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TRADITIONAL VS ONLINE EDUCATION IN THE MARITIME TRAINING SYSTEM UNDER COVID-19 PANDEMIC: COMPARATIVE ANALYSIS

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Abstract. The correlation between traditional and MOODLE learning management system usage in the educational process of the maritime higher education institutions has been studied in the article. The need to find new digital tools was due to the current state of the educational system, which should become open to new trends, and exacerbated by the conditions of the COVID-19 pandemic.

Comparative analysis was chosen as the main research tool, which made it possible to conduct a comparative analysis of online and offline modes of implementation of the educational process in higher maritime educational institutions, as well as to determine the main advantages and disadvantages of the LMS MOODLE electronic platform.

The collection of data was carried out using a Google questionnaire. The respondents had to answer 9 questions. The survey was conducted among students of the Maritime Academy of two age categories – from 18 to 30 years old and from 31 to 45 years old.

Analysis of the questionnaire data allows us to conclude that students of the first age category have more developed digital competencies (87%) and easily switched to distance learning using the LMS MOODLE platform; however, in the second age category, more than 60% had no difficulties with online learning. In general, for applicants for higher education, working on the LMS MOODLE electronic platform has its advantages and may be one of the methodological tools for the implementation of the educational process. For applicants for higher maritime education, it is convenient both in terms of timing and availability for education. The weak side of the platform is the lack of opportunity for teachers to independently organize (without the technical support of the platform administrator) video lessons on LMS MOODLE in real time, which is one of the priority tasks for improving the educational process online.

The next step in the development of online learning opportunities is to create opportunities for teachers to independently create online rooms for lectures and practical exercises in real time, as well as expand the possibilities for connecting

cloud simulators to practice the practical skills and abilities of students of higher maritime educational institutions.

Keywords: online education; blended education; LMS MOODLE electronic platform; COVID-19; digitalization of education

Introduction

Today the educational process of higher education, including the maritime one, is facing the new conditions of reality. This reality is determined by the situation with the COVID-19 pandemic, which led to a more intensive search for new digital methodological tools to ensure the quality functioning of the education system as a whole.

The problem of digitalization of the educational process is poorly studied, and also difficult for mass implementation in the educational process. We would like to share the experience of introducing into the educational process of the Kherson State Maritime Academy (KSMA) work on the electronic platform LMS MOODLE, as a new methodological tool.

The Academy has been using MOODLE since 2014. Therefore, during the pandemic, the educational process at the KSMA did not suffer and was implemented in full, up to the defense of diploma theses and the passing of state exams. At the same time, students could be not only on the territory of Ukraine, but also on ships in different parts of the world.

The issues of introducing digital technologies into the educational process of higher education have been studied by many scientists, for example, W. Crittenden, I. Biel, W. Lovely, M. Pinto, C. Leite, N. Stoyanets, H. Zhao, G. Li, S. Voloshynov, H. Popova, M. Sherman (Crittenden et al. 2019; Pinto et al. 2020; Stoyanets et al. 2020; Popova et al. 2018; Voloshynov et al.).

Blended education and its use in the training of maritime professionals was reviewed by S. Galić, Z. Lušić and T. Stanivuk, Q. Li, Y. Jiang (Galić et al. 2020; Li et al. 2017).

Features of distance learning in higher education in the context of the COVID-19 pandemic were studied by S. Berezhna, I. Prokopenko, S. Brammer, T. Clark, Owen P. Hall, and others (Berezhna et al. 2020; Brammer et al. 2020; Owen 2020).

The objective of the research is to analyze how the students of different age groups adapted to the online education by LMS MOODLE and to compare their results based on the online and offline modes.

Research methods

For a more efficient study, we chose a comparative analysis. The generally accepted definition of comparative analysis is the following: “Comparative analysis is a comparative research method widely used in social and humanitarian disciplines. The general theory and methodology of comparative analysis is

being developed within the framework of philosophical comparative studies"[1)].

The use of this method in research is conditioned by the functional potential possessed by comparative analysis. So, the epistemological function made it possible to obtain qualitatively new information about the subject of research and form new knowledge about it. The methodological function contributed to the transformation of the obtained comparison results into means of solving practical problems. In fact, this expands the range of ways and methods for solving everyday educational problems in the field of higher maritime education.

For the experiment, two groups of 15 people were selected:

– the first group – aged from 18 to 30 years old;

– the second group – aged from 31 to 45 years old (correspondence course).

