and highlighting the connections that exist in the market economy between a person, family and the state, studying key economic concepts and laws, understanding the main influences of the economic environment on the activities of the entrepreneur, forming personal and professional competence (Sribnyak & Shatilo, 2020). Economic education as a part of general education of the population is of urgent importance in the conditions of market transformations and democratization of society, because the country cannot achieve dynamic development without deep economic knowledge and advanced specialists' training (Dutka, 2008).

Prospects for the development of economic education in Ukraine and the objective reality of the modern world indicate the urgency of digitalization of the vocational training process: from digital innovative technologies to the formation of digital competence of future specialists in the economy. The development of the education system, its structure and components must meet scientific, technological and social goals and directions of both social development and informatization. An important component of public informatization is the informatization of education (Dutka, 2008).

The Digital Agenda of Ukraine (Ministry for Development of Economy, Trade and Agriculture of Ukraine, 2020) states: "The rapid and profound consequences of the transition to the "figure" will be possible only when the "digital" transformation becomes the basis of the life of Ukrainian society, business and state institutions, will become a familiar and everyday phenomenon, will become our DNA, our key backend on the way to prosperity, will become the basis of Ukrainian well-being". Ukraine has already taken important steps in providing educational institutions with personal computers, introducing digital technologies into the educational process, forming a new attitude of future economists to their application in the practice of work.

Modern educational institutions need economic educators with a high level of transversal competence, who are able to work in conditions of high competition, ready to implement educational projects and provide quality digital services, effectively carry out educational activities, motivate and coordinate all participants in the educational process. Theoretical and methodological principles of professional training for the economic field are developed in scientific works of domestic and foreign scientists: philosophy of education and ideology of anthropocentrism (V. Andrushchenko (2008), I. Anosov (2016), V. Kurilo (2009), O. Savchenko (2016) and others).

The theoretical and methodological basis of this article are the works of domestic and foreign researchers on the formation of diverse competencies, the impact of digitalization on vocational education. Peculiarities of formation and measurement of competencies are considered in the works of T. Burlaenko (2016), S. Ziva (2018), research of influence of digitalization on education is carried out in the works of N. Bakhmat (2020), S. Volgina (2018).

Current issues of modernization of specialists professional training in higher economic education in Ukraine were investigated by such scientists as N Bakhmat, V. Liubarets, M. Bilynska, N. Ridei, and A. Spitzyna (2020). As it follows from the works of these authors, this topic is relevant and of great interest for further research.

To analyze the scientific achievements in the field of professional activity of educators in the digital space, in particular in the formation of transversal competencies of future economists. According to the purpose, the following objectives of the article are defined:

- to analyze the scientific achievements of professional training of future economists, in particular in the formation of transversal competencies in the digital space;
- to analyze the scientific achievements of future economists' professional training in the digital space, in the formation of transversal competencies of economists, in particular;
- to determine the advantages of using Internet applications and methods of the Web Quest in the formation of transversal competencies in the digital space.

CONTENT OF ECONOMIC HIGHER EDUCATION

Economic education is designed to create conditions for the training of an innovative specialist who has transverse competencies that can provide the individual with transversality – a new historical form of universality within the global society (Bakhmat et al., 2020). The problem of updating the modern content of economic, higher education in Ukraine in particular, and the restructuring of educational programs is relevant through a number of economic, social and humanitarian factors, among which the main are, in our opinion, the global economic development strategy; formation of the "Knowledge Society" – informationalism; transculturalism (Petrenko & Bezuhla, 2018).

Examining the problems of competence, the Organization for Economic Cooperation and Development (OECD) came to the following conclusion. Modern life requires a person to acquire key competencies; the formation of competencies is influenced by many factors; the selection of key competencies should be carried out at a fundamental level and take into account worldviews about society and the individual and their interaction (Abrhám et al., 2018). When selecting key competencies it is necessary to take into account the influence of cultural and other contexts of a society, country; the selection and identification of key competencies is influenced by subjective factors related to the person (age, gender, social status, etc.). The definition and selection of key competencies requires extensive discussion among other professionals and representatives of various social groups (Ovcharuk, 2004).

The European document "European qualification framework for life training" considers the competence (competencies) as the concept of responsibility and autonomy, that is, the ability of a specialist to work offline and solve professional tasks (The European Qualifications Framework…, 2008). In the "Qualification framework of the European higher education space" the concept of "competence" is interpreted as "Dynamic combination of knowledge, understanding, skills and abilities" (The Qualifications Framework…, 2021). Experts from public and non-governmental educational organizations in Switzerland, the USA and Canada DESECO in various fields (health, education, business) define "competence" as the ability to meet individual and social needs, to perform tasks. They believe that competence is based on a combination of values, emotions, attitudes and practical skills, behavioral components, knowledge and skills, all that mobilizes to action. Experts also point to the key importance of key competencies. Among them, the most significant are autonomous activities, the ability to function in socially heterogeneous groups, the interactive use of tools (Definition and Selection of Competencies, 2003).

