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ONLINE COURSE ARCHITECTURE AND IMPLEMENTATION: ISSUES OF PROFESSIONAL AND SOCIAL INTERACTION

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Abstract

The central problem of this research is professional and social communication within the framework of digital education. In particular, we consider the effectiveness of an online course created on the Moodle platform, its resources and elements. Within the general problem we set the aim to reveal the communicative potential of the online course, and its individual resources and elements, in order to improve the effectiveness of the educational process. This research is the summary of a large amount of work during the pre-pandemic and intra-pandemic periods covering about eight years (2013-2020). This allowed us to obtain the required research material and consider the following issues: online course in the system of digital learning, its place and specificity; the structure of online course, its resources, elements and features of building communication; active and passive communication under the conditions of online learning; online course support as a condition for professional and social interaction. To implement these tasks, we developed an integrated approach using the following methods: empiric method, analytical comparison, experiment, observation, questionnaire, activity approach and synthesis. This allowed us to identify the purpose and true meaning of online course which are rather to create a communication platform than transmit knowledge. So, we consider the online course as an active element of learning environment. The research proves a scientific hypothesis about the determining role of a person in the context of e-learning which ensures its effectiveness and success.

Keywords: Digital education, distance learning, online course, social interaction

1. Introduction

Digital learning is one of the most discussed problems of modern pedagogy. Till 2020 the digitalization of education was considered as an alternative to the traditional methods of contact learning. Despite the rapid rate of the development of commercial educational sector (online schools, centers for distance learning, and others) as well as ideas and objectives declared in the *Education* National Project (2019-2024), the digital education has developed very slowly, demonstrating actual results only in particular universities and other educational institutions.

The pandemic 2020 became a watershed for educational institutions which had to function in the context of the only available remote format, totally using information – communication technologies. This became a challenge for teachers whose level of mastering technical means of education was often lower than the required one. Dhurumraj et al. (2020) profoundly studied the problem, their results are presented in the detailed article *Broadening educational pathways to STEM education through online teaching and learning during Covid-19: Teachers' perspectives* (2020). Particularly, the authors analyzed the process of teachers entering the space of e-education, revealing a number of difficulties: "These challenges include prohibitive data costs, amount of time taken to create presentations, lack of professional support needed to navigate the virtual digital platforms and technical difficulties experienced with the utilisation of ICT tools" (Dhurumraj et al., 2020, p. 1064). At the same time, it is obvious that the process of education digitalization is irreversible and highly demanded. In the same article we read: "There is a need to enhance teachers' technological knowledge as key agents of educational change, to create innovative opportunities to maximize the effectiveness of instruction on virtual digital platforms" (Dhurumraj et al., 2020, p. 1064).

2. Problem Statement

The central problem of this research is professional and social communication within the frame of digital education. In particular, we consider the effectiveness of an online course created on the Moodle platform, its resources and elements. Our task was to summarize the experience of working on the Moodle platform, as well as of the practice of creating and supporting author's online courses. Analysis of world experience in digital pedagogy was of great interest to us. Moreover, the emphasis on the problem of communication is especially important for remote learning, taking into account the ongoing pandemic.

Among the issues of e-education the following ones are actively discussed: motivation for learning through e-platforms (Braxton, 2020; Kaufmann & Buckner, 2019), use of online platforms and online courses in general (de Jong et al., 2020) and vocational education (Pajk et al., 2021; Vickers, 2020), transition to online learning in the context of the pandemic and comprehension of results of this process (Dhurumraj et al., 2020; Mnguni & Mokiwa, 2020). Within the framework of our topic we found the experience of our foreign colleagues in the field of creating online courses, considering the demand of students, both adults and children, for communication, to be especially significant (Baldwin et al., 2018; Chen et al., 2018; Hubard, 2020; Meikleham & Hugo, 2020).

Our interest in the problem of professional and social interaction was conditioned by the necessary adaptation of learning materials and didactic assignments to the new working context. In this case, the traditional model implying that the teacher is a transmitter of knowledge and experience needs to be fundamentally revised, since e-system, that is e-learning, becomes an integrated part of education. Respectively, under the conditions of digital education, non-verbal communication is largely supplanted by verbal one, the oral communication is supplanted by screen one, and the prevailing emotional component of perception is replaced by a rational one.

