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DIGITIZATION AS A DIGITAL HUB OF INTERACTION IN THE EDUCATIONAL ENVIRONMENT OF A EDUCATION INSTITUTION

A DIGITALIZAÇÃO COMO CENTRO DIGITAL DE INTERAÇÃO NO AMBIENTE EDUCACIONAL DE UMA INSTITUIÇÃO DE EDUCAÇÃO

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ABSTRACT

The article analyzes generally accepted and innovative approaches to managing the quality of specialist training in (vocational and technical) education institutions, reveals the essence of the concept of competitiveness as a socio-economic phenomenon. The effectiveness of the structural-functional quality management model of specialist training has been proven, the issue of involving business and stakeholder councils in quality management, innovative views in ensuring the quality of professional training by bringing the content of state standards into account (vocational and technical) education, close to the requirements of employers; systematic work on increasing the prestige of working professions (introduction of innovative technologies of professional orientation, professional development and career planning); development of elements of dual and mixed education systems; effective management and control of the educational and production process. He proposed such effective areas as mentoring, creation of educational clusters, application of hub technologies, digitization). Mechanisms of quality management of vocational education and training in countries are substantiated, quality assessment system is analyzed.

Keywords: Socio-Economic Phenomenon, Specialist Training, Educational Process.

RESUMO

O artigo analisa abordagens geralmente aceites e inovadoras para a gestão da qualidade da formação especializada em instituições de ensino (profissional e técnico), revela a essência do conceito de competitividade como fenómeno socioeconómico. Está comprovada a eficácia do modelo de gestão da qualidade estrutural-funcional da formação especializada, a questão do envolvimento dos conselhos empresariais e de partes interessadas na gestão da qualidade, visões inovadoras na garantia da qualidade da formação profissional, tendo em conta o conteúdo das normas estaduais (profissional e formação técnica, próxima às exigências dos empregadores; trabalho sistemático para aumentar o prestígio das profissões activas (introdução de tecnologias inovadoras de orientação profissional, desenvolvimento profissional e planeamento de carreira); desenvolvimento de elementos de sistemas educativos duais e mistos; gestão e controle eficazes do processo educacional e produtivo. Ele propôs áreas eficazes como mentoria, criação de clusters educacionais, aplicação de tecnologias de hub, digitalização). Os mecanismos de gestão da qualidade do ensino e formação profissional nos países são fundamentados, o sistema de avaliação da qualidade é analisado.

Palavras-chave: Fenômeno Socioeconômico, Treinamento Especializado, Processo educacional.

Introduction

Today, in Ukraine, there is a noticeable trend towards a decrease in the quality of specialist training compared to developed countries and the demands of employers, professional education is not prestigious. Thus, in recent years, as a result of the deterioration of the demographic situation (aging population, declining birth rate), there has been an increase to 80% of the share of young people oriented towards obtaining higher education, and a gradual decrease in the number of those acquiring education.

As of January 1, 2021, the total number of vocational education recipients decreased by 5.3% compared to January 1, 2018 and by 37.7% compared to January 1, 2014.

The identified problems are caused by: the presence of a centralized and bureaucratized management system in the field of professional education; lack of cooperation with employers and business partners; the imperfection of the system of professional guidance and career counseling for youth and adults, etc.

Manifestations that confirm the existence of a problem are: an increase in the share of young people who receive education outside the country; growing shortage of workers in the domestic labor market; decrease in the attractiveness and prestige of professional education; decrease in the social status of pedagogical workers of a professional education institution.

There is a need to increase the efficiency of management activities to ensure the prestige of professional education, the quality of training future specialists; cooperation with employers. However, today a significant number of managers of educational institutions have no desire to change the system, which would be aimed at a high level competitiveness (SÁEZ-LÓPEZ, J.M.; SEVILLANO-GARCÍA, M.L., & VAZQUEZ-CANO, E., 2019). As of January 1, 2021, there were 700 educational institutions in Ukraine, of which about 40% of institutions have a contingent of applicants of up to 300 people, 5% of low-staffed institutions with the number of applicants is less than 1006, which gives grounds for the conclusion that the professional education system is at a critical stage of reform.

