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NEW METHODOLOGICAL APPROACHES TO WORK WITH STUDENTS IN THE CONDITIONS OF DIGITALIZATION

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Abstract: *The problem of finding new approaches to the organization of training has become particularly important in times of digital turbulence. Today, during the coronovirus pandemic, there is a transition from the established traditional technologies of organizing training to the widespread use of digital technologies in the online learning system, which has covered the whole world. The purpose of the research is to substantiate, develop and test the model of the electronic coworking environment in the system of higher pedagogical education. At the same time, the coworking environment is considered as an educational virtual cluster. Such a basic platform is an educational content that includes all educational products. To solve the tasks, we used research methods: design and modeling; studying the products of the coworking environment, conversations in chats, questionnaires; mathematical processing methods.*

The presented research results revealed the advantages of the coworking environment: successful socialization, minimization of time and economic resources, expansion of business partnerships, mutual assistance and a comfortable atmosphere. The analysis of studies on the criterion of coworking productivity revealed an increase in the mobility of students, an increase in the satisfaction index and the effectiveness of communication. Testing the e-coworking model proves its advantages and prospects for implementation in the system of higher pedagogical education.

The conducted research allowed us to come to the following conclusion: the introduction of remote technology models in the training of students and undergraduates based on the Moodle system in the form of a coworking environment is a powerful innovative resource. We predict the expansion of the industry of coworking spaces and see the need to continue scientific developments in this direction.

Key words: *digitalization, innovative technologies, coworking environment; electronic coworking*

I. INTRODUCTION

The theory and practice of improving educational technologies in higher education are in constant search and innovative development. Scientific studies carried out in the last decade [1, 2, 3]

convincingly prove that the modern university and the student studying in it, in terms of mobility and requests for educational content, have become different. In modern realities, the vector of scientific research is shifting towards remote technologies, one of which can be considered a coworking space. In this regard, the task of developing electronic educational cooperation as a new format of interaction in the "teacher-student" dyad arises.

The emergence of the first coworking zones in world practice is associated with the initiative of B. Newberg (2005), who proposed combining the activities of freelancers and office work, giving the name “coworking” (joint office) [4]. Coworking spaces quickly gained adherents all over the world: starting with one-off projects (first in the US; then in Europe), coworking has emerged as a new concept of employment and is gaining new momentum. Asian countries successfully compete with global educational trends. K.-M. Cheng [5] breaks apart the peculiarities of the education system in Asia, noting its importability from Germany and the UK. It can be assumed that in the field of educational technologies, the countries of the Asian region will take leading positions in the coworking industry.

A systematic analysis of scientific and methodological literature has shown that in the professional consciousness of the scientific community, the concept of "educational coworking" is only entering the orbit of scientific research in the field of sociology, pedagogy and psychology, and therefore requires clarification of basic definitions, specification of technologies, approbation and experimental verification.

Having studied the etymology of the definition, we identified:

- in a broad sense, "coworking" is a new form of organizing the activities of people with different professions in one space;
- in the narrow sense, it is a workspace that acts as a remote collective office [6].

In the era of IT technologies and the media industry, the coworking environment seems to us the most in demand. At the same time, we were faced with the fact that the concept of "electronic educational coworking" is not represented in the scientific and methodological literature at all, which allows us to theoretically substantiate a model of a new type of interaction "teacher-student" and consider coworking space as an innovative educational content of learning in modern higher education. The recent events of the coronavirus pandemic and the long stage of self-isolation in the international context have transferred the entire educational resource to the format of Internet technologies and video conferencing, which gives educational coworking not only theoretical novelty, but also practical significance.

The technology of design and planning of educational systems in the world has been changing in the last decade. The problem of the redistribution of study time is becoming one of the leading trends. Thus, in the study by J. Hallack, M. Poisson [7], new schemes for managing an individual educational trajectory (“the right to study”) are proposed, which gives us reason to predict sustainable prospects for the development of coworking spaces in the higher education system.

The purpose of the study is to substantiate, develop and test a model of an electronic coworking environment in the higher education system. We position the model of such content as two parallels of the participants in the educational process: on the one hand - “teacher-student”; on the other hand, a bachelor-master student using modern distance technologies on the Moodle platform. At the same time, one subject of the educational process - a university teacher - creates and supplements electronic educational content (its content, technologies); another subject - a student - is an active user of the electronic coworking environment, which for him acts as a virtual educational cluster.