3. Research Questions

This research summarizes a large amount of work carried out during the pre-pandemic and intra-pandemic periods, covering about eight years (2013-2020). During this time the authors developed several online courses: Foreign Language for Undergraduates (2013), History of Architecture and Art (2016), History of Fine Arts (2017), Contemporary Architecture and Design (2021). They were maintained at several sites: the Kosygin State University of Russia, Ryazan State Radio Engineering University named after V.F. Utkin, Saint Petersburg State University, Moscow Polytechnic University. Territorial, social and thematic variety of conditions of implementing the online courses allowed us to obtain required research material and consider it in the light of the following issues:

1) the online course in digital learning, its place and specificity;

2) structure of the online course, its resources, elements, and features of building communication;

3) passive and active communication under the conditions of online learning;

4) support of the online course as a condition of professional and social interaction.

4. Purpose of the Study

Within the general problem we set the aim to reveal the communicative potential of the online course and its individual resources and elements to improve the effectiveness of the educational process. So, we consider several aspects composing the research basis: the architecture of the online course, its informative and didactic content, means of communication within the online course. This allowed us to reveal the purpose and true meaning of the online course which are rather the creation of a communication platform than the transmission of knowledge. Thus, we consider the online course as an active element of the educational environment.

The close attitude was expressed by Sally J. Baldwin: "Engagement, a critical aspect of online course design, occurs when students are motivated to learn materials and skills, demonstrate learning, interact with others, and become excited or engrossed in the learning and/or interaction. Developing engagement within a course – through exchanges between learners, the content, and instructor – results in a successful and satisfying learning experience" (Baldwin, 2019, 198). This is close to one of the methods within the traditional contact learning, namely, a project method, as well as the method of content and language integrated learning (clil) (Kulikova & Yakushkina, 2019; Varakina et al., 2021). STEM-education based on the principles of inter-disciplinarity and integration has similar tasks alongside with high effectiveness.

5. Research Methods

The difficulty of the problem set, a variety of tasks and aspects of the research made us develop a system of methods aimed at solving tasks in particular as well as in general. We used an empirical method needed to collect data, form content, which serves the powerful basis for analytical processing of material.

Of great importance was the method of analytical comparison which allowed us to comprehend the resource base of the Moodle platform from the point of view of the problem of social interaction. Juxtaposition of individual elements of the platform, their possibilities, places in the general course architecture became the foundation for correct construction of the e-product in terms of its performance.

The research results obtained on the basis of the empiric and comparative analytical methods became the foundation for an experiment which consisted in the development of an online course, taking into account our concept of an online course as an active element of educational environment. At the time of testing, the course the most effective were the methods of observation and questionnaire which allowed us to correct settings and individual elements of the course directly during its implementation. At this stage, the research interest was excited by the fact that the main motive of correction was not only external observation, but also the active involvement of students in the process of the online course improvement, actually, its creation. Thus, we used an activity approach which allowed us not only to improve our e-product, but establish social interaction with students.

At the final stage, we applied the method of synthesis, due to which all results of theoretical research, data on the development of the online course, its testing and feedback were summarized. Thanks to the correctly posed aim, formulated tasks, and based on the practical results in creating the electronic educational product, we could obtain significant results and develop a specific algorithm for constructing, filling and supporting the online course.

6. Findings

We comprehended the issue of the specifics of the online course and its place in digital learning in the context of modern trends in domestic and world pedagogy, taking into account government projects and the legislative framework of the Russian Federation in this area. Thus, in the *Education* National Project the main task of the national education system is clearly formulated as follows: "to ensure the global competitiveness of Russian education <...> upbringing of a harmoniously developed and socially responsible individual based on the spiritual and moral values of the peoples of the Russian Federation, historical and national-cultural traditions" (USI Administrator, 2020). This means that pedagogical technologies and technical aids of teaching are only tools of achieving the chief aim of upbringing new generations through the ideas of tradition and, at the same time, innovation.

The National Project defines several strategies for the future development of education: "modernization of vocational education by the way, among others, of introducing adaptive, practice-oriented and flexible educational programs"; "creation and introduction of a digital educational environment in educational institutions, as well as ensuring the implementation of digital transformation of the educational system" ; "ensuring the opportunity for children to receive a high quality general

education in the conditions meeting the modern requirements, regardless of the residence of a child, as well as ensuring the opportunity of professional development of teaching staff' (USI Administrator, 2020).