It should be noted that scientists are not unanimous in the terminology of "21st century competencies", as "key competencies", "universal competencies", "general competencies", "transversal competencies". In this study, we adhere to the term proposed by UNESCO for mass consumption in 2015, namely: "transversal competencies" (Gwang-Jo, 2013). According to V. Petrenko and I. Bezuhla (2018), the transversal competencies provide "learning transfer", i.e. the transfer of acquired knowledge, skills and metacognitive abilities of the individual to solve real life situations. The formation of transversal competencies also contributes to the development of subject competencies and orients educators to lifelong learning.

Conceptual use of the word "transversal" (transverse) refers to the beginning of the XIX century in the tradition of exact and natural sciences. In mathematics, it was used to denote a line that permeates a spatial curve, in geology - to characterize the phenomenon of subsidence of horizontal rocks. Jean-Paul Sartre (1937) introduced it into philosophical discourse in his essay "The Transcendence of the Ego" as a metaphor for "grasping" the idea of the space of the "assembly of consciousness" as opposed to the transcendental Ego. "Collection of Consciousness" is described by Sartre as a game of "transversal" internationalities, which represent an exact and real content and preservation of past consciousness (Schäg, 1989).

Exploring this concept, we turned to search systems, in particular, to Google, SZUKAJ.wp.pl. According to the results of the queries, we obtained the data presented in Figures 1-5 below.

FIGURE 1
GOOGLE SEARCH RESULTS: TRANSVERSAL QUERY

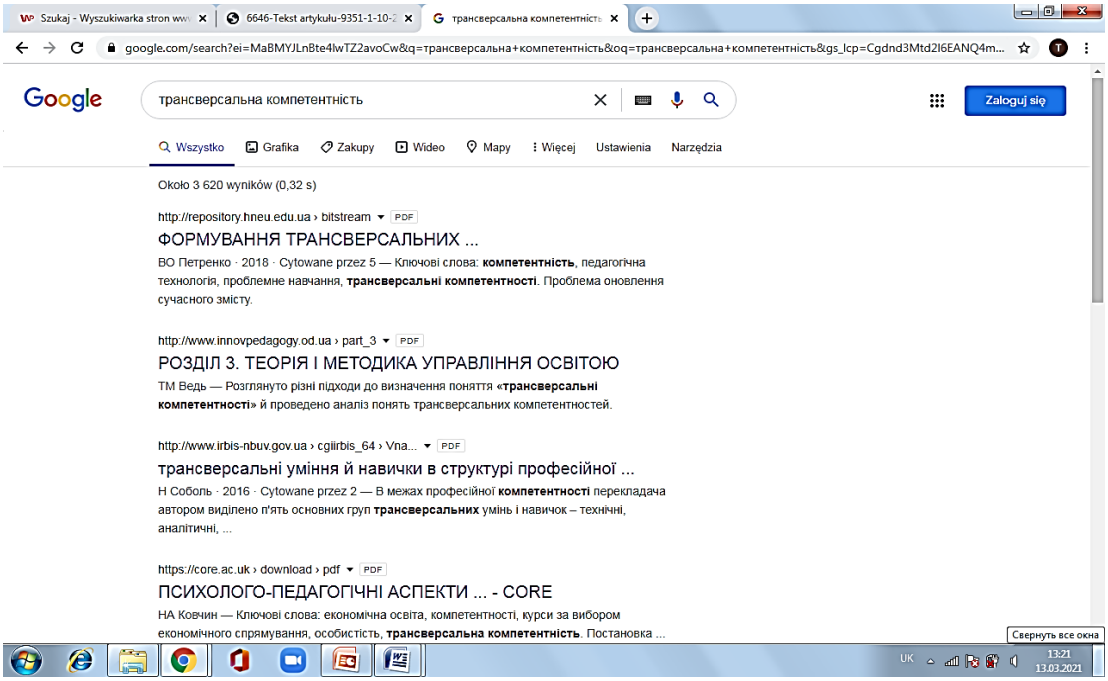
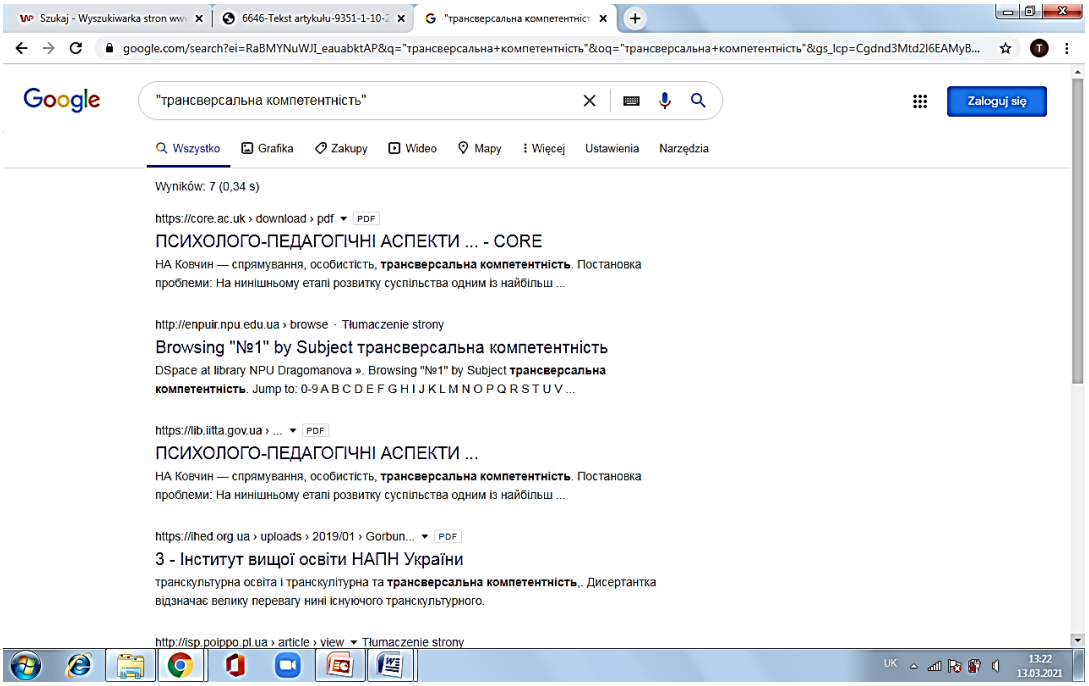