A questionnaire was developed for collecting information; for this, the GOOGLE form template was used (Fig. 1).

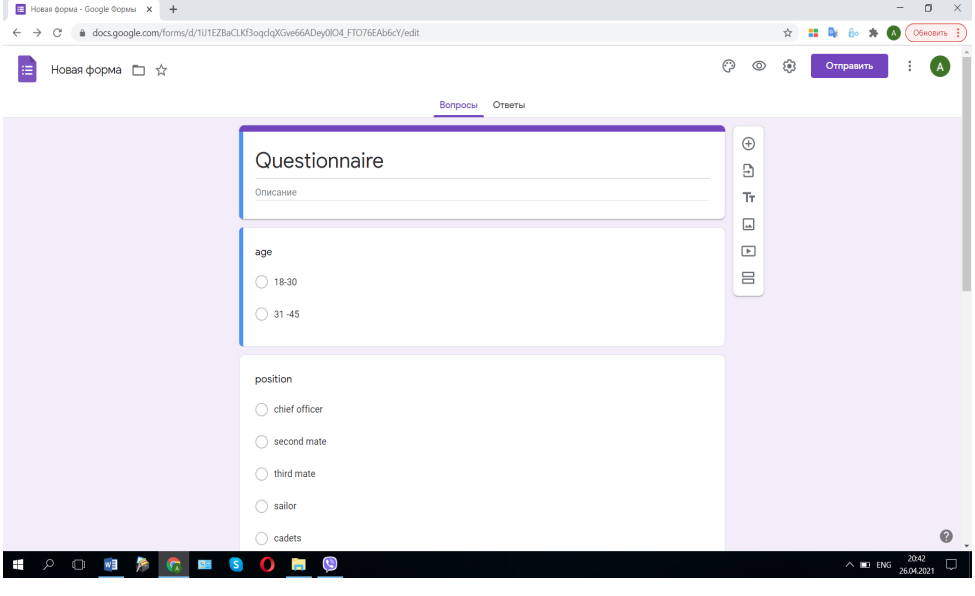

Figure 1. Questionnaire "Comparison of the offline vs online educational process"

The questionnaire consisted of the following questions:

1) age (18 – 30; 31 – 45);

2) position (senior assistant; second assistant; third assistant; cadets);

3) the ability to use modern technologies (self-assessment in points: 1 – 4; 5 – 8; 9 – 12);

4) evaluation of the work of the electronic platform LMS MOODLE in the educational process (score in points: 1 – 4; 5 – 8; 9 – 12);

5) the educational process is of higher quality online or offline (online; offline);

6) ease of use on the LMS MOODLE electronic platform (timing, availability) (score in points: 1 – 4; 5 – 8; 9 – 12);

7) convenience of working in offline mode (timing, availability) (score in points: 1 – 4; 5 – 8; 9 – 12);

8) how do you assess the learning outcomes online (score in points: 1 – 4; 5 – 8; 9 – 12);

9) how do you assess the learning outcomes in offline mode (score in points: 1 – 4; 5 – 8; 9 – 12).

Results

Gathering groups for the study, we tried to make them equal, in order to obtain better verified results, so the first age group from 18 to 30 years old was 15 people and the second age group from 31 to 45 also consisted of 15 people.

The question of the position held was introduced in order to understand how much a person is involved in professional activities.

The results showed the following that the first age group consisted of: 2 cadets; 13 minders (Fig. 2).

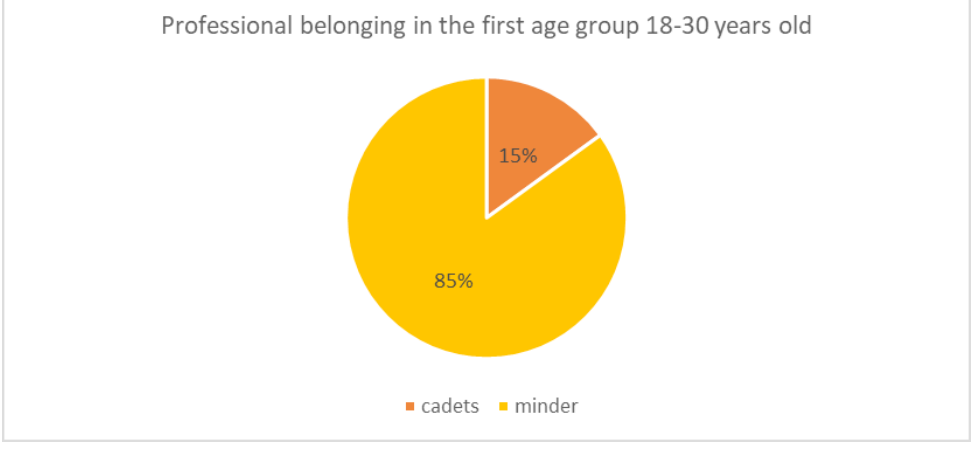

Figure 2. "Professional Reference – 1st Group"

