



Digital transformations of the process of professionalization of socionomics specialists on the basis of innovative pedagogical technologies

Nataliia Kravtsova¹, Olena Tryfonova², Liudmyla Povzun³, Diana Gultsova⁴, Nadiia Gramatyk⁵ and Svitlana Bondarenko^{6*}

¹Department of Vocal and Choral Training, Theory and Methods of Music Education, Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Vinnytsia, Ukraine. ²Department of Preschool Education, V.O. Sukhomlynskyi National University of Mykolaiv, Mykolaiv, Ukraine. ³Department of Chamber Ensemble, The Odessa National, A. V. Nezhdanova Academy of Music, Odessa, Ukraine. ⁴Department of Special Piano, The Odessa National, A. V. Nezhdanova Academy of Music, Odessa, Ukraine. ⁵Department of General Pedagogy, Pre-school and Primary Education, Izmail State Humanitarian University, Ukraine. ⁶Department of Journalism, National Aviation University, Liubomyra Huzara Ave, 1, 03058, Kyiv, Ukraine. *Author for correspondence. E-mail: svitlana.bondarenko@npp.nau.edu.ua

ABSTRACT. The purpose of the study is identifying ways and providing conditions for the effective formation of professional competence specialists in the field of socionomics on the basis of innovative pedagogical technologies. The relevance of the study is due to the needs of practice in the constant professional and personal development of specialists socionomic sphere, given the demands of society. The problem of implementation is relevant for the modern development of vocational education innovative pedagogical technologies in providing personalized approach in the organization of the educational process of training socionomic spheres. It has established that education is becoming more and more innovative: the latest services of educational services are being created, there is an active digital transformation of the educational environment. The model of professional training of students for practical activities in the socionomic sphere is seen as a holistic system that includes a strategic goal - the formation of innovative thinking in the future specialist socionomic sphere who can effectively to carry out professional activity according to the requirements of international standards. The following components of professional competencies of socionomic specialists have distinguished: motivational, value-semantic, cognitive-professional, effective-professional, autopsychological, regulatory. It is proposed to focus on the development of skills of socio-professional interaction of the future specialist in the field of socionomics.

Keywords: innovative pedagogical technologies; professionalization; specialists of the socionomic sphere; competencies; educational environment; digitalization.

Transformações digitais do processo de profissionalização de especialistas em socionomia com base em tecnologias pedagógicas inovadoras

RESUMO. O objetivo do estudo é identificar caminhos e condições para a formação efetiva de especialistas em competências profissionais no campo da socionomia a partir de tecnologias pedagógicas inovadoras. A relevância do estudo se deve às necessidades da prática no constante desenvolvimento profissional e pessoal dos especialistas na esfera sicionômica, atendendo às demandas da sociedade. O problema da implementação é relevante para o desenvolvimento moderno da educação profissional de tecnologias pedagógicas inovadoras ao proporcionar uma abordagem personalizada na organização do processo educativo de formação das esferas sicionômicas. Estabeleceu que a educação está se tornando cada vez mais inovadora: os mais recentes serviços de serviços educacionais estão sendo criados, há uma transformação digital ativa do ambiente educacional. O modelo de formação profissional dos alunos para atividades práticas na esfera sicionômica é visto como um sistema holístico que inclui um objetivo estratégico - a formação de um pensamento inovador na futura esfera sicionômica especializada que possa efetivamente exercer a atividade profissional de acordo com as exigências da padrões internacionais. Os seguintes componentes de competências profissionais de especialistas sicionômicos têm distinguido: motivacional, valor-semântico, cognitivo-profissional, efetivo-profissional, autopsicológico, regulador. Propõe-se centrar-se no desenvolvimento de competências de interação socioprofissional do futuro especialista na área da socionomia.

Palavras-chave: tecnologias pedagógicas inovadoras; profissionalização; especialistas da esfera sicionômica; competências; ambiente educacional; digitalização.

Transformaciones digitales del proceso de profesionalización de especialistas en socionomía sobre la base de tecnologías pedagógicas innovadoras

RESUMEN. El propósito del estudio es identificar formas y proporcionar condiciones para la formación efectiva de especialistas en competencia profesional en el campo de la socionomía sobre la base de tecnologías pedagógicas innovadoras. La relevancia del estudio se debe a las necesidades de la práctica en el constante desarrollo profesional y personal de los especialistas del ámbito socionómico, dadas las exigencias de la sociedad. El problema de la implementación es relevante para el desarrollo moderno de tecnologías pedagógicas innovadoras de educación vocacional al proporcionar un enfoque personalizado en la organización del proceso educativo de las esferas socionómicas de formación. Ha establecido que la educación es cada vez más innovadora: se están creando los últimos servicios de servicios educativos, hay una transformación digital activa del entorno educativo. El modelo de formación profesional de estudiantes para actividades prácticas en el ámbito socionómico se ve como un sistema holístico que incluye un objetivo estratégico: la formación de un pensamiento innovador en el futuro especialista en el ámbito socionómico que pueda efectivamente llevar a cabo una actividad profesional de acuerdo con los requisitos de estándares internacionales. Se han distinguido los siguientes componentes de las competencias profesionales de los especialistas socionómicos: motivacional, valor-semántico, cognitivo-profesional, efectivo-profesional, autopsicológico, regulatorio. Se propone enfocarse en el desarrollo de habilidades de interacción socioprofesional del futuro especialista en el campo de la socionomía.

Palabras clave: tecnologías pedagógicas innovadoras; profesionalización; especialistas del ámbito socionómico; competencias; ambiente educativo; digitalización.

Received on February 14, 2022.
Accepted on September 13, 2022.

Introduction

Professionalization of socionomics specialists has considered as a continuous process due to the needs of practice in the constant professional and personal development of employees, given the demands of society (Aldosemani, 2019). Improving the quality of continuous professional training socionomic sphere is essential in the implementation of reforms in various areas of public policy.

The socionomic sphere has interpreted as an interconnected complex of social interactions, which has realized through the organization, management, research and correction of social relations at all levels of society. The socionomic sphere includes a system of branches of social services focused on the implementation of various areas of social policy: support and protection of the population, education, health care, municipal government, employment regulation, migration processes. Socionomic professions have related to the study and explanation of social relations, social development of society, influence on social processes at different levels of social interaction: psychologist, teacher, social educator, social worker, journalist, political scientist, sociologist, legal professions and more. In terms of diversification of the education system and individualization of cognitive needs of students, significantly change the requirements for content, technological support and organizational basis of the educational process in the implementation professionalization specialists socionomic sphere (Bila et al., 2019; Babenko, 2020).