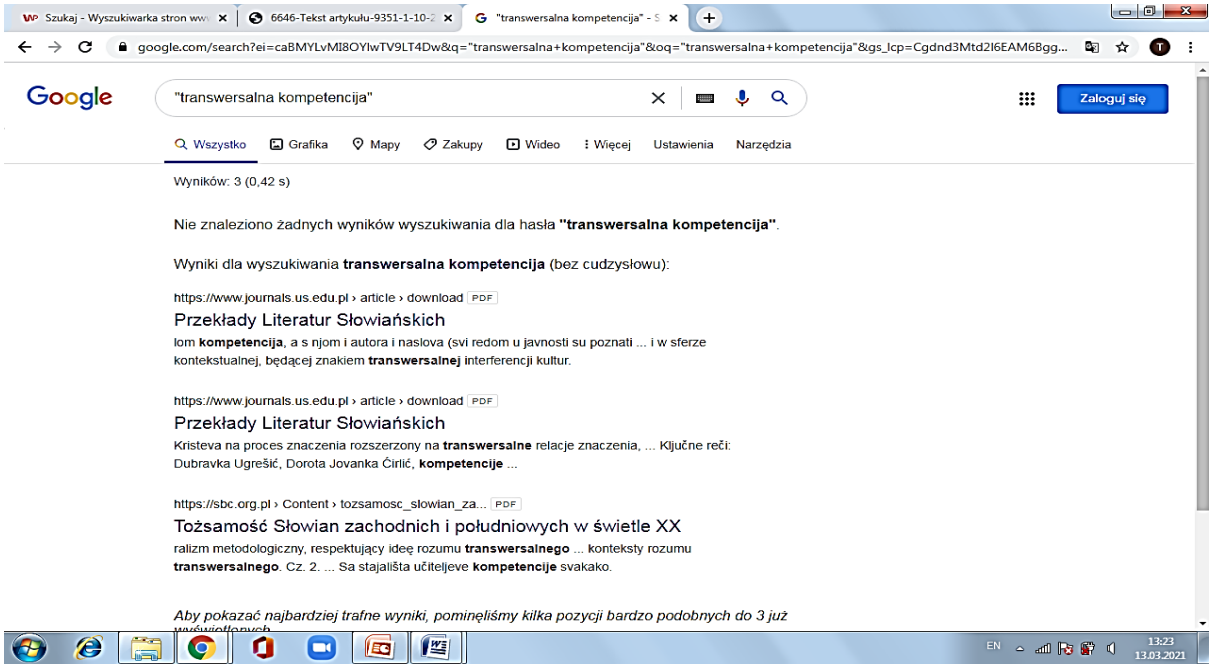
Figure 1 shows that the number of indicators is 3620 as a result of appeals to the Google search system with the query transversal competence (without quotation marks, in Ukrainian).