II. METHODS AND MATERIALS

The mechanism for creating an electronic coworking space is aimed at solving educational problems. To solve the set tasks, research methods were used: design and modeling; studying the products of the coworking environment, chatting, questioning; mathematical methods of processing the results (quantitative and qualitative analysis of research results).

In the process of modeling, a model of educational coworking was theoretically substantiated, which allows students on the Moodle platform to have access to a remote environment in a 24/7 format (around the clock). The logic of using modeling methods includes checking the design results. During the design process, the criteria and levels of quality of education were determined using distance learning technologies. The performance criteria are reflected in the levels of education: unsatisfactory; sufficient; competitive; tall.

The use of empirical methods (studying the results of questionnaires and conversations in coworking chats, monitoring the activity of the coworking environment, as well as a group of mathematical methods made it possible to carry out a quantitative and qualitative analysis of the research results and make adjustments to the model when testing educational coworking.

III. RESULTS

The introduction of a distance technology model in the teaching of undergraduate and graduate students based on the Moodle system has proved that due to the acmeological nature of coworking, the efficiency and quality of work of each of its participants increases in comparison with work in standard forms of organizing the educational process [8, 9]. Thus, in the course of the study, an innovative model of an electronic coworking environment in the distance education system was theoretically substantiated, developed and implemented, providing an accessible, psychologically comfortable and professionally oriented media environment.

The convenience of such educational content in terms of content and pedagogical feasibility is undeniable, as evidenced by the assessments of students and employers acting as experts. The indicators of the effectiveness of the electronic coworking environment (ECS) were: positive dynamics of students' motivation to various types of educational activities using models of panoramic lectures, virtual discussion clubs "Educational Periscope", "University-42"; positive dynamics of the number of students-residents of ECS; positive dynamics of the number of ECS resident teachers. An electronic collaboration system has experimentally proven that a virtual cluster has become an effective tool not only for book trailers and booktubes, but also for interviews, photo sessions, a source for reviewing events and a tool for disseminating educational information [10].

Discussing the theory of the matter and creating coworking spaces are just beginning to enter widespread public acceptance, but the benefits are already evident. It has been experimentally proven that this content has both positive and negative sides. In the work of D. R. Khakimova and L. M. Kuleeva [11], the advantages of a coworking environment were identified: successful socialization, minimization of time and economic resources, expansion of business partnerships, mutual assistance and a comfortable atmosphere. The analysis of studies on the criterion of coworking productivity revealed an increase in the effectiveness of communication.

By developing and gradually introducing educational coworking spaces, we emphasize that in this innovative environment it is possible not only to gain new knowledge, but also to share experiences. Following AD Zakharov [12], we consider the coworking community as a platform for the constant exchange of ideas and experience, as the formation of new business contacts, expanding opportunities for the implementation of new projects, reviewing works and receiving feedback in the form of expert opinions. The predominant conditions for a coworking environment are: the possibility of a high-speed startup, flexible working hours, equality and democracy of all its participants, comfort and accessibility. The coworking mecdia environment contributes to the development of new ideas, the creation of new projects using innovative technologies with the participation of teachers not only from their own university, but also educational organizations of network partners, employers, external experts, trainers, etc.

In developing a meaningful adult learning model, three stages were identified:

- design (definition of goals, objectives, assessment criteria, predicted risks, etc.);
- functional (sequence of levels of model implementation);

- managerial (intermediate results, their analysis, conclusions).

The study found that the concepts of “innovation” and “innovation” are not identical [13]:

1. Significant differences were found according to the main criterion - novelty: innovation is associated with the renewal of any areas limited by rationalization; innovations open up new directions, new technologies - that is, a new quality of results appears.
2. The scope of the goals and objectives of innovations is private, their methodological support is carried out within the framework of existing theories. Innovation, on the other hand, is systemic and usually transcends existing theories.
3. These concepts differ in the nature of their actions: innovations are aimed at purposeful continuous holistic search and the most complete desire to obtain a new result; innovations are usually limited in scope and time.

The introduction of a distance learning model in the training of students and undergraduates based on the Moodle system allowed us to model and implement electronic educational content in a coworking format. The starting point in the creation of educational content was the formation of a human resource capable of creating electronic educational content in all its diversity (cluster of models: panoramic lecture, virtual discussion club, "educational periscope", "University-42", webinars, chats, coworking, etc.). The electronic coworking environment was not only the main factor of the educational cluster, but also the basic platform on which all of the above models are “strung”.

