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INTERUNIVERSITY ONLINE COURSES AS POSSIBLE APPROACH TO IMPROVE TEACHING DURING CRISIS: A UKRAINIAN CASE STUDY

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Abstract. The war launched by Russia has created new challenges for universities, including massive student migration abroad and massive displacement of students within Ukraine from the frontline areas. Many students lost access to quality education or had their studies interrupted by the war. Recognizing these problems, universities are trying to find different solutions. One such approach may be to introduce inter-university online courses that will be recognized by partner universities. In this case study, we analyze the effectiveness of inter-university online courses as an approach to restoring education for students severely affected by the war and as a way to maintain the quality of education in small groups at universities. The online course "Integrated Life Science Course" was taken for analysis, which was taught both to biology students from different universities in Ukraine within the framework of the educational project supported by German Academic Exchange Service (DAAD). Using statistics on course registration and attendance, as well as interview methodology, we assessed students' motivation to participate in this online course, course satisfaction, and learning outcomes, and identified shortcomings and pitfalls to avoid in similar courses. The survey and the results of the final test show that the main motivator for students to register and study at the course was the desire to gain new knowledge for further professional growth. A scholarship was also an important argument to enroll in the course; however, it did not impact the motivation of students to study. The fraction of students that successfully passed the final exam (~70%) was equal in the cohorts that had and had not been awarded scholarships. Thus, the scholarship was not a motivator to complete the course and successfully pass the exam to receive the certificate. Therefore, in order for such courses to be productive and effective, it is necessary to emphasize student motivation during selecting procedure.

Keywords*:* online learning, motivation, higher education, assessment, small academic group, war.

1. INTRODUCTION

The large-scale war started in 2022 has seriously disrupted university education in Ukraine. It not only forced students and teachers to leave their homes and destroyed the infrastructure but also led to a lot of damage that is less visible. The latter includes: 1) disruption of the educational process and consequent reduction in the quality of education; 2) decrease in the number of students willing to study in Ukrainian universities due to both student emigration and the

possibility of studying abroad. Thus, the war has exacerbated the problem that existed before, namely the problem of small groups in unpopular, non-prestigious "difficult" specialties at universities. Recognizing these problems, universities are trying to find different approaches to solving them. One such approach may be to introduce inter-university online courses that will be recognized by partner universities. In this study, we analyze an example of the implementation of such a course for students-biologists in the framework of education project supported by German Academic Exchange Service (DAAD) in the framework program "Ukraine digital: Ensuring academic success in times of crisis".

2. THEORETICAL BACKGROUND

Introducing online learning (OL) is one of the ways to address the first educational problem mentioned above. Nowadays, OL is a global trend in education (Liang & Chen, 2012; Blyznyuk et al., 2021; Malimon et al., 2022). It has become an integral part of both modern life and education. Its significant advantage is that it provides an opportunity to study for a large number of students at once, regardless of their location (Duszenko et al., 2022). Online learning makes it easier for students who have been physically injured or have disabilities to participate in the learning process. In addition, OL is safer in times of war and allow to keep learning for students displaced due to different emergencies as the danger of missile and artillery shelling. As a rule, online learning is much cheaper than traditional education due to lower costs for travel, accommodation and organization of the actual educational process (Malimon et al., 2022; Dziubanovskyi et al., 2020). Its advantages also include high accessibility, flexibility, interactivity, and technology (Liang & Chen, 2012; Blyznyuk et al., 2021; Duszenko et al., 2022).

Despite its progressive nature, OL has a number of drawbacks (Liang & Chen, 2012; Duszenko et al., 2022). Therefore, it is not equally effective for all specialties. Recently, there have been more and more opponents of distance education in the medical field (Duszenko et al., 2022). This issue is especially acute for surgical students. The opponents OL believe that it is impossible to learn practical skills, which are the main component of training future doctors, in this way (Dziubanovskyi et al., 2020). If we develop the topic of medical education, and not higher education in general, we must agree that online learning cannot fully replace clinical training. At the same time, it should be noted that in extreme conditions, such as war or pandemic, distance learning technologies can also be used in medical institutions. In particular, artificial intelligence, augmented reality (AR) and virtual reality (VR) technologies have made a revolutionary breakthrough in online education. Interactive models, reconstructions of organs, reproduction of information on the screen in 3D projection, simulators based on VR technologies can already be used to train doctors and more (Al-Balas et al., 2022).

Summarizing the above, we can say that the challenges raised in 2022 during the full-scale Russian invasion of Ukraine were largely met almost immediately by educational institutions, thanks to the previous experience with online learning of Ukrainian students and teachers during the Covid 19 pandemic (Blyznyuk et al., 2021). Therefore, today and in the future, OL allows to some extent to compensate for the forced interruptions of the educational process during the war in those universities where the participants of the educational process are in relative safety.