FIGURE 2
GOOGLE SEARCH RESULTS: TRANSVERSAL COMPETENCE



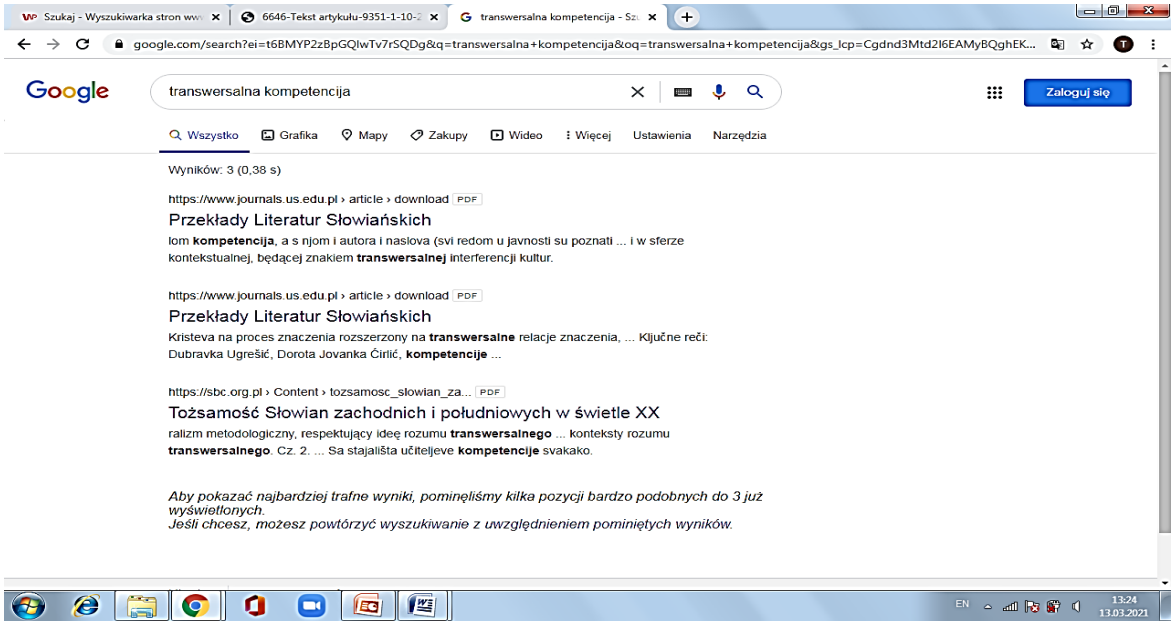
According to Figure 2, the number of results for the query “transversal competence” (in Ukrainian, in quotation marks) in the Google search engine is 7.

FIGURE 3
GOOGLE SEARCH RESULTS: QUERY “TRANSWERSALNA KOMPETENCIJA”



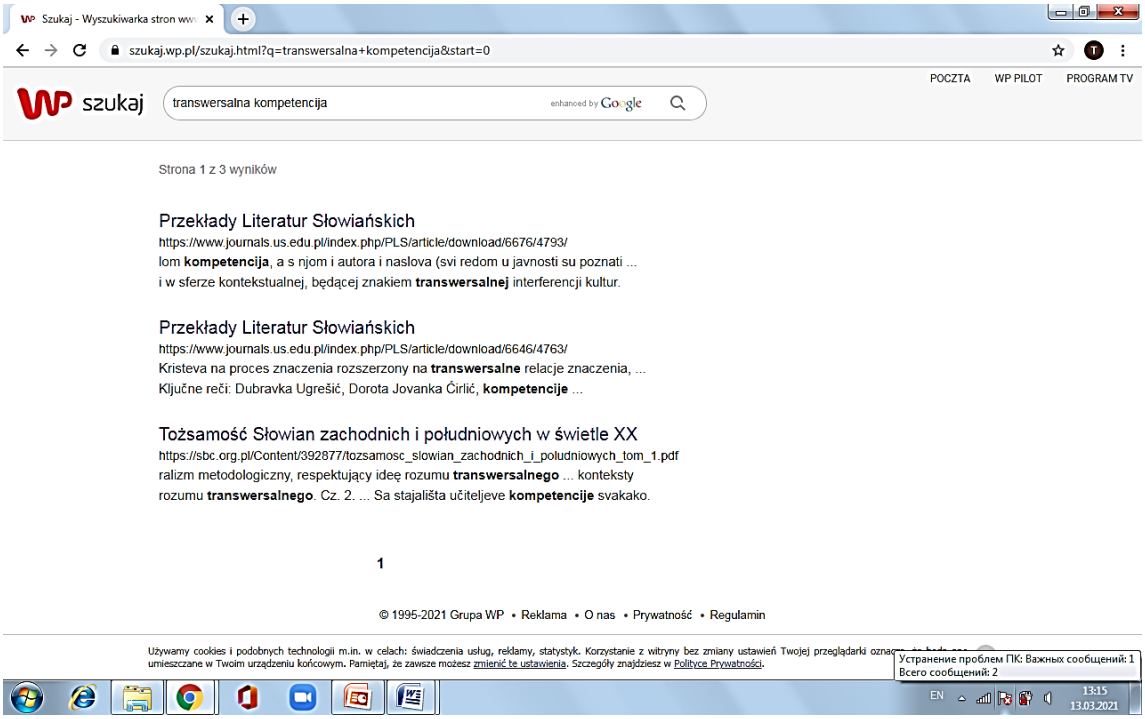
The data in Figure 3 indicate that the number of results in the Google search sysyem for the query “transwersalna kompetencija” (in Polish, in quotation marks) is only 3.