The second stage of the model implementation was the placement of innovative educational content using distance learning technologies in the Moodle system, which includes a set of hardware and software for the LMS server. The final stage: summing up the results of the project (monitoring, evaluation, review-peer review, chat-test, etc.). The content and content of educational content included thematic master classes, webinars, book trailers, bookings, training videos, step-by-step instructions for completing educational tasks, etc. Thus, for the implementation of the coworking environment, electronic educational content was created, a kind of thematic educational resource using distance educational technologies.

The technologies of the booktrailer and buktyub, included in the ECS, made it possible to use them when introducing a system of coursework in the distance learning system for full-time and part-time students. The experience of testing electronic educational coworking in the system of continuing professional education made it possible to conclude that the new educational technology has been successfully tested [14]. Indeed, in the process of electronic collaboration in the "teacher-student" system, a new type of relationship is formed. This type of educational communication distances itself into the system of the electronic educational community, which, in its main characteristics, is key and backbone. In the course of approbation, a student working in an electronic coworking environment got the opportunity to self-control, self-education and obtain a qualitatively new result of educational activity and reflection [15].

All members of the remote group have the opportunity to discuss the results of each of the team members, which increases the efficiency of the implementation of one project, divided into separate sections due to the synergistic effect. Coworking participants are open not only for professional, but also for personal communication, which ensures the formation of a comfortable psychological climate. Heads of structural divisions of educational organizations can actively participate in the review and defense of term papers in an electronic coworking environment, which significantly increases the practical focus and effectiveness of training. Research at the Moscow State Pedagogical University is aimed at finding new learning technologies in the system of undergraduate and graduate programs [16, 17]. Our study revealed the advantages of an educational coworking environment: it proved the possibility of minimizing time and economic resources, leads to the expansion of business partnerships, creates a comfortable educational atmosphere, which is directly related to the quality of education.

IV. CONCLUSION

The study made it possible to come to the following conclusion: the introduction of models of distance technologies in teaching students and undergraduates based on the Moodle system in the form of a coworking environment is a powerful innovative resource that allows you to reach a new level of modernization in the system of teaching staff training.

In the course of the study, the importance of electronic coworking was theoretically substantiated, concretized, tested and experimentally proven. The creation of a virtual cluster can provide higher education with an innovative and high-quality product for the introduction of educational services in a new format. As a conclusion, we predict the expansion of the industry of coworking spaces and see the need to continue scientific research in this direction.

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NOVI METODOLOŠKI PRISTUPI RADU SA STUDENTIMA U USLOVIMA DIGITALIZACIJE

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Sažetak: *Problem pronalaženja novih pristupa organizaciji treninga postao je posebno važan u vremenima digitalnih turbulencija. Danas, tokom pandemije koronovirusa, postoji prelazak sa uspostavljenih tradicionalnih tehnologija organizovanja obuke na široku upotrebu digitalnih tehnologija u sistemu mrežnog učenja, koji je obuhvatio čitav svijet. Svrha istraživanja je potkrijepiti, razviti i testirati model elektroničkog coworking okruženja u sustavu visokog pedagoškog obrazovanja. Istovremeno, coworking okruženje se smatra obrazovnim virtualnim klasterom. Takva osnovna platforma je obrazovni sadržaj koji uključuje sve obrazovne proizvode. Za rješavanje zadataka koristili smo se istraživačkim metodama: dizajn i modeliranje; proučavanje proizvoda coworking okruženja, razgovori u chatovima, upitnici; matematičke metode obrade. Prezentirani rezultati istraživanja otkrili su prednosti coworking okruženja: uspješna socijalizacija, minimalizacija vremena i ekonomskih resursa, širenje poslovnih partnerstava, uzajamna pomoć i ugodna atmosfera. Analiza studija o kriteriju zajedničke produktivnosti otkrila je povećanje mobilnosti učenika, porast indeksa zadovoljstva i efikasnosti komunikacije. Testiranje modela e-coworkinga dokazuje njegove prednosti i izglede za primenu u sistemu visokog pedagoškog obrazovanja. Sprovedeno istraživanje omogućilo nam je da dođemo do sljedećeg zaključka: uvođenje modela udaljenih tehnologija u obuku studenata i studenata osnovnih studija zasnovanih na Moodle sistemu u obliku coworking okruženja moćan je inovativni resurs. Predviđamo širenje industrije coworking prostora i vidimo potrebu za nastavkom naučnog razvoja u ovom pravcu.*

Ključne riječi: *digitalizacija, inovativne tehnologije, coworking okruženje; elektronički coworking*