On this basis, the online course can present both a part of the educational program, and an autonomous educational product. Its advantage is that it can be realized remotely, so it is accessible in any place of Russia and the world, which makes it possible to get a high quality education without significant time and financial costs. Moreover, the online course learning can be synchronized with the main educational process or labor activity. Thanks to this, the online course makes it possible to form individual educational trajectories, taking into account personal traits and the labor market.

In a university the online course performs several functions. It can be an alternative to an elective discipline, a part or individual component of the Free Module of Educational Program (minor), or used in the system of additional education (the program of qualification improvement or the section of professional retraining). The universal nature of such a kind makes the online course advantageous in comparison with other pedagogical forms.

The issues related to the online course structure, the use of its resources and elements were considered based on two conditions: the course is created on the Moodle platform; the process of social interaction is a priority. We concluded that a clear structure of the course was necessary, as well as adaptation of teaching materials to visual perception, and an accessible and easy-to-understand navigation in the learning process. We developed a module algorithm for building an online course, including mandatory teaching and control sections, introduction and reference modules. Teaching sections transmit information, consolidate knowledge, form necessary skills through the variety of tasks. A control module is aimed at checking the degree of mastery of the acquired knowledge. An introduction module contains all information about a course: authors-developers, concept, problems, structure, forms of work, ways of communication, criteria of evaluation. A reference module contains additional information which facilitates understanding the content of a course (glossary), allows using external resources without limiting the teaching content (hyperlinks to personalities, individual phenomena, and issues).

The issue of communicative capabilities of resources and elements of the platform was considered separately. Thus, a lecture integrates all questions of the mastered material. In addition to the material repetition, there occurs a kind of a dialogue which resembles questions of the teacher in the classroom. Sometimes students clarified the meaning of such questions which testifies to the formation of verbal communication. In addition to lecture texts, all topics are accompanied by presentations and videos (up to 20 min.) which compensate for the lack of direct communication, and involve the systemic thinking, combining a text, schemes, and emotional speech. Self - control tests seem to exclude communication. However, within the course testing students were focused on a critical attitude to all materials, in order to reveal errors and improve the quality of the educational product. This motivated students to rather comprehend the test, searching for mistakes in it, than to mechanically memorize the algorithm of solving the test. In detail, the problem of control testing was studied by Kuprina (2017). In the course, practical tasks were checked using feedback in the form of comments, rating, possibility to improve the result.

Thus, communication was realized not only by external aids, such as forum, chat, message, but also by internal ones built in the "body" of the course. Here, one more problem of our research arises:

passive and active communication under the conditions of online learning. Passive communication can be realized by means of teaching materials which are aimed at rather thinking and understanding than traditional reading. A lecture text can be transformed in detailed notes with a distinct structure and emphasized effectiveness. A presentation not only illustrates the lecture but summarizes large information layers, using the language of tables and schemes. A video demonstrates a lively good speech, as well as synthesizes a visual image and thinking, being a combination of speech formulas with an emotional presentation.

Active communication involves forms of feedback such as a question-answer dialogue, discussion on forum and in chat, completing an assignment with receiving an evaluation, a joint assignment with a mutual evaluation. A separate category is the course evaluation through feedback. In our case, this was realized by filling out a questionnaire by students after completing the online course. This allows seeing pros and cons of the created e-product through the eyes of a student, as well as establishing trustful relationships outside the formal framework. Something of the kind one can find in foreign studies (Jo et al, 2020; Meikleham & Hugo, 2020).

For our research, of great importance was the issue of supporting an online course. Support is an important condition for professional and social interaction while mastering a course. It manifests itself through a usual feedback: answers to messages, assignment checking, or correction of particular course components (e.g., settings). In this case, it is important to correctly focus students on ways of communication and regulations, having determined the time range and the form of communication. The effective alternative can be an appointed moderator which is able to resolve technical questions, or re-send them to a person capable to resolve them rapidly and properly.

7. Conclusion

Summarizing the research results of the problem of professional and social communication within the framework of digital education, we must note that technologies cannot abolish the role of a person, curator, teacher. On the contrary, the personality of both a teacher and a student is a determining factor of successful educational process regardless of the technologies applied. In each particular case, an online course acquires individual features which are determined not only and not so much by its topic but largely by personal traits of a developer, taking into account the intended audience.

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