In modern conditions of global development of society, everything is changing. The economy is becoming more innovative - new, informational, knowledge economy, electronic, network, Internet economy, Web economy, Smart economy, crypto economy. New pattern recognition systems are emerging in the world - educational, non-learning and self-learning (neural networks), intelligent decision support systems. Electronic services, payment systems, and electronic money are used for payments for goods and services. The economy ceases to be traditional and goes digital (GONZÁLEZ-GONZÁLEZ, C.S., 2019).

A sign of this transformation is the widespread use of the Internet, mobile communications, and information and computer technologies. That is, the digital economy is based on electronic: infrastructure, which includes the Internet, telecommunications, software and becomes hardware; business, more automated; commerce carried out mainly via the Internet; the government, which uses modern information and communication technologies in state management; money, which provides for non-cash payments.

Today, there are a number of countries with the most developed digital economies in the world: Norway, Sweden, Switzerland, the USA, Great Britain, Denmark, Finland, the Netherlands, Singapore, South Korea and Hong Kong. According to the GDP and HDI index, they are divided into four groups: countries with limited development (constrained); emerging countries; countries of transformations (transitional); countries of advanced development (advanced).

In 2018, Ukraine ranked 60th, between Peru and Argentina, according to The IMD World Digital Competitiveness Ranking and is classified as transitional.

Therefore, it is important for Ukraine to recognize as a priority exactly such a direction of development as digital transformation, whichwill affect the integration of digital technologies in all spheres of life of society and the state, which as a result will change the pace of achieving common economic and social goals, ways of ensuringvalues for themselves, their employees, clients and partners. As a result of digital transformation, goals will be achieved much faster, cheaper and with new quality.

The analysis of scientific sources of domestic and foreign research and the study of the practical state of training quality management in vocational education institutions revealed a number of contradictions between:

- traditional organizational and methodical forms and methods of professional training of future competitive specialists and the need to update the specified process;

- needs for effective management and insufficient development of the problem, lack of innovative technologies aimed at improving the quality of training of competitive specialists;

– integration processes and the nature of the requirements for professional training, and the insufficient development of the theoretical and methodological principles of its quality management;

- requests for the quality of labor training in relation to the market of competitive specialists in the educational institution and the low professional level of its implementation.

The identified contradictions inhibit the quality management process of training competitive specialists in an educational institution, the formation of managerial components of the institution's management personnel and directly affect the quality of training and the level of competitiveness of specialists.

Literature review

At different times, scientists were engaged in researching the issue of management (SÁEZ-LÓPEZ, J.M.; SEVILLANO-GARCÍA, M.L., & VAZQUEZ-CANO, E., 2019), (GONZÁLEZ-GONZÁLEZ, C.S., 2019), (KANBUL, S. & UZUNBOYLU, H., 2017), (TURAN, S., & AYDOĞDU, F., 2020), (TURAN, S., & AYDOĞDU, F., 2020), management as a pedagogical phenomenon studied: (ALAMO, J.; QUEVEDO, E.; COLL, A.S.; ORTEGA, S.; FABELO, H.; CALLICO, G.M. & ZAPATERA, A. 2021), (BERS, M.U.; GONZÁLEZ-GONZÁLEZ, C. & ARMAS-TORRES, M.B., 2019), the management of socio-pedagogical systems was investigated: (CABALLERO-GONZÁLEZ, Y.A.; & GARCÍA-VALCÁRCEL, A., 2020), (JAMAL, N.N.; ABANG JAWAWI, D.N.; HASSAN, R. & MAMAT, R., 2021), engaged in modeling pedagogical systems and processes: (KIM, C.M.; KIM, D.; YUAN, Y.; HILL, R.B.; DOSHI, P. & THAI, C.N., 2015), (VALSAMIDIS, S.; FLOROU, G.; ANASTASIADOU, S., & MANDILAS, A., 2021), (BERS, M.U.; FLANNERY, L.; KAZAKOFF, E.R. & SULLIVAN, A.,2014).