FIGURE 4
GOOGLE SEARCH RESULTS: QUERY TRANSWERSALNA KOMPETENCIJA



In the same Google search system (Figure 4) the results of the query transwersalna kompetencija (in Polish, without quotation marks) gives us a result identical to the previous one, namely 3 exceptions.

FIGURE 5
RESULTS FOR SEARCH SYSTEM SZUKAJ.WP.PL:
QUERY TRANSWERSALNA KOMPETENCIJA



The result shown in Figure 5 is that the query we made in the search engine SZUKAJ.wp.pl in Polish, without quotation marks transwersalna kompetencija also gives a low score of only 3. Thus, we can conclude that the concept of "transversal competence" is not sufficiently developed by scientists in Europe, in particular the Republic of Poland, on the other hand, a slightly larger quantity of scientific research on this concept the domestic scientists have, as it is evidenced by the results of inquiries in Ukrainian language (Fig. 1,2) - 3620 exceptions.

Continuing to study the formation of transversal competencies of future economists, we turned to the work of Symon Watemor, who notes that "there are several classifications of transversal skills", in particular in the educational project Skill a library, the researcher identifies the following:

1. Collaborative Solving Problem is a person's ability to participate effectively in a process that allows two or more employees to try to solve a problem by sharing the knowledge and effort needed to make decisions and achieve results.
2. Ability to learn, lifelong learning, adherence to the concept - LLL (Life Long Learning, Learning to Learn, continuing to learn) - is an intensive lifelong learning process that allows you to constantly adapt to new technologies and use them, practice a variety of strategies and methods teaching.
3. Digital Skills involve the effective and integrated use of a wide range of soft skills that enable the introduction of technical skills and digital tools into everyday professional activities and are seen as part of a broader strategy to build a knowledge economy by promoting employment, growth, competitiveness, social integration, education and lifelong learning. These include technical skills, information processing, and personal qualities (often a wide range of complex cognitive, motor, sociological, and emotional skills).

4. Creative and independent thinking (Critical and innovative thinking) - is the ability to observe, ask relevant questions and find the necessary resources to solve them, challenge and analyze beliefs, assumptions and opinions, recognize and identify problems, evaluate the validity of statements and arguments, understand logic and logical arguments.
5. Resilence and adaptability are individual and organizational qualities that are vital components of success. Sustainability means the ability to remain positive, adaptable and effective in situations of uncertainty, risk and criticism. The resilience of individuals and organizations means the ability to recover quickly from failures and treat difficulties as opportunities for decision-making. Adaptability is the ability to adapt with minimal psychological and financial loss and maximum efficiency.
6. Cultural awareness is the ability to work beyond cultural boundaries and flexibly and effectively adapt to different cultural norms with respect and efficiency. Ability to establish positive interactions with people of different nationalities, religions, social or cultural backgrounds or genders (Tsareva et al., 2020).