The problem of implementation is relevant for the modern development of vocational education innovative pedagogical technologies in providing personalized approach in the organization of the educational process of training socionomic spheres (Borthwick & Hansen, 2017). The issue of systematization in the organization of the process is actualized professionalization of socionomics specialists. This is the process that should take place holistic, so pedagogical technologies need control, planning, design, step by step diagnostics with variation with the help of innovative tools and teaching methods (Brevik, Gudmundsdottir, Lund, & Strømme, 2019). Efficiency educational technology is determined by the criteria of effectiveness, the level of achievement of a certain standard education. Therefore, promising modern educational technologies in training specialists in the field of socionomics apply to the whole system professionally-technical education (Chen, 2019). Thus, the need of today is formation a model of professionalization of specialists in the socionomic sphere as a whole system, which includes a strategic goal - the formation of innovative thinking in a specialist socionomic sphere who can effectively to carry out professional activity according to the requirements of international standards.

The purpose of the study is identifying ways and providing conditions for the effective formation of professional competence specialists in the field of socionomics on the basis of innovative pedagogical technologies.

The object of research is the content, forms, methods and techniques of education at each stage of continuing professional education of specialists in the field of socionomics, including through electronic services and innovative pedagogical technologies.

The subject of the research is modern approaches, services and innovative pedagogical technologies, mechanisms of their introduction into the educational process to ensure and improve the quality of continuous professional training of socionomics specialists.

The group of specialists in socionomic professions in the social sphere in this study will include representatives of socionomic specialties: 'social work', 'psychology', 'special education'. The main idea is the identification of innovative pedagogical technologies as a means of professionalization of socionomic specialists, given that the main goal of social development is to create a 'society for all'.

This study highlights the following issues:

- to identify the features and main aspects of the current state and system prerequisites for effective formation of professional competence of specialists socionomic spheres in the conditions of digital transformations of educational process;
- to identify areas for strengthening the impact of innovative pedagogical technologies on the effectiveness of the educational process and methods and pedagogical technologies for solving problems of professionalization of socionomic specialists.

Literary review

Innovations in education affect the general level of professional activity of the teacher, expanding the innovative field of the educational environment in the educational institution, the region. The categories that characterize innovations in the education system as integral qualities are: innovation process, innovation activity, innovation potential, innovation environment, etc (Corcoran & Ross, 2014; Organisation for Economic Cooperation and Development [OECD], 2016).

The trend of recent years has become the internetization of society and the penetration of digital technologies in learning. The introduction of new technologies contributes to the innovation of the educational process. The digital technologies influence the formation of value systems, change lifestyles, expand communication opportunities, ways of thinking, form new channels of influence on other people, social skills and social behavior (Myamesheva, 2015).

The criteria of manufactur ability determine the structure of educational technologies, including the conceptual framework, content and procedural components of vocational training.

The innovation pedagogical technologies in ensuring the professionalization of specialists in the socionomic sphere has formed on the basis of the following categories: an information, the knowledge, the professional competence, the smart education, the digital education technologies, etc (Kummitha, 2020; Krishnan, 2020).

The modern society requires specialists socionomic spheres have formed professional competencies - systematic thinking and skills, as well as the ability to interact effectively with various actors in the social process - clients, their close relatives, colleagues, specialists in related professions, etc (Muñoz & Cubo, 2019).

The concept of professionalization is based on the idea that education in the socionomic sphere should progress to the development of human capital and economic benefits in the form of sustainable growth and a competitive economy (Bondarenko et al., 2019a; Dommett, Gardner, & Van Tilburg, 2019). The principle is the formation of social and individual well-being, future prosperity and quality of life, based on lifelong learning (Corcoran & Ross, 2014; Kuznetsov, Smirnov, Gorbacheva, & Babenko, 2020).

The transition to online learning during the pandemic has led to an accelerated course on distance learning and learning using digital tools. This forms the latest experience of the user of educational services, has a significant impact on the quality of education, methods and problems of organizing the learning process faced by students, teachers, professors, administrators and staff of higher education institutions. On the agenda - the institutionalization of online education, the digitization of educational content, the identification of vectors of activity and development of the pupil (students) and the organization of appropriate educational cycles. The education is no longer limited to the physical environment or structured learning. Behavioral patterns are changing toward home learning, self-learning, and mutual learning, creating a foundation for consumer EdTech. Now a students can and want to be masters of their learning paths, where continuing career-oriented education has perceived as an opportunity for a better life and self-realization (McKenna & Kopittke, 2018; Bondarenko et al., 2019b).

These trends make you think about key issues:

- what support and services can be provided by a higher education institution for the implementation of distance learning tools and technologies;
- what digital tools need to be provided to pupils (students) in order for them to have the opportunity for self-education;
- what tools need to be provided to professors and teachers, if they are no longer teachers (lecturers) but coaches and mentors;
- what new learning trajectories, alternative powers and new learning conditions can be offered to support lifelong learning.

Activation of the introduction of Internet technologies, digitalization and robotization of some processes (using neural networks, etc.) deepen the problem of communicative competence, professional ability to establish relationships with participants in various social groups, to be compassionate, which is especially important in socio-economic sphere. Formation of such competitive universal competencies of the future specialist of the socio-economic sphere is the task of higher education institutions. Achieving results in this direction is possible with the active purposeful use of modern educational approaches and technologies in the educational process (Khan & Markauskaite, 2017; Gumennykova et al., 2020).

In recent decades, new methods and technologies have been directed to the pedagogical activity of higher education institutions for the formation of an active and proactive future specialist in the socio-economic sphere. It is believed that the formation of such a specialist can be achieved by changing the concept of educational activities from teacher to student. In the middle of the last century there were such didactic directions as self-directed learning or self-regulated learning as a direction that should form a conscientious and responsible position and attitude of the student to the development of skills necessary for future professional activity (García-Sanz & Morillas, 2011; Evans & Luke 2020). The modern labor market has a demand not only for a diploma, but also for a set of necessary competencies of the employee in certain areas of training and performance. This is closely related to the responsibility of the employee in choosing the educational trajectory, his unique personal educational path in the system of continuing professional education in socio-economic sphere (Day, Kington, Stobart, & Sammons, 2006; Cheung, Wang, & Kwok, 2021).

Thus, the construction of the unique educational path corresponds to self-directed and self-regulated lifelong learning. The higher education institutions must meet the demand of the labor market for a competitive educational product - a professional. Therefore, the design of a universal training module to meet such needs of society - the main strategic goal of the higher education. The features key of self-study are changing, in accordance with the changing educational environment. The student takes responsibility for planning decisions related to education, with the technology of transferring knowledge and skills from one situation to another. The role of the teacher in the self-directed model of learning is to model the whole system of classes and ensure communication among students, provide and coordinate work with educational material, evaluation of results and promotion of critical thinking (Graziano, Herring, Carpenter, Smaldino, & Finsness, 2017). The system of self-organized learning models and regulates the creation and promotion of team and network competency processes required for networking in multidisciplinary teams.