Materials

1- Theoretical: analysis of pedagogical, philosophical, sociological, economic literature, legal acts of the European Union related to the research topic; analysis of the management system for the organization of additional education, modeling of the pedagogical strategy for managing social innovations in the network interaction of educational organizations.

2- Empirical: reconstruction and analysis of pedagogical experience, pedagogical experiment, observation, survey methods (questionnaire, conversation). Methods of statistical processing of the results of experimental work.

In general, digital transformation will fundamentally qualitatively change the relations between citizens, enterprises, institutions and organizations and, accordingly, between the participants of the educational process.

Among the priority (strategic) tasks in Ukraine today is "ensuring comprehensive and fair quality education and encouraging the possibility of lifelong learning for everyone." Implementation of such a task is possible, in

particular, by creating a computer-oriented educational environment, in particular, IOS, which is ensured by the maximum use of ICT in all spheres of activity (KANBUL, S. & UZUNBOYLU, H., 2017). This approach in pedagogy is called environmental. It acts as a source of intelectual enrichment of the student of education, development of his competence, motivation to study. Such an educational environment is developmental.

It "expands citizens' access to information technologies, the Internet and information resources, promotes the implementation of distance learning technologies in order to implement various forms of (full-time and extramural) training highly qualified specialists, implementation of effective regional policy and equalization of achievements and gainssocio-economic development of regions and provision of relevant personnel".

IOS is considered as a socio-communication system, which is used for the purpose of information and technological support of training specialists, determination of their professional direction, professional inclinations, determination of the type of profession, range of interests and innovation - for the purpose of creation, development, use, distribution innovations that contribute to the formation of the development regime.

As a result of the use of ICT of different intensity, varieties of IOS are formed, in which the integration of all information is carried out with the help of various media. For example, structured interaction between participants in the educational process is supported in an interactive learning environment; in a virtual environment a variety of software is actively used to provide educational services (TURAN, S., & AYDOĞDU, F., 2020).

The quality of education, in our opinion, should be recognized by legally approved standards and should contribute to its development in all formats (formal, informal, informal) of education as for students of education, as well as for other participants in the educational process (teachers, heads of institutions and educational institutions). However, achieve quality modern education is impossible without its modernization. According to modern observers, digitalization (digitalization) is such a modernization. This process is

characterized by electronic communication interaction between systems, the presence of appropriate electronic and digital devices and means.

Experts believe that the ability to work effectively in social networks is an important advantage for any specialist and in the near future will become an advantage in any society, creating the so-called "digital economy" (digital economy), about which was first stated by (ALAMO, J.; QUEVEDO, E.; COLL, A.S.; ORTEGA, S.; FABELO, H.; CALLICO, G.M. & ZAPATERA, A. 2021). In the same year, (BERS, M.U.; GONZÁLEZ-GONZÁLEZ, C. & ARMAS-TORRES, M.B., 2019) drew attention to the fact that it is not based on atoms, but to beat Therefore, digitization is based not on classic, but on digitized information, which qualitatively changes the behavior of any subjects and turns real relations into virtual ones, real events into virtual space. According to statistical data Facebook, the number of Ukrainian users in the network as of February 2021 was 2 million people. In comparison: in 2018, this figure was only 225,000.

During the last decade, there has been a qualitative change of leaders in the world economy. If ten years ago financial conglomerates (HSBC Holdings, Bank of America, JPMorgan Chase) and well-known industrial corporations (General Electric, ExxonMobil, Royal Dutch Shell, British Petroleum, Toyota Motor, etc.) dominated, now (since 2019) the three most capitalized.

companies in the world belong to the technology sector (Apple, Amazon, Google). Their shares are collectively valued at more than 2.8 trillion. dollars USA, and this is 25 times higher than the GDP of Ukraine for 2018.