COMPETENCIES AND ABILITIES THAT THE ECONOMIST NEEDS TO DEVELOP

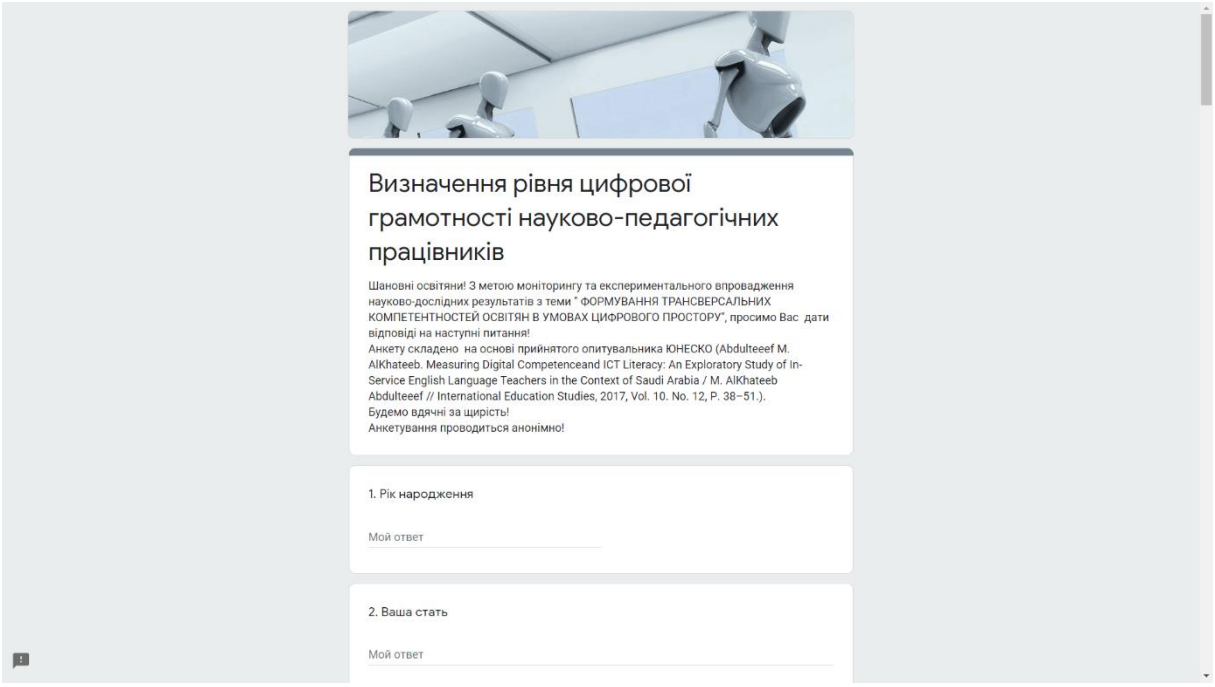
Transversal competencies applied in any professional situation depending on the task. Their trajectory covers all professions emphasizing its necessity. They are the basis for acquiring more profession-based competencies. These competencies can also be treated as transferable. Transversal competencies that go beyond the scope of activity or specialized curriculum are transdisciplinary. Modern economist must develop transverse abilities (UNESCO 2017) (Standard-15038-Final Draft, 2006):

- creativity, communication, critical thinking, algorithm solving, meta-knowledge
- digital literacy, IT skills, technology use skills; - media, informational, financial, scientific, mathematical literacy;
- cross-cultural communication skills, leadership abilities, global, awareness; - initiative, independence, focus, responsibility, adaptability;
- inter-industry knowledge and innovative thinking.

These transverse abilities today are considered as common tools of thinking, and in terms of neuropsychology – as basic invariant actions and operations. Taking into account the research of domestic and foreign scientists, we offer the following vision of transversal competencies: creative and independent thinking; interpersonal and intercultural communication skills; intra-personal skills; global citizen of the World; information literacy in the digital space (Lavrentieva et al., 2020). In our study, we follow the definition of digital space as an artificial environment that is a continuous sequence of computer and network technologies, organizing the relationship between the objects of the physical world through the transmission of programs in the form of signals over networks and telecommunications channels.

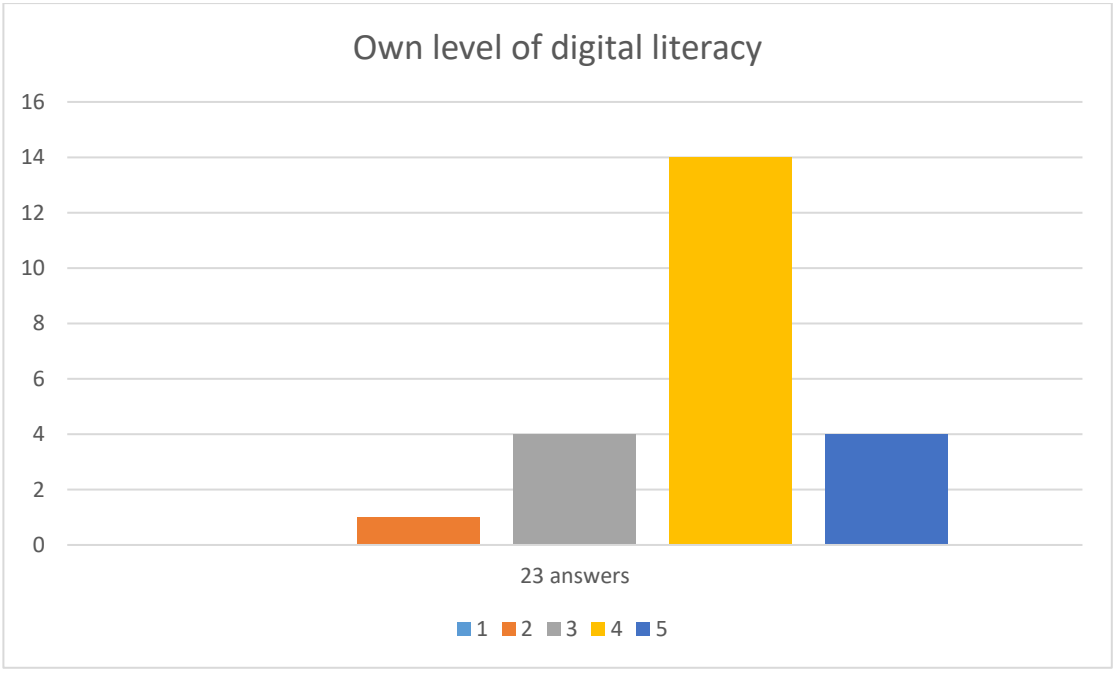
The survey was conducted using Google form (Figure 6), which was attended by 23 economists from Ukraine participated in the questionnaire. It was a significant achievement at the initial stage of the sustained experiment on the research problem. We would like to note that the survey launched in 2021 to determine the level of digital literacy of economists continues throughout the year, and is used for further scientific conclusions on the formation of transverse competencies of future economists at the forming stage of the experiment.