Methodology

The methodological basis of the study was fundamental work in the field of philosophical understanding of social interaction, which allowed to substantiate the concept of socio-professional interaction of future specialists in the field of socio-economics. The empirical methods of scientific knowledge were used to develop and substantiate the structural-functional model of formation of professional competence of the future specialist of the socio-economic sphere:

- the diagnostic - questionnaires, interviews (study of students, teachers, scientists on the use of information and communication technologies in the educational process), interviews to clarify the axiological and motivational attitude to the use of modern information and communication technologies in the educational process and the formed competence, creative and technological skills;
- the observational - pedagogical observation (direct, diagnostic, review of results of activity) for definition of efficiency of use of technical and technological maintenance, fixing of use of information and communication technologies during forming experiment);

- the netnography to identify and describe the availability of services and resources on the Internet that can become a content and operational component in the educational process of students of socio-economic specialties;
- the study, development and presentation of experience in the use of information and communication technologies in virtual cultures, online communities, various educational institutions and social institutions;
- the pedagogical experiment to test the effectiveness of the author's model of the didactic system of formation of professional competence of students of socio-economic specialties in the higher education institutions;
- the statistical - ranking, comparison, statistical processing of the results of experimental work for objective analysis of empirical data, as well as to confirm the reliability and reliability of the results of the formative experiment.

The system approach is the basis for the formation of a model of professional training of students for practical activities in the socio-economic sphere, which has based on the competence approach. The professional competence is the basis for determining the purpose and outcome of student learning for future professional activities in the field of socio-economics.

The basis of the organization of students' educational activities to master the content of professional training and skills of applying the competence of socio-professional interaction in solving professional problems - is the activity approach, with the active use of innovative pedagogical technologies in the educational process.

The innovation of the educational environment: the digital transformations of the educational process in the system of the higher education

The classical education in the higher education has considered to be a complex and inflexible structure that must be fundamental. The educational process is regulated and it is very difficult to include something new in it, for example, a useful service. In 2020, the pandemic provoked an active transition to online learning. This had a significant impact and made qualitative changes in the system of the higher education in the both organizational and methodological aspects. The online format of higher education has characterized by a completely remote format of organization of the educational process, which allows you to get an education from anywhere in the world. The students from the regions and other countries can study at the country's leading universities without spending money on living in a foreign city. In addition, the distance learning promotes the development of students' skills of remote communication, self-organization and mastery of the necessary technologies, which will further become a competitive advantage in employment, with the opportunity to work in distributed teams or freelance (Sagan, Yakovleva, Anisimova, Balokha, & Yeremenko, 2020; Hubanova et al., 2021). It can be argued that this form of education contributes to the formation of a new professional competence – the project, which in the future will be crucial in the implementation of the concept of lifelong learning. The higher education institutions and online platforms are launching a new learning format – the distance undergraduate and the graduate programs. The distance program is a full-time form of study, so the student receives a full diploma of higher education. Students also have access to foreign internship programs and academic competitions.

The educational online platforms provide educational services, bringing real cases from the industry to educational programs (Zou et al., 2021; Klochan et al., 2021).

There is a new form of symbiosis of the higher education system with online educational platforms, which forms a practice-oriented approach aimed at forming a better employee. The partnership of the higher education institutions and educational companies allows us to combine two strengths: the development of thinking and practice-oriented skills.

The introduction of new technologies in various fields has opened up the need for new specialists. There is a whole class of Internet professions: programmers, data analysts, Internet marketers, game designers and others. From traditional industries grow new ones, at the intersection with the digital technologies: in financial management - FinTech, in education - EdTech. They require distance learning and the involvement of practitioners in the field.

This has provoked the rapid growth of the EdTech sector - technology education projects (Global EdTech Market, 2020). The assessment of the global EdTech market is presented in Figure 1.

Thus, the educational environment to provide adequate responses to today's challenges is becoming increasingly innovative. The newest services of the educational services have created, there is an active digital transformation of the educational environment (Oliveira, López, & Spear-Swerling, 2019; Scherera, Siddiqb, & Tondeur, 2019). The significant funds have invested in the development of such educational services (Figure 2).

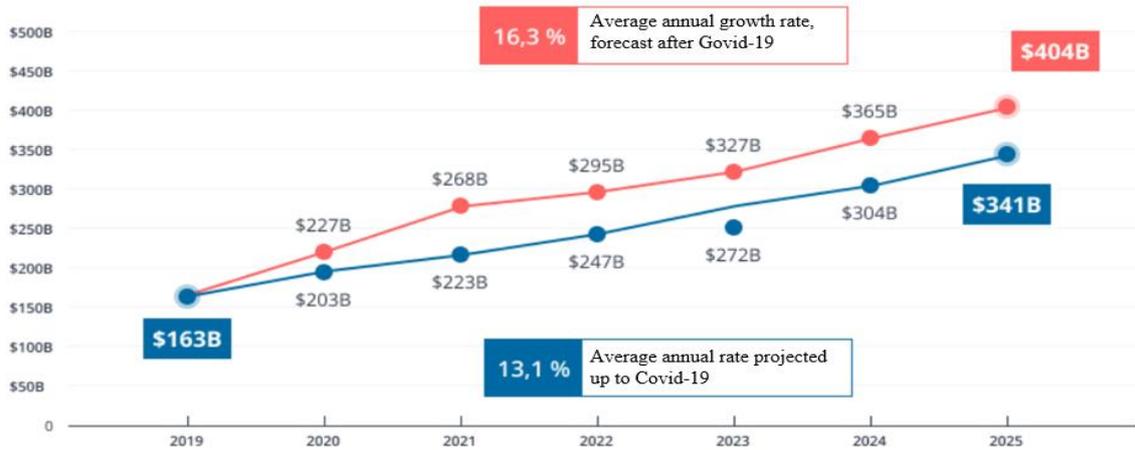


Figure 1. Dynamics of the global EdTech market (Global EdTech Market, 2020).

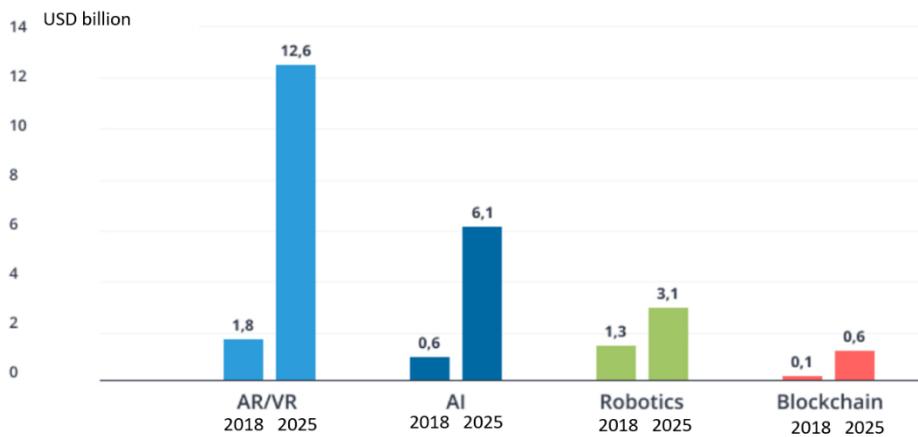


Figure 2. Expenditures on innovative technologies in the education, 2018, forecast 2025 (Global EdTech Market, 2020).