It is clear that the digital economy opens up new opportunities for Ukraine, among which modernization of equipment, transformation of inefficient production and management processes, reduction of abuse of powers occupy a significant place etc. (CABALLERO-GONZÁLEZ, Y.A.; & GARCÍA-VALCÁRCEL, A., 2020). According to some foreign experts: financial markets are located in the USA and Europe; production - in China; talents are in Ukraine.

Experts claim that the share of the digital economy in the GDP of Ukraine under the conditions of the implementation of the forced scenario of the development of the digital economy will exceed that of the most developed

countries. Therefore, in our opinion, it is important to understand what to develop digital the economy in Ukraine is needed precisely through forced, i.e. targeted, and not inertial or evolutionary scenarios. After all, in the case of the implementation of the last scenario, the Ukrainian economy will remain unchanged, labor migration, inefficient production, and uncompetitive business entities will remain in it. Experts predict that the target (forced) scenario of the transformation of the Ukrainian economy to a digital one will take place in 3-5 years due to the implementation of a number of tasks, among which those that depend on managers and executors should be singled out (JAMAL, N.N.; ABANG JAWAWI, D.N.; HASSAN, R. & MAMAT, R., 2021). Namely: managers must ensure conditions for the creation of an intellectual hub and the development of human potential, improve legislation and motivate business entities to introduce digitalization, support public-private partnership at the state level, improve the qualifications of specialists in the field of digital technologies; performers should intensify the introduction of innovations and new technologies, create and develop digital infrastructures, increase the level of digital competence and digital competencies, develop digital entrepreneurship, implement mechanisms for supporting innovative activities.

Therefore, the important goals of digitization in an educational institution should be: investment attraction; technological and digital modernization of the educational process of creating experimental high-tech workplaces; implementation of human resources, development of digital entrepreneurship; accessibility of the advantages and opportunities of the digital world for the participants of the educational process.

The implementation of digitalization in the economy of Ukraine requires updating professions, which should include a list of new digital professions that arise on the basis of labor market requirements and digital trends. And this, in turn, requires the development of new educational and educational-production programs for training competitive specialists, in particular in educational institutions.

Such educational and educational-production programs should provide for the formation of general and professional digital competences, which are basic on the way to accelerated development of the digital economy in Ukraine. Digital competence refers to the ability to use digital media and ICT, to understand and critically evaluate various aspects of digital media and media content, and to be able to communicate effectively in various contexts (KIM, C.M.; KIM, D.; YUAN, Y.; HILL, R.B.; DOSHI, P. & THAI, C.N., 2015).

Mastering completely new technologies requires a qualitative change in educational programs and the educational process. For example, targeting is a technology for researching industrial sectors in order to assess their competitiveness and prospects development; transfer — the technology of implementing IT and digital technologies; patenting is a technology for preserving intellectual property objects. Such technologies also include the use of Internet products, "big data", "predictive analytics", cloud and fog computing, machine learning, machine interaction, artificial intelligence, robotics, 3D printing, augmented reality, etc., which shape digital skills. Both leaders and teachers, as well as students in the educational institution, should master the specified technologies (VALSAMIDIS, S.; FLOROU, G.; ANASTASIADOU, S., & MANDILAS, A., 2021).

Taking into account the above, we consider it necessary for each educational institution to develop its own digitalization model, which will require "the introduction of more flexible and seamless processes, a change in corporate culture, optimization of all activity processes", and this, in turn, is possible under the conditions of the creation and support of engineering clusters and technical-technological and methodical committees for the use of IT and digital technologies. For example, we will offer our own digitalization model.