The second group was more polyphonic in their professional activities: 3 minders; 1 third assistant; 2 second assistants; 9 senior assistants (Fig. 3).

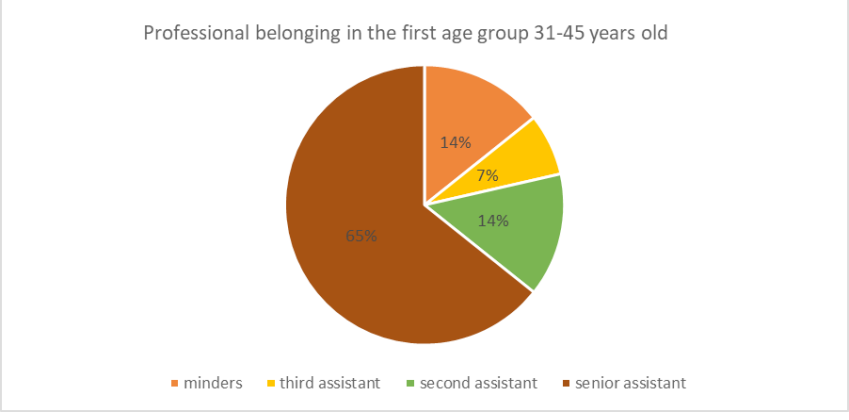

Figure 3. "Professional Reference – 2nd Group"

The results on the third question related to the skills and abilities of the user of modern technologies were as follows: in the first group, self-assessment of skills was 3 people within 5 – 8 points; 12 people – 9 – 12 points; in the second group: 4 people – 1 – 4; 9 people – 5 – 8, and 2 people 9 – 12 points (Fig. 4).

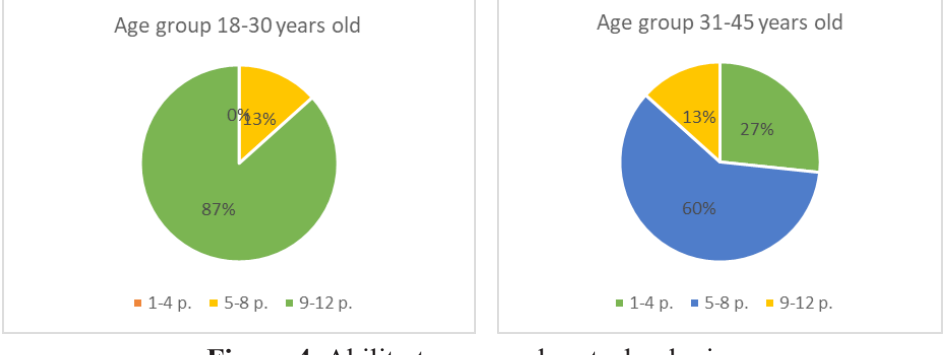

Figure 4. Ability to use modern technologies
(self-assessment in points: 1 – 4; 5 – 8; 9 – 12)

The results of the survey on the assessment of work on the LMS MOODLE platform in the course of study were approximately the same. So, the first group rated (18 – 30 years old) 4 people – 5 – 8; 11 people – 9 – 12 points; the second group (31 – 45 years old) – 3 people 5 – 8 points and 12 people – 9 – 12 points (Fig. 5).

As a matter of fact, the archived results stated that the respondents have rated highly the work on the e-platform, which proves the positive results of the transformation of the educational process into on-line mode.