FIGURE 6
GOOGLE FORM TO DETERMINE THE LEVEL OF DIGITAL LITERACY OF FUTURE ECONOMISTS



According to the results of the survey, we determined the own level of digital literacy of reviewers on a scale from 1 to 5, which averaged 60.9% (Figure 7).

FIGURE 7
THE RESULTS OF ONE'S OWN DIGITAL LITERACY LEVEL SELF-ASSESSMENT



We also determined the level of digital literacy of reviewers in five components (ability to process information, ability to communicate, ability to create one's own content, ability to solve technical problems when using digital technologies and ability to use digital technologies for security of one's own content). The results of the survey on the main components are shown below in Table 1.

TABLE 1
THE RESULTS OF THE SURVEY TO DETERMINE THE LEVEL OF THE DIGITAL LITERACY OF RESEARCH AND ECONOMISTS STAFF

Component	Ability to process information			Ability to communicate			Ability to create one's own content			Ability to solve technical problems using digital technologies			Ability to use digital technology to secure one's own content		
Levels	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
%	13,03	39,1	47,8	11,6	77,4	58,7	30,4	44,9	24,7	51,53	38,4	10,07	27,5	27,5	45,0

According to the results of Table 1, it is established that the highest indicator by levels (I (low), II (medium), III (high)) are the following components: "Ability to communicate" – 58, 7% respondents, "Ability to process information" – 47, 5% respondents, "Ability to use digital technologies for the security of their own content" – 45% respondents. The lowest indicator for the following components: "Ability to solve technical problems using digital technologies" – 10.07%, "Ability to create your own content" – 24.7% respondents. The results of our survey allow us to conclude that the level of digital literacy of research and economists staff who participated in the online survey is above the average.

In order to increase the level of digital skills (Digital Skills) in the formation of transversal competencies of educators in the digital space according to the results of the ascertaining stage of the experiment, we propose to use various forms and methods of improving Digital Skills, which can be implemented (trainings, classes, seminars, etc.).

We believe that one of the effective methods of forming transversal competencies of future economistsin the digital space is the Web-quest method. In addition to the web-quest, to form the transversal competencies of future economists in the digital space, we recommend using additional tools to achieve social and educational effects of the digital environment (applications Zaption, Adobe Voice, Explain everything, Notability, Simple Note, Flash card, Quick Math, Duo Lingo, Animation en volume pro, Puppet Pals, Pixton, Vialogues, digital workspace, Pear Deck, Padlet, Kahoot, social networks, messengers and e-mail), due to the use of which there are positive social effects.

Webquest in pedagogy is a problem task with elements of role-playing game, for which the information resources of the Internet are used. Translated from English web [web] – web, network, (world) net; quest [kwest] – searching. This means that the future economists composing tasks selects information on the Internet, where you can find the necessary materials, giving students the appropriate hyperlinks. All this is stored on any web resource, designed and structured as a Web Quest. Applicants in groups or individually perform the proposed tasks of the Web Quest, after which they present their own web pages on this topic, or some other creative work in electronic, printed or oral form.

The term "WebQuest" was first proposed in summer 1995 by Bernie Dodge, a professor of educational technology at the University of San Diego (USA). The author has developed innovative Internet applications for integration into the educational process in the teaching of various subjects at different levels of education. When completing Web-quests, students do not receive ready-made answers or solutions, they solve the task set before them. Working on the Web Quest helps:

- to organize active independent or group search activities;
- promotes the development of creative thinking and problem-solving skills;
- gives the opportunity to implement an individual approach;

- trains mental abilities (explanation, comparison, classification, selection of public and private).

Thus, we can say that the technology of the Web Quest has an activity approach. In fact, the web-quest is a didactic structure in which the teacher forms the search activity of students, sets the parameters of this activity and determines its time limits. Let's consider the use of technology "Web Quest" in a light version. The idea of using this technology in the educational activities of future economists in the digital space came naturally. The flow of information on the Internet is so large that it is not easy to navigate, but the opportunities for the use of Internet resources are great for the future economists. Therefore, for a group of future economists, we created a presentation in PowerPoint – it is a kind of navigator, with the potential to master the technology of the Web Quest, the development of Digital Skills, expanding the field of professional interests and skills of economists.