The expected growth rate of spending on innovative technologies in the education is 16.3% (Global EdTech Market, 2020). At the same time, \$ 590 million was received by companies that mainly work in the higher education sector.

It is noteworthy that in the previous 5 years, the United States has shown a high growth rate in this area, now the growth rate of investment in education is led by Asia and, in particular, China and India. The Figure 3 shows the size of the entire online education market.

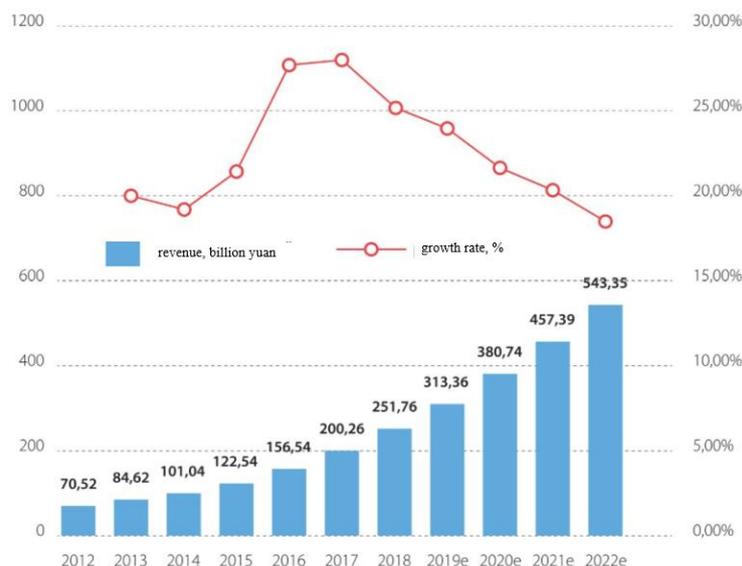


Figure 3. The dynamics of growth of the Chinese market of online education (Global EdTech Market, 2020).

According to UBS Research, the share of online services in the education market in China has expected to increase from 6% in 2018 to 35% in 2025. The world is experiencing a steady increase in demand for distance learning. Approximately 30% of university students (6 million people) take at least one distance course. At the same time, the mobility in the learning process becomes the main value. Among the key technologies that contribute to the development of Edtech - virtual and augmented reality, artificial intelligence, blockchain.

The virtual and augmented reality help to attract and retain students' attention, changing their role from a passive observer to an active participant who interacts with the learning environment. The learning process becomes more interesting and productive. The technology is used to attract students' interest in different areas. For example, instead of studying textbook material, you can use the Google Expeditions mobile app to get to your destination.

Additional features provide the ability to use virtual libraries, such as a library of VR-tours. AVR users with EON-XR applications enter a virtual chemical laboratory, where they conduct experiments without fear of consequences. And medical students studying anatomy can better understand the structure of the body and the relationship of body systems in three dimensions using the educational platform 3D4Medical.

Artificial intelligence has used to automatically evaluate work and give feedback. So teachers spend less time on routine tasks, and students get instant results and comments. Artificial intelligence also analyzes data and provides insights. With the help of AI, teachers make individual lesson plans, predict learning outcomes and even help students find the specialty that best suits their interests and skills. With the help of artificial intelligence, you can develop individual training programs depending on the goals, level of knowledge and the best format of training, which ensures the implementation of the principle of personalization of the educational process, according to the individual vector of development.

Expenditures on the educational technology, driven primarily by the development of artificial intelligence (AI), are expected to reach \$ 341 billion by 2025.

The blockchain has also used in the education. The peculiarity of the blockchain is the decentralization of the database. The information is stored distributed: there is no master server on which all data has stored. It becomes impossible to falsify information without authorization. The university can store graduate diplomas on a blockchain platform to avoid sending fake degrees to potential employers. Cloud storage via blockchain also saves educational institutions money and insures against the loss of information stored on hard drives. So personalized immersive learning, artificial intelligence, automated schools, digital curriculum, and improved data privacy and security are the real results of the technological revolution in the education. Therefore, these technologies have a future. Proof of this are the most successful European EdTech startups for vocational education, which are listed in the Table 1.

Table 1. The most successful EdTech startups for vocational education in 2021.

EdTech startup	Characteristic
CoachHub	a corporate online coaching service that allows company employees to pump on leadership, time management and stress management skills. The platform was launched in 2018 and has already received \$ 54 million in investment.
Scoodle	tutor search service, which was launched in 2017. In addition to training, the platform also helps teachers from around the world to develop their personal brand. In January 2020, the British startup raised \$ 684,000.
Tomorrow's Education	an online learning platform with a focus on solving real-world communication and business cases, as well as other challenges that students may face in the 21st century. It was founded in 2020, and in January 2021 attracted € 1.1 million.
Qoorio	it is a "marketplace of knowledge and experience", in which you can find experts in the necessary user issues - economists, engineers, lawyers, for example, and communicate with them. In 2019, the Lithuanian startup attracted € 2 million.
Uptime App	launched in 2018, the platform offers users a 5-minute concentrate of various educational content: books, courses, documentaries. The British startup has raised \$ 17 million during its existence.
GoStudent	an Austrian startup, which in 2016 created a service to find tutors from around the world. The platform offers both individual and group classes, as well as the ability to subscribe. During this time, the startup was able to raise \$ 18.6 million.

The large-scale introduction of distance learning in 2020 has provoked the emergence of partnerships of the higher education institutions with companies of professionally oriented services. After all, the fact of distance learning expands the opportunities and options for professional development for students and existing professionals, contributes to the implementation of the concept of lifelong learning. In the market

of educational services, there is competition between the higher education institutions and online platforms. To remain in demand, universities needed to develop new offerings and products. They have become more open to working with EdTech companies. There are unique universities that have rethought the concept of education in a new direction - a digital university, with personalized educational trajectories, distance learning and more. In such new universities, learning has combined with online tools. There are already successful cases of cooperation between universities and online platforms in the world.

In 2019, the London School of Economics and Political Science, together with 2U, one of the largest educational technology platforms, launched its first fully distance bachelor's program in Data Science and Business Analytics. The university wanted to move from textbook teaching to digital format and provide training focused on the needs of students and the market. The experience was successful, and currently there are nine such programs, and the number of distance students in all courses exceeds 50 thousand. To meet the needs of students and the market, universities turn to EdTech companies.

The partnership with them can be organized in several ways (Figure 4).