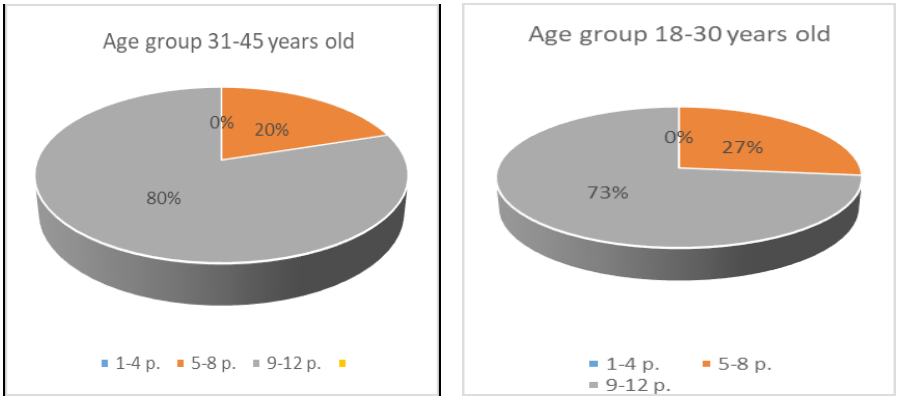

Figure 5. Evaluation of the work of the electronic platform LMS MOODL in the educational process (in points: 1 – 4; 5 – 8; 9 – 12)

Particularly important was the percentage of the results of the survey on the assessment of the educational process in online and offline modes. The first group is more inclined to use the online mode, since this was confirmed by 12 people, and the second group is more inclined to offline education: 14 people (Fig. 6).

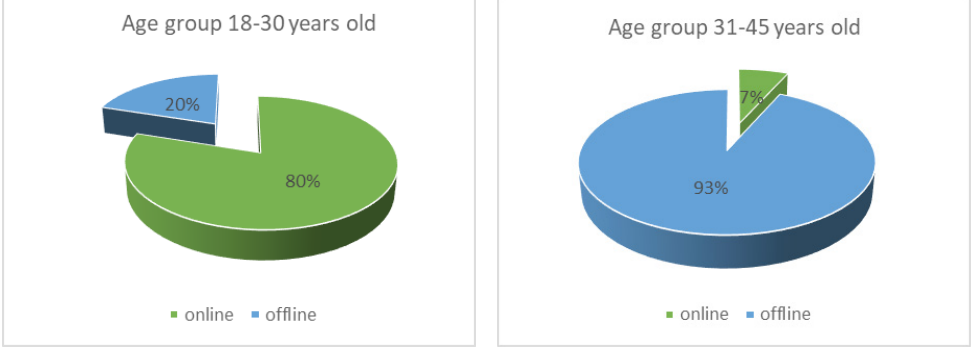

Figure 6. The educational process is better online or offline (online; offline)

Respondents in Group 1 are more comfortable with online study. It has been justified by the fact technologies are widely used in the environment of human activities. At the same time, the respondents of the group 2, remained supporters of the traditional mode of study, with the student-centered learning.

The next two questions concerned the convenience of conducting the educational process at a maritime educational institution. On this issue, both groups agreed that

the online mode is more convenient and flexible, it can be available at any time, in any territory, which, of course, cannot help but appeal to the representatives of this profession, as many of them do not have much time, since limited to flights. Online education, in this regard, received 100 percent support in both groups.

The last two questions were related to the quality of educational services that the listener receives during online and offline education. Thus, online education was rated in the first group by 1-4 – 4 people; 5-8 – 10 people and 9-12 – 1 person. In the second group: 1-4 – 8 people; 5-8 – 7 people (Fig. 7). At that time, the results on the quality of offline educational services in the first group were rated 1-4 – 0 people; 5-8 – 11 people and 9-12 – 4 people; in the second group 1-4 – 0 people; 5-8 – 6 people; 1-12 – 9 people (Fig. 8).

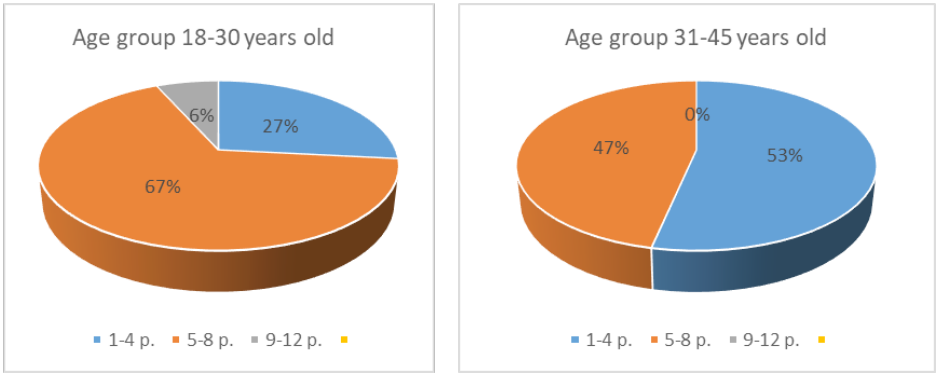

Figure 7. Evaluation of learning outcomes online
(score in points: 1 – 4; 5 – 8; 9 – 12)