The web-quest is called "Internet resources of a successful teacher" and is designed to stimulate the participant's own activity, cognitive activity (desire to learn something new), communicative activity (desire to communicate, share their thoughts and impressions with others, especially colleagues) and, of course, the creative activity (create, invent, try). Additional purpose of this resource: to acquaint future economists with the technology of the Web-quest; encourage to learn to create their own author's thematic, educational and informational Web-quests for children and adults. To get started, the listener needs to open a presentation. At the beginning of the presentation there are basic concepts on the topic and instructions: "Attention! Dear colleagues! The following slides offer you online resources: screenshots of sites and links to go online. The tinted window offers tasks that you need to perform. Good luck in self-education and interesting work!"

Each slide of the presentation is devoted to a specific problem (professional situation). It includes one or more screenshots (photos) of the Internet resource (pedagogical community, site, page, section) with an active link. Next to the tinted windows are formulated questions-tasks that guide the listener to certain actions when visiting the specified page. To go to the desired resource, the participant must "click" on the link next to the image, after which the page of the site or video opens. After viewing, close the bookmark and return to the quest.

The virtual information space created with the help of the presentation is quite wide, has links to Internet resources, where much more information is collected than a future economists can learn in one Internet trip. This is done so that the teacher has the opportunity to return to what he was interested in, several times, which forms a professional cognitive interest, transversal skills are formed through a variety of topics. The listener can choose the part of the virtual navigator that interests him, go where he wants, explore the topic as much as he wants, while using the most convenient ways to collect and process information. Web quest involves solving research problems. In order to help the teacher to find the answer to the problematic question that arose in the Web-quest, there are explanations, comments, visual cues, markers. The listener, using them, creates a visual support for reflection, which helps to find the necessary information, patterns, make generalizations, conclusions.

Professional interest is exactly the regulator of activity, which should be guided by the organizer when accompanied by students of the Web Quest. The use of the quest is possible, including in remote mode. If during the work with the Web-quest the listener has a general idea of the additional features of the resource presented on the to introduce future economists to web-quest technology; to learn how to create your own author's web quests. Thus, the educational web-quest "Successful successful future economist Internet Resources" offered to students, in addition to the educational function, is an example of creating the simplest technically educational (informational) resource using the capabilities of the well-mastered PowerPoint program.

Using this Web-quest, future economists do not only get acquainted with the technology, but also improve their own Digital Skills and form their versatility, which is the basis of transversal competencies. On the proposed basis, the user creates his own game (information, educational) navigator for all participants in the educational process on a topical topic, including animation, hyperlinks, video and sound effects. The use of such simple technologies helps to relieve future economists' fear of the unknown, to

help them with interest and desire to engage in the development of modern development of modern tools and successfully apply it in professional activities.

According to the results of our research, we have established that transversal competence is a universal competence and a new format of an educator's experience, which includes the formation of the following skills: creative and independent thinking; interpersonal and intercultural communication skills; intra-personal skills; global citizen of the World; information literacy in the digital space. According to the results of the study, the level of digital literacy of research and teaching staff, which is a component of transversal competencies is above average.

In order to increase the level of digital skills (Digital Skills) in the formation of transversal competencies of educators in the digital space based on the results of the ascertaining stage of the experiment, we propose to use various forms and methods of improving Digital Skills that can be implemented. In our opinion, the Web-quest method can be an effective method in the formation of transversal competencies of educators in the digital space. In addition to the web-quest, it is appropriate to use additional tools to achieve the social and educational effects of the digital environment, such as: Zaption, Adobe Voice, Explain everything, Notability, Simple Note, Flash card, Quick Math, Duo Lingo, Animation en volume pro, Puppet Pals, Pixton, Vialogues, Digital Workspace, Pear Deck, Padlet, Kahoot, Social Networking, Messengers and Email.

CONCLUSIONS

Thus, the essence of the formation of transversal competencies of educators in the digital space is to acquire a new type of universality, which includes the development and improvement of skills such as Collaborative Solving Problem. Ability to learn, continuing education, adherence to the concept of Life Long Learning, Learning to Learn, continuing to learn, digital skills (Digital Skills), creative and innovative thinking (Critical and innovative thinking), resilience (Resilence) and adaptability (Adaptibility), cultural awareness (Cultural awareness).

We came to the conclusion that the use of modern Internet applications and Web-quest methods can significantly increase the level of digital literacy of research and teaching staff, which is a component of transversal competencies and a component of professional training of educators. A promising direction for research is the creation of a holistic methodology for the formation of transversal competencies of educators in the digital space, as part of their professional competence and training of educators to conduct this educational activity.

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