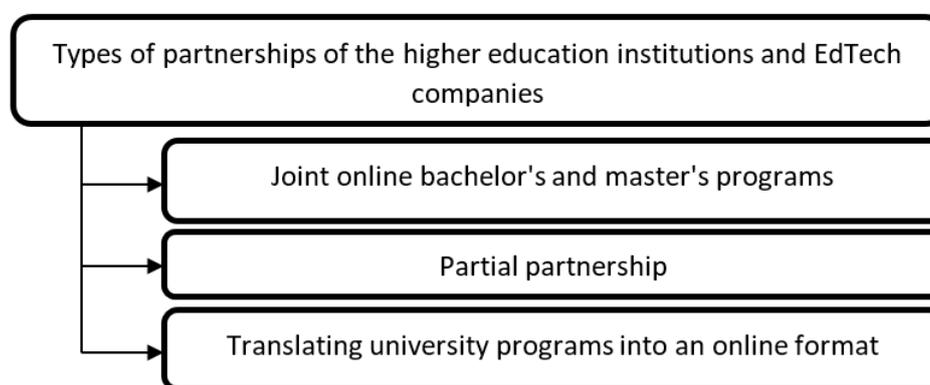


Figure 4. Types of interaction of the higher education institutions with EdTech companies.

To ensure the educational process in the digitalization of the educational environment, the higher education institutions and EdTech-companies form different types of interaction.

The joint online bachelor's and master's programs. In this case, for the organization of the educational process, the institution of the higher education and the EdTech company share disciplines. Typically, the higher education institution takes on fundamental subjects such as 'Strategic Management' and 'Systems Analysis and Design', and the company teaches relevant career tools such as 'Data and Metrics Digital Product Development' and 'UX / UI – design' etc. At the same time, the EdTech-company helps the institution of the higher education to translate courses into an online format, teaches teachers teaching methods and group work in a digital environment, as well as builds student support from the beginning of study to successful graduation. The programs can be held online, but officially the form of training is considered full-time. The same number of hours with daily training has allocated for each discipline as in full-time master's programs, and the same regular contact with teachers is provided. **Partial partnership.** In this case institutions of the higher education order modules from online platforms in addition to their programs, agree on the conditions of study and credit, and provide students with access to educational material.

Translating university programs into an online format. This type of relationship has used in the case where teachers and institution of the higher education intend to translate a particular curriculum into an online course. The EdTech-company in this case can fully take over the production and release of the program: it provides its own platform, makes a recording in the studio, helps to restructure the items to an online format, build a marketing strategy and, if necessary, attract students.

The teacher and the institution of the higher education get access to the metrics of the program: to see which of the courses are in demand, what are the results of students, lessons that open, the number of completed. Studying in distance programs of master's and bachelor's degree gives the student a number of advantages, in comparison with offline programs of high school and professional courses of online platforms:

1. Flexibility of the educational environment. The unlike standard education, there are no clearly defined lectures and links to the venue: students choose when and where to watch the lecture part of the course. The practical classes have held in the evening or on weekends, so students can combine study with work.

2. Training from experts. The combined programs give students a unique opportunity to learn from both market practitioners and university professors. So they get access to current company cases and global scientific knowledge.

3. Internship. In most universities, the internship has organized in such a way that the student must independently seek the possibility of its passage. And on the combined programs differently - internships are thought over as carefully, as well as the main program.

For example, the partner companies for master's and bachelor's programs may be such as Ozon, Alfa-Bank, Kaspersky Lab, McKinsey & Company etc. A detailed program of internships is being developed: time, number of places, and the possibility of paid internships is being discussed. After such an internship, students usually have the opportunity to stay and work in the company. The partnership of universities and online platforms opens up prospects for qualitative change in the field of vocational education. They will combine the benefits of university basic education and opportunities for the development of relevant skills from online platforms, as well as the introduction of the digital technologies in the educational environment.

The education is not just 'digitized', it is developing in its own unique way, in which new tools and methods of interaction with the audience. The students receive a flexible modern education, the results of which fully meet the requirements of the market, and have the knowledge necessary to be a successful professional in their field.

The model of professional preparation of students for practical activity in the socio-economic sphere

The specialists of socio-economic specialties are subject to high social, psychological, professional and personal requirements, as the object of work are other people.

There is a demand for specialists in socio-economic specialties in the education system, health care, government agencies, the private sector and more.

The result of professional activity of representatives of socio-economic professions is an effective influence on social relations and social processes at different levels of social interaction: 'man – man', 'man - social group', 'man – society'.

The specialists of these professions have certain hopes for success in solving social problems in society. For the successful activity of representatives of socio-economic professions it is important to develop professional competence (Tsvetkova & Kiryukhin, 2019).

It is considered expedient to form prognostic skills as an important structural component of information and communication competence of students of socio-economic specialties during their studies. The components of the model of professional socio-psychological preparation of students for practical activities in the socio-economic sphere have presented in Figure 5.

The main components of the model determine the professional socio-psychological preparation of students for practical activities in the socio-economic sphere, it has proposed to highlight the following (Figure 5):

- the psychological readiness of students for professional activity in difficult social conditions;
- training of future social work specialists in accordance with the model of professional competence, while professional competence has considered by us as a holistic professional quality of a person (holistic system), which integrates components, each of which has its own psychological meaning;
- designing a developing educational environment (social, subject-spatial, psychological-didactic components), which includes the development of specialized programs aimed at providing opportunities for personal self-development of participants in the educational process;
- the relationship of theoretical disciplines and practical training, with the mandatory inclusion in the courses of practice of complex tasks of psychological orientation.

The professional competencies of socio-economic specialists include the following components:

- motivational: psychological readiness for professional activity;
- value-semantic: orientation, value orientations, meanings;
- cognitive-professional: general culture, literacy, professional education;
- effective and professional: working with people at different social levels, working with information, achieving results, etc .;
- autopsychological: personal and professional reflection;
- regulatory: emotional and volitional self-regulation.

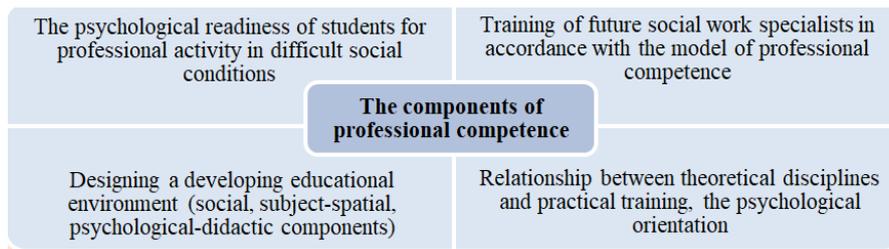


Figure 5. The model of professional training of students for practical activities in the socioeconomic sphere (author's).

Experiment

To identify the components of professional competence of socioeconomic specialists, based on the analysis of professional activity, we compiled a list consisting of 36 competencies.

The expert assessment was conducted by 18 experts in social work:

- 8 doctors of sciences, professors of the higher education institutions;
- 3 leading specialists of the Ministry of Social Policy of Ukraine;
- 7 managers institutions of social protection of the population (provision of social services) of the Nikolaev, Odessa, Vinnytsia regions of Ukraine.