The transition to online learning itself was not a big challenge for universities, the challenge was to ensure a high level of quality of online learning. It has become a challenge for teachers to teach under fire or as internally displaced persons, where you think about meeting basic needs first and foremost. Another problem is the mass migration of students not only within Ukraine but also abroad, and student migration continues to grow significantly.

As regards to last year, the peak of student migration occurred in March 2022 (Horna & Pron,

2022). This is not surprising, because between 24 February and 4 May 2022, 1522 educational institutions were damaged in Ukraine, including 35 universities (34 damaged and one destroyed) (Horna & Pron, 2022). In terms of quantitative indicators, educational institutions in the Donetsk, Kharkiv, Luhansk, Mykolaiv, Chernihiv and Kyiv regions were most affected (Horna & Pron, 2022).

Thus, the war exacerbated the problem that had existed before for small universities and certain specialized programs as the problem of 'small academic groups' (2-10 students each). This problem became more acute last year. Here is some statistics. According to the Unified State Electronic Database on Education of Ukraine, a total of 902 applications were submitted for the specialty of chemistry at all universities of Ukraine. However, given that applicants were eligible to apply for at least 5 specialties, only 322 applicants were recommended for admission with a total number of 1278 places. The situation is similar for other unpopular specialties. This poses a threat to the growth of small academic groups at universities. Small academic group are a big problem for universities, because the small groups of students increase the state and university spending on student education. Since universities do not risk raising tuition prices significantly, they save money on teachers who are not paid in full for teaching small group classes. As a result, the motivation of teachers decreases and the quality of education decreases. The small size of the groups also limits the students' free choice of subjects to learn (Ligidov et al., 2021).

The war imposed on Ukraine by the russian dictatorial regime has forced a fresh look at many aspects, including the organization of educational space, particularly through the prism of opportunities to avoid small groups. In particular, serious management decisions need to be taken by university leaders to reduce the number of understaffed groups. According to researchers and experts, "reasonable unification", both in the name of disciplines and in the ratio of types of classes, will allow in many cases, especially in the study of general education disciplines, to combine small groups into large ones. This will help to ensure that the normal organization of the curriculum (Ligidov et al., 2021). Another possible is collaboration between universities in creating mutual or interuniversity courses. Students would then be able to choose not only from courses offered by their own university, but also from a number of inter-university courses. In this case, students get the opportunity to take a high-quality course that cannot be taught at their university. The latter approach is fundamentally new for Ukrainian students; therefore, it also involves a number of problems on the way to its implementation, such as: bureaucracy, recognition courses, salary of teachers, normalization of examination approach etc. There may also be a problem with motivation discipline that can result in low passing rate. In this work we present a case study of an interuniversity course “Integrated course in life sciences” which was given to Ukrainian students of biologic specialty from different universities of Ukraine. The core of course was the team of teachers of Vasyl Stefanyk Precarpathian university, but also teachers from other Ukrainian Universities and German institutions are employed. The purpose of this case study was to analyze student motivation, attendance statistics, exam results, and learning outcomes of the course to identify the strengths and weaknesses of the inter-university course to enable our experience to be replicated at other universities for wider implementation.

3. RESEARCH OBJECTIVE, METHODOLOGY AND DATA

3.1. Organization of interuniversity online course and selection procedure

In the study, we analyze the interest and effectiveness the interuniversity online course “Integrated course in life sciences” for biologists, which was held during September-December, 2023. The course includes biochemistry, physiology, molecular biology, biophysics and instrumental methods in biology and was organized as part of the program “Ukraine digital:

Ensuring academic success in times of crisis (2022)" [http://surl.li/gcivv] supported by German Academic Exchange Service (DAAD; German: Deutscher Akademischer Austauschdienst). The project was led by Tübingen University; however, the study program was designed by Ukrainian partner (Vasyl Stefanyk Precarpathian National University). The course was designed for bachelor's students of biological specialties, primarily from the frontline areas and partner universities. The partner universities in the project were Vasyl Stefanyk Precarpathian National University, Ivan Franko Lviv National University, Oles Honchar Dnipro National University, Kherson State University, Odessa I.I. Mechnikov National University, and V.N. Karazin Kharkiv National University. Since not only undergraduate students were interested in the course, two groups of students were formed: the main group of 90 undergraduate students who were allowed to apply for scholarships, and an additional group of so-called free listeners, who were allowed to visit lectures but not seminars and not eligible for applying for scholarships. The selection of students for the course was done by following criteria: (i) student's study program corresponds to the course scope (>95% of all students were studying biology, biochemistry, biophysics or biotechnology; (ii) social factors (priority was given to students from areas strongly affected by the war, ~65%); (iii) previous agreement of university to accept course certificate ('partner universities'), 81 out of 90 students. Most of the students were 2nd, 3d, or 4th year of study (37%, 34%, 27%, respectively)

The scholarships were awarded at the beginning of the course based on social factors (mainly to students who had to left their cities because of the war and to students living in the frontline territories of Ukraine) and did not take into account the final exam results or knowledge level of the students. Therefore, we can expect some bias in the performance of students with scholarships as their living and study conditions were in average less comfortable.