Namely:

- digital management system - requires the implementation of an end-to-end electronic document management system and IT support for all administrative, management, organizational, economic and other processes;

- digital educational activity - the creation and development of a single IOS that would satisfy the informational needs of all subdivisions and educational processes;

- digital educational and methodological activities - development of appropriate tools for free access to digital databases of educational and educational and methodological information, electronic library fund; IT support for participation in national and international educational programs;

- development of human capital - development of digital competencies of employees and students of education; improving the digital culture of users; personnel training for the transition to paperless work technologies; increasing the digital potential of development;

- digital infrastructure - provision of a modern material, technical and technological base; maintenance of processes remote access to data; presentation of information in a convenient for users of the form;

3- - digital ecosystem - platform and technology support; formation of digital services in educational activities; development of a single IOS; ensuring digital security.

Conclusions

During the analysis of scientific sources of image formation, as a component of effective management, it was determined that the mechanism of creating a positive image should be systematic, constantly operating and satisfy the most diverse needs of consumers of educational services. A positive image cannot be formed spontaneously, uncontrollably, but must be the subject of daily purposeful work.

It was found that the best positive image of the education sector is in Malta (89% of respondents), Finland (84%), and the Czech Republic (77%).

Average level of attractiveness of the field (60-68%) in Bulgaria, Romania, Sweden, Slovakia. The lowest level of attractiveness of the field is

characteristic of the Netherlands (53%), France (51%), Hungary (49%)1424, where higher education is a priority.

In Ukraine today, along with positive developments in the direction of forming a positive image of the institution, it is relevant the problem of insufficient activity of managers remains. As a rule, this is due to the low level of awareness of the heads of institutions of the need for such measures and the lack of professionals, familiar with the technologies of forming a positive image (BERS, M.U.; FLANNERY, L.; KAZAKOFF, E.R. & SULLIVAN, A.,2014).

An important component of creating a positive image is the active use of ICT. Precisely modern intelligent systems digital education is formed not by simple knowledge, but by systemic, flexible knowledge that is necessary for the modern economy and contributes to the development of collective problem-solving skills and the formation of such character traits, such as perseverance, empathy, stability, thoughtfulness, which are necessary for modern courage, leadership, competitive specialist.

Currently, the process of implementing ICT in Ukraine is slow and unsystematic, and needs to be strengthened and supplemented scientific substantiation in educational, educational-production and management processes, which involves: creation favorable environment for innovations in which they are implemented innovative ideas; strengthening professional autonomy and a culture of cooperation, where good ideas are improved and spread; development professionalism of teachers and masters of industrial training by means of increasing their professional competence formal, non-formal and informal education; creation of an educational hub, accessible to all educational consumers information of education seekers, pedagogical workers of education, founders and employers, which would ensure activity in a specific field of activity in a specific territory or in the state as a whole.

It was found that it is one of the forms of social partnership, which is carried out at different levels, in which equality, transparency and trust between partners are an important condition. In Ukraine, heads of institutions and institutions are only mastering the system the skills of establishing such

partnership relations, in which each member of the cluster is an equal partner, without whose participation impossible to achieve the set common goal, in particular in the training of competitive specialists.

We believe that in the conditions of decentralization in Ukraine, formation is a strategic direction in improving the levels of professionalization and competitiveness of the state on foreign and domestic markets.

It was determined that the application of hub technologies in activities is a promising direction of development, because the requirements of the time are the creation of a single informational and educational space as one of the system factors of rational use of the resources of the region, economic sectors and the state as a whole. In addition, this technology is flexible, effective, low-cost, which will contribute to the development of market relations, competition, modernization of technology production.

It was determined that one of the ways to ensure modern conditions of the educational and production process and interaction between its participants, the development of the education system and the economy of the state is digitalization, which significantly changes the structure and functions of quality management of the training of competitive specialists.

The conducted research allows us to assert that the proposed model of business partnership in ensuring the quality of training of competitive specialists for the principles of mentoring meet the modern requirements of the state and society for high-quality professional training of specialists and leads to an increase in domestic competitiveness, increases the quality of education and contributes to the improvement of the socio-economic well-being of the country as a whole.

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