The experts identified 15 competencies included in 6 basic components (Table 2).

Table 2. The components of professional competence (PC) of socionomics specialists.

Components	PC	Characteristics of PC functionality
motivational	PC1	The psychological and socio-pedagogical readiness for professional activity in difficult social conditions
	PC2	The motivational technologies in social work and technologies of activation of personal resources and resources of social environment
value-semantic	PC3	Social tendency to work with people
	PC4	The individual system of values and focus on socio-professional contacts in professional activities
cognitive-professional	PC5	The ability to recognize markers of social relations and use them adequately
	PC6	The ability to theoretically comprehend the tasks of professional activity
effective and professional	PC7	Existence of a system of basic and specific knowledge: general culture, literacy, professional education
	PC8	The ability to build relationships with people and manage these relationships in professional activities
	PC9	The ability to work in a team
	PC10	The ability to influence people, focus on results
	PC11	The ability to process information, generalize, analyze, set professional goals and choose ways to achieve them, analyze the logic of reasoning and statements
autopsychological	PC12	The personal and professional reflection
	PC13	The skills and abilities of emotional self-regulation, self-management, self-motivation
regulative	PC14	The volitional self-regulation in the professional and personal sphere
	PC15	The nability to predict and make effective decisions

The results are clearly presented in Figure 6.

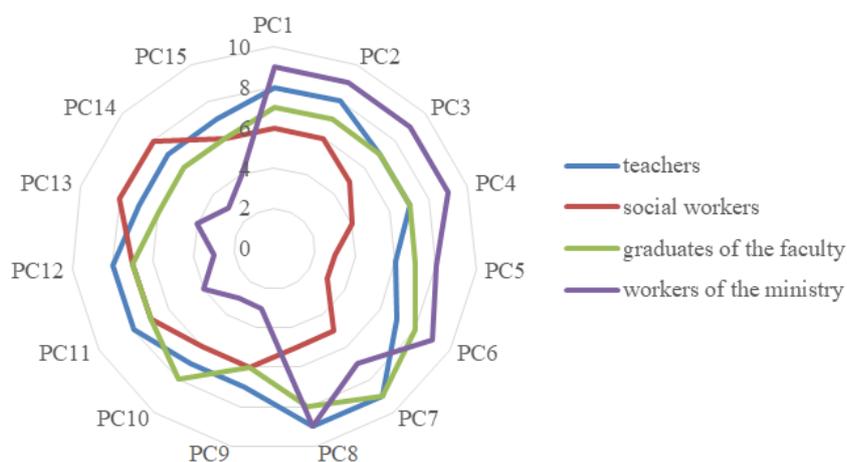


Figure 6. The assessment of professional competence by categories of respondents.

The comparison of normally distributed data has performed using the t-test (or Student's test). The algorithm for calculating the value of the t-test (provided that the variances are equal) are (Equation 1):

$$t = \frac{|M_1 - M_2|}{\sqrt{\frac{\delta_1^2 + \delta_2^2}{N_1 + N_2}}} \quad (1)$$

where M_1, M_2 - arithmetic means, δ_1, δ_2 - standard deviations, and N_1, N_2 - the volumes of the compared samples. The following formula is used to calculate the value of the t-test in pairwise comparisons (Equation 2):

$$t = \frac{|M_d|}{\delta_d / \sqrt{N}} \quad (2)$$

where M_d is the arithmetic mean of the differences of the even values of the two samples, and δ_d is the standard deviation of such differences.

Based on the calculated value of the statistical (t) program calculates the value of p. If $p \leq 0.05$, we reject the null hypothesis and conclude that the compared samples are significantly different.

The use of the statistical criterion of the t -test is given in Table 3.

Table 3. The comparative analysis of assessments of the professional competence of graduates and specialists of the socio-economic sphere of different status.

		Expert groups			
	Expert groups	1	2	3	4
1	The scientific-pedagogical and pedagogical workers of higher educational institutions	X			
2	The graduates of the full-time department of specialties 'Social work', 'Psychology', 'Special education' of higher education institutions	0.91048	X		
3	The social services specialists, work experience at least 5 years	0.00038	0.01127	X	
4	The employees of the Ministry of Social Policy of Ukraine	0.41238	0.27436	0.02345	X

The marker identified statistically insignificant differences at the level at least $p < 0.05$. The obtained results allowed to draw the following conclusions:

1. The reliable adequacy of ideas about professional competence on the part of teachers and graduates has revealed. It can be argued that this was the result of the organization of the educational process and selection scientific-pedagogical and pedagogical employees of the higher educational institutions. It is important when innovative content of the educational process, introduction of European standards of training of socio-economic specialists. Also a favorable point is a fairly high level of socio-psychological understanding and knowledge of the professional competence of the social worker as participants in the educational process and employers and their effective interactions.

2. The results indicate a fairly close perception of employees of the Ministry of Social Policy of Ukraine on the level of professional competence of graduates. This is explained, on the one hand, by the presence of these groups of specialists in one problem field of domestic social work, on the other - by the periodic interaction of these groups in various scientific and practical events (conferences, research, internships and internships, etc.).

3. The quite low level of assessment of social competence of graduates of the higher education institutions by social workers who have more than 5 years of experience in social service institutions. Explanations in this situation are possible from two points of view. The first, it is really not a high enough level of training for graduates. The assessment has based on the negative experience of practitioners in working with such young professionals or students. The practitioners note, the first of all, the lack of skills to work in complex and contradictory social realities. Another point of view may indicate an inadequate level of competence of the social workers themselves, who have been working in the field for more than 5 years.

This indicates the need for psychological and pedagogical support for the formation of professional competence of future specialists in the field of socioeconomics in higher education, the formation of appropriate psychological and pedagogical conditions for its formation.

Insufficient the formation of the components of professional competencies of future professionals is possible due to the shortcomings of teachers, due to their lack of focus on the problem (Prosen, 2015).

To eliminate such shortcomings, it is advisable to focus on possible research-based adjustments in the methodology of classes, the introduction of innovative technologies, the introduction of additional courses.

In order to identify students' inquiries about the areas of improving the psychological and pedagogical conditions for the professionalization of the future specialist in the field of socionomy in the higher education institutions, a survey of senior students was conducted.

The results of the survey have presented in Figure 7.