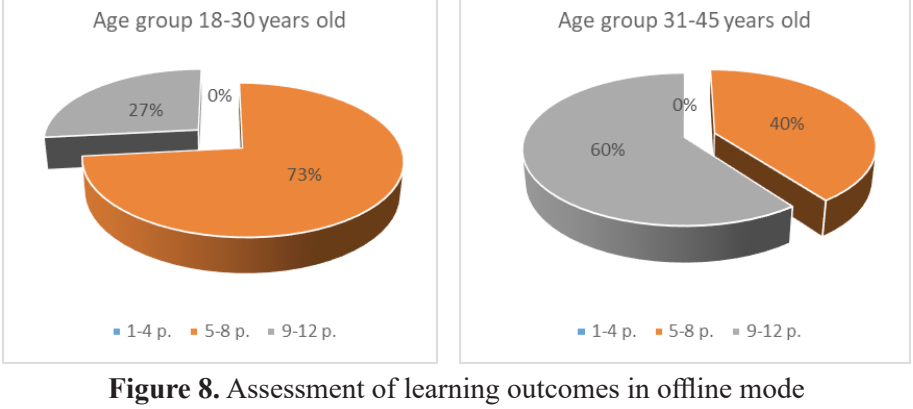

Figure 8. Assessment of learning outcomes in offline mode
(score in points: 1 – 4; 5 – 8; 9 – 12)

Discussion

In the course of our research, we came to the following conclusions:

1. The younger the learners, the more developed their digital competencies, as evidenced by the results shown in Fig. 4. In the first group (18 – 30 years old), the number of students with good command of modern technologies is 87%, and in the second group (31 – 45 years old) only 60%.

Comparing the results, as a conclusion: in order to improve the work of students on the electronic platform LMS MOODLE and make it more comfortable, it is necessary to develop a course to improve the digital competencies of students.

2. The work of the electronic platform LMS MOODLE in the educational process (Fig. 5) was assessed by both groups approximately the same. So, in the first group the highest score was given by 73%, and the second group – 80%, the average level, respectively – 27% and 20%, which indicates a fairly high quality of the platform. The main disadvantage of the platform is the impossibility of conducting a video lesson in real time, therefore, to improve the work, there is a need to expand the platform's functions in this direction. This is the main task today for improving the work on the platform.

3. The study groups completely disagreed on the issue of assessing the quality of the educational process in online and offline modes. Thus, 80% of students of the first group consider the online mode in the educational process to be of higher quality, and 93% of the representatives of the second group consider the offline mode to be of higher quality (Fig. 6). These bipolar views are driven by students' digital competencies and willingness to work independently.

4. 100% support was received by the electronic platform with regard to the usability, especially timing and availability. As we noted above, this is due to the specifics of the professional development of future specialists in sea and river transport. Therefore, the necessity to use the e-platform should definitely be further cultivated into the educational process as a value added to the students to continue study during their voyage.

5. In assessing the quality of educational services received in online and offline modes, the priority place was taken by the offline mode. Discussing the results of the study, the students explained their choice of priority by the fact that in offline mode there is a teacher with whom you can discuss, there is “live” communication, you can immediately get feedback to a question of interest.

Thus, the work on the electronic platform LMS MOODLE has a number of advantages and can claim to be one of the methodological tools for the implementation of the educational process in higher maritime educational institutions. It is convenient both in timing and accessibility for education.

A weak point of the e-platform is the difficulty of training certain practical skills based on the specific maritime simulator. Furthermore, it is planned to introduce the embedding of the VR-simulators and to synchronize them with LMS MOODLE.

It will allow training of the full cycle of activities necessary for each definite professional situation and forming practical skills during online education.

Conclusions

As a matter of fact, after the comparison of the 2 modes of study process: online and offline, it should be concluded that they are complementary to each other but not substitutive in the educational system, especially for the maritime students. The usage of the possibilities of the e-platform provides the students with more flexible learning, higher quality of self-training, and does not interrupt their education under the pandemic restrictions.

NOTES

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