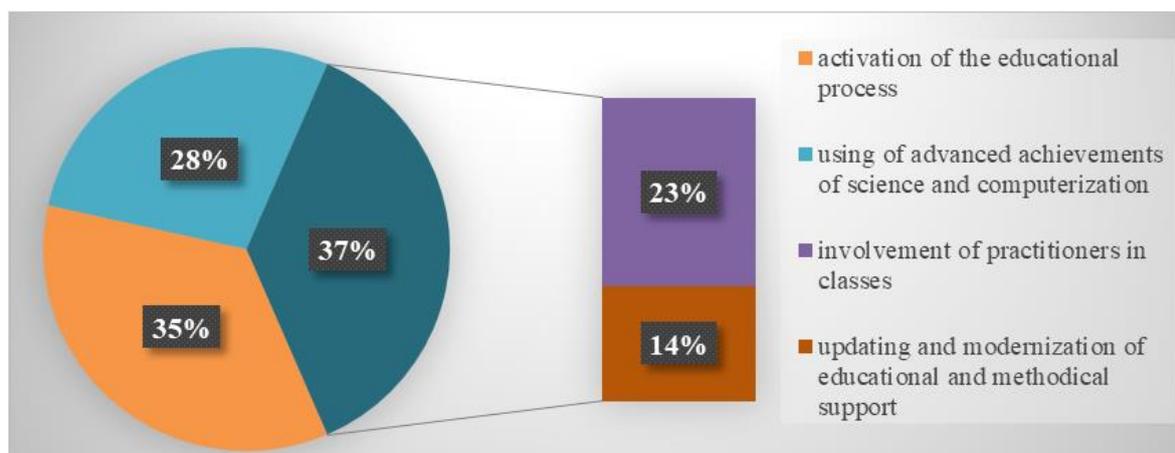


Figure 7. Directions for improving the quality of training of future specialists in the field of socionomism for his professionalization.

According to the respondents, the directions of improving the quality of training of the future specialist of the socionomic sphere in relation to his professionalization are the following:

- to intensification of the educational process, refusal of passive lectures in favor of practical, excursion, discussion and other forms of work (35%);
- using of advanced achievements of science and computerization for development of necessary knowledge, abilities, skills of partnership interaction (28%);
- to involvement of specialists-practitioners who use the possibilities of partner technologies in their activities (23%);
- updating and modernization of educational and methodical support for studying the course of disciplines of social and professional interaction of the future specialist of the socionomic sphere (textbooks, methodical recommendations, etc.) (14%).

Thus, the results of the study found:

- Institutions of the higher education are able to provide professionalization of specialists in the socionomic sphere provided that purposeful formation of the main components of professional competence;
- the focus should be on the development of skills of socio-professional interaction in order to establish partnerships with clients of social work and various institutions in the framework of interagency social work;

The latest demand of society is the formation of the competence of socio-professional interaction, as the ability to build positive intercultural and interpersonal relationships of future sociomics professionals.

Conclusion

This study examines the main aspects formation of professional competence specialists in the field of socionomics on the basis of innovative pedagogical technologies. Based on analytical research digital transformations of the educational process have presented features and main aspects of the current state and system prerequisites for effective formation of professional competence of specialists socionomic spheres. The directions of strengthening the influence of innovative pedagogical technologies on the effectiveness of the educational process and methods and pedagogical technologies for solving the problems of professionalization of socionomics specialists are determined.

The professional training of students for practical activities in the socionomic sphere is seen as a holistic system that includes a strategic goal - the formation of innovative thinking in the future specialist socionomic sphere who can effectively to carry out professional activity according to the requirements of international standards.

The following components of professional competencies of socionomic specialists have identified: motivational, value-semantic, cognitive-professional, effective-professional, autopsychological, regulatory. The necessity of psychological and pedagogical support of formation of professional competence of future

specialists of the socio-economic sphere in institutions of higher education, formation of the corresponding psychological and pedagogical conditions of its formation is proved. It is proposed to focus on the development of skills of socio-professional interaction of the future specialist in the field of socio-economics.

References

- Aldosemani, T. (2019). Inservice teachers' perceptions of a professional development plan based on the SAMR model: a case study. *The Turkish Online Journal of Educational Technology*, 18(3), 46-53.
- Babenko, V. (2020). Enterprise innovation management in industry 4.0: modeling aspects. In J. G. Tromp, D.-N. Le, & C. V. Le (eds.), *Emerging extended reality technologies for industry 4.0: early experiences with conception, design, implementation, evaluation and deployment* (p. 141-163). Hoboken, NJ: John Wiley & Sons.
- Bila, O., Miziuk, V., Gumennykova, T., Kichuk, A., Sagan, O., & Perminova, L. (2019). The use of modern interactive technologies in learning: correlation analysis of the results. *International Journal of Innovative Technology and Exploring Engineering*, 8(8), 3172-3175.
- Bondarenko, S., Laburtseva, O., Sadchenko, O., Lebedieva, V., Haidukova, O., & Kharchenko T. (2019a). Modern lead generation in internet marketing for the development of enterprise potential. *International Journal of Innovative Technology and Exploring Engineering*, 8(12), 3066-3071. DOI: <https://doi.org/10.35940/ijitee.L2477.1081219>
- Bondarenko, S., Verbivska, L., Dobrianska, N., Iefimova, G., Pavlova, V., & Mamrotska O. (2019b). Management of Enterprise Innovation Costs to Ensure Economic Security. *International Journal of Recent Technology and Engineering*, 8(3), 5609-5613. DOI: <https://doi.org/10.35940/ijrte.C6203.098319>.
- Borthwick, A., & Hansen, R. (2017). Digital literacy in teacher education. Are teacher educators competent? *Journal of Digital Learning in Teacher Education*, 33(2), 46-48. DOI: <https://doi.org/10.1080/21532974.2017.1291249>
- Brevik, L. M., Gudmundsdottir, G. B., Lund, A. & Strømme, T.A. (2019). Transformative agency in teacher education: fostering professional digital competence. *Teaching and Teacher Education*, 86(1), 2-15. DOI: <https://doi.org/10.1016/j.tate.2019.07.005>
- Chen, J. (2019). Exploring the impact of teacher emotions on their approaches to teaching: a structural equation modelling approach. *British Journal of Educational Psychology*, 89(1), 57-74.
- Cheung, S. K. S., Wang, F. L., & Kwok, L. F. (2021). The continuous pursuit of smart learning. *Australasian Journal of Educational Technology*, 37(2), 1-6. DOI: <https://doi.org/10.14742/ajet.7207>
- Corcoran, R. & Ross, S. M. (2014). Around the corner: a randomized controlled trial study of a technology enhanced approach to early literacy. *Cypriot Journal of Educational Sciences*, 9(4), 307-315.
- Day, C., Kington, A., Stobart, G., & Sammons, P. (2006). The personal and professional selves of teachers: stable and unstable identities. *British Educational Research Journal*, 32(4), 601-616. DOI: <https://doi.org/10.1080/01411920600775316>
- Dommett, E. J., Gardner, B., & Van Tilburg, W. (2019). Staff and student views of lecture capture: A qualitative study. *International Journal of Educational Technology in Higher Education*, 16(1), 1-12. DOI: <https://doi.org/10.1186/s41239-019-0153-2>
- Evans, G., & Luke, K. (2020). Lecture capture and peer working: exploring study practices through staff-student partnerships. *Research in Learning Technology*, 28(1), 2314. DOI: <https://doi.org/10.25304/rlt.v28.2314>
- García-Sanz, M. P., & Morillas, L. R. (2011). La planificación de evaluación de competencias en Educación Superior. *Revista Interuniversitaria de Formación del Profesorado*, 14(1), 113-124.
- Global EdTech Market. (2020). Retrieved from <https://www.holoniq.com/notes/global-education-technology-market-to-reach-404b-by-2025/>
- Graziano, K., Herring, M., Carpenter, J., Smaldino, S., & Finsness, E. (2017). A TPACK diagnostic tool for teacher education leaders. *Tech Trends*, 61(4), 372-379.
- Gumennykova, T., Pankovets, V., Liapa, M., Miziuk, V., Gramatyk, N., & Drahiiieva L. (2020). Applying instructional design methods to improve the effectiveness of blended-learning. *International Journal of Management*, 11(5), 31-42. DOI: <https://doi.org/10.34218/IJM.11.5.2020.004>
- Hubanova, T., Shchokin, R., Hubanov, O., Antonov, V., Slobodianiuk, P., & Podolyaka, S. (2021). Information technologies in improving crime prevention mechanisms in the border regions of southern Ukraine. *Journal of Information Technology Management*, 13(spec), 75-90. DOI: <https://doi.org/10.22059/JITM.2021.80738>

- Khan, S. H., & Markauskaite, L. (2017). Approaches to ICT-enhanced teaching in technical and vocational education: a phenomenographic perspective. *Higher Education*, 73(5), 691-707.
- Klochun, V., Piliaiev, I., Sydorenko, T., Khomutenko, V., Solomko, A., & Tkachuk A. (2021). Digital platforms as a tool for the transformation of strategic consulting in public administration. *Journal of Information Technology Management*, 13(spec), 42-61. DOI: <https://doi.org/10.22059/JITM.2021.80736>
- Krishnan, R. (2020). Big data, AI, and algorithmic platforms: Implications for governing and public policy. In J. L. Perry (Ed.), *Public service and good governance for the twenty-first century* (p. 68-86). Filadélfia, PA: University of Pennsylvania Press.
- Kummitha, R. K. R., (2020). *Smart technologies for fighting pandemics: the role of techno and human driven approaches in controlling virus transmission* (Government Information Quarterly). Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3578108
- Kuznetsov, A., Smirnov, O., Gorbacheva, L., & Babenko, V. (2020). Hiding data in images using a pseudo-random sequence. In *CEUR Workshop Proceedings* (p. 646-660). Retrieved from <https://ceur-ws.org/Vol-2608/paper50.pdf>
- Mckenna, B. A., & Kopittke, P. M. (2018). Engagement and performance in a first year natural resource science course. *Journal of Computer Assisted Learning*, 34(3), 233-242. DOI: <https://doi.org/10.1111/jcal.12236>
- Muñoz, E. & Cubo, S. (2019). Competencia digital, formación y actitud del profesorado de educación especial hacia las tecnologías de la información y la comunicación (TIC). *Profesorado, Revista de Currículum y Formación del Profesorado*, 23(1), 209-241. DOI: <https://doi.org/10.30827/profesorado.v23i1.9151>
- Myamesheva, G. (2015). The virtue in the modern smart world. *Bulletin KazNU*, 44(1), 152-156.
- Organisation for Economic Cooperation and Development [OECD]. (2016), *Innovating education and educating for innovation: the power of digital technologies and skills*. Paris, FR: OECD Publishing.
- Oliveira, C. López, J. & Spear-Swerling, L. (2019). Teachers' academic training for literacy instruction. *European Journal of Teacher Education*, 42(3), 315-334. DOI: <https://doi.org/10.1080/02619768.2019.1576627>
- Prosen, M. (2015). Introducing transcultural nursing education: Implementation of transcultural nursing in the postgraduate nursing curriculum, *Procedia - Social and behavioral Sciences*, 174(1), 149-155.
- Sagan, O., Yakovleva, S., Anisimova, E., Balokha, A., & Yeremenko, H. (2020). Digital didactics as a new model in the theory of education. *Revista Inclusiones*, 7(esp.), 193-204.
- Scherera, R., Siddiqb, F., & Tondeur, J. (2019). The technology acceptance model (TAM): a meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. *Computers & Education*, 128(1), 13-35. DOI: <https://doi.org/10.1016/j.compedu.2018.09.009>
- Tsvetkova, M., & Kiryukhin, V. (2019). Advanced digital competence of the teacher. In R. B. Monyai (Ed.), *Teacher education in the 21st century, reginald botshabeng monyai*. IntechOpen
DOI: <https://doi.org/10.5772/intechopen.83788>
- Zou, D., Wang, M., Xie, H., Cheng, G., Wang, F. L., & Lee, L.-K. (2021). A comparative study on linguistic theories for modeling EFL learners: facilitating personalized vocabulary learning via task recommendations. *Interactive Learning Environments*, 29(2), 270-282.
DOI: <https://doi.org/10.1080/10494820.2020.1789178>.

INFORMATION ABOUT THE AUTHORS

Nataliia Kravtsova: Department of Vocal and Choral Training, Theory and Methods of Music Education, Vinnytsia Mykhailo Kotsiubynskiy State Pedagogical University, Vinnytsia, Ukraine.
ORCID ID: <https://orcid.org/0000-0002-3528-4547>
E-mail: kravtsova65@ukr.net

Olena Tryfonova: Department of Preschool Education, V.O. Sukhomlynskyi National University of Mykolaiv, Mykolaiv, Ukraine.
ORCID ID: <https://orcid.org/0000-0002-7899-3714>
E-mail: 5lenatryfonova@gmail.com

Liudmyla Povzun: Department of Chamber Ensemble, The Odessa National A. V. Nezhdanova Academy of Music, Odessa, Ukraine.

ORCID ID: <https://orcid.org/0000-0002-1133-6330>

E-mail: nykolai.povzun@gmail.com

Diana Gultsova: Department of Special Piano, The Odessa National A. V. Nezhdanova Academy of Music, Odessa, Ukraine.

ORCID ID: <https://orcid.org/0000-0001-7837-7316>

E-mail: d.gultsova@gmail.com

Nadiia Gramatyk: Department of General Pedagogy, pre-school and primary Education, Izmail State Humanitarian University.

ORCID ID: <https://orcid.org/0000-0002-0374-6954>

E-mail: Gramatiknadea@gmail.com

Svitlana Bondarenko: Department of Journalism, National Aviation University, Kyiv, Ukraine.

Email: svitlana.bondarenko@npp.nau.edu.ua

ORCID: <https://orcid.org/0000-0002-1687-1172>

NOTE:

Nataliia Kravtsova, Olena Tryfonova, Liudmyla Povzun, Diana Gultsova, Nadiia Gramatyk, Svitlana Bondarenko were responsible for the creation, analysis and interpretation of the data, writing and revision of their contents of this manuscript and its approval of the final version to be published.