The integrated course included 52 lectures and 23 seminars (in total 150 h) and for practical works (seminars) students were divided into 3 groups based on the year of study.

3.2. Registration and exam statistics

The complete depersonalized dataset (330 entries) of the applications for the course, registration and provided scholarships was obtained from the course organizers. It contained student specialization, university, and year of study. Separately we obtained depersonalized dataset of final exam marks for each of 5 course disciplines with additional information of whether the student was provided with a scholarship.

3.3. Survey methodology

An anonymous survey was conducted among the students who attended the final course exam (68 answers). It was designed by the course organizers to evaluate the interest in the course and its relevance in war time. The student survey included questions about their motivation for participating in the course, their satisfaction with the course as a whole and its individual parts (disciplines), and the problems students faced most when attending the course. It also analyzed which course disciplines students found most difficult and most useful.

3.4. Collection of attendance statistics

The attendance statistics was provided by the course organization team. During part of the lectures, the students were asked to fill online form with their names and emails used during the registration. Several times during the course student were asked without prior notice to do 10-minutes formative tests to assess their knowledge obtained during previous lectures. The number

of students answered the test was used to complement the attendance statistics.

4. RESULTS AND DISCUSSION

4.1. Motivation of the students

Traditional university teaching possesses a developed set of methods to motivate students to study and to keep their interest till the end of the course (Kember et al., 2010; Steinmayr et al., 2019). Unlike traditional classroom settings at their own universities, interuniversity online courses require students to be more self-directed and disciplined in their approach to learning (Silenko & Kruk, 2022). Without motivation, students not only may struggle to engage with course material and complete assignments, but also even would not register to such a course for the first place. During the crisis times students encounter very variable living conditions that range from almost normal to really hard. Universities sometimes have no objective approaches to evaluate the personal situation of the students, especially in the case of cities close to the war zone or students who had to leave their cities due to the war. Therefore, we must admit that success of any new methodology that gives students more choice, including interuniversity online courses, during the crisis would mostly rely on the student motivation (Hartnett, 2016). Moreover, we must consider it in two aspects: (i) motivation of the students to enroll into such courses and (ii) motivation go through the whole course, that we would call 'study motivation' to avoid confusion. From the organizational point of view, it is more important to properly evaluate the study motivation, as the course efficacy depends on the number of students that successfully finished the course and acquired the required set of knowledge rather than on the number of students enrolled. Any good course requires personal interaction of students and teachers and, therefore, has a limited capacity. The motivation of the students to enroll to the course can be increased by many factors that include ones reflecting real interest of the student (quality of teachers, materials, previous knowledge) but also many factors not directly related to the interest to course (suggestions from university administration, advertisements, scholarships) (Harnett, 2016; Duszenko et al., 2022; Lobos et al., 2022). To maximize the effect of the courses it is very important for the organizers to get mainly self-motivated and interested students who would keep the till the course end and to distinguish them from students with high motivation for enrolment but low motivation to study.

Understanding the correlation between the different motivation parameters would be useful for design of the further selection procedures. The course we used as a case study in this work can serve as a good example for such evaluation. The course started in September 2022 and was advertised only three weeks before the registration. However, the number of students registered (330 applications) was much large than the planned course capacity (90 students). The organizers selected the main group of students based on the planned capacity and allowed other students to visit lectures but not seminars and pass exam. Out of ~240 potential 'free listeners' only 81 student agreed with the conditions (Fig 1a). Most likely such decrease of the interest was a result of combination of three factors: (i) the absence of full access to the course (namely practical work and personal contact with teachers), (ii) absence of the clear communication with course organizers about their status, and possibility to be evaluated and obtain course certificates, (iii) absence of possibility to obtain scholarship. The practical conclusion from this part of the analysis is that when organizing such inter-university courses, it is important (i) to be prepared to deal with number of applications significantly exceeding the course capacity (ii) have pre-arranged policies of course capacity extension, enrolling of students in additional groups or as free listeners (iii) clearly communicate to students those policies if they are proposed to join the course in additional group, namely regarding course exams and types of certificates.

The evaluate the role of scholarship on the student motivation not only to enroll for the course

but also to study we compared the performance of students with and without scholarships at the exam. 50 out of 90 students of the main group were entitled to significant scholarships based on social reasons (mainly to students from regions strongly affected by the war) with the only condition that they have to successfully accomplish the course. However, only 70% of students entitled to scholarships managed to pass the exam, 18% failed, and 12% of them even did not show up for it (Fig. 1b). These numbers are comparable with the numbers for students without scholarships (73%, 10%, 22%, respectively). It allows us to conclude that the **scholarships did not played a significant role in the motivation of the students to study during the course**, even though it likely strongly increase the motivation to enroll for it. We must admit that our conclusion could be biased by the fact that the course was taught at very specific conditions during war time and students with scholarships that are in average from more affected cities were in less suitable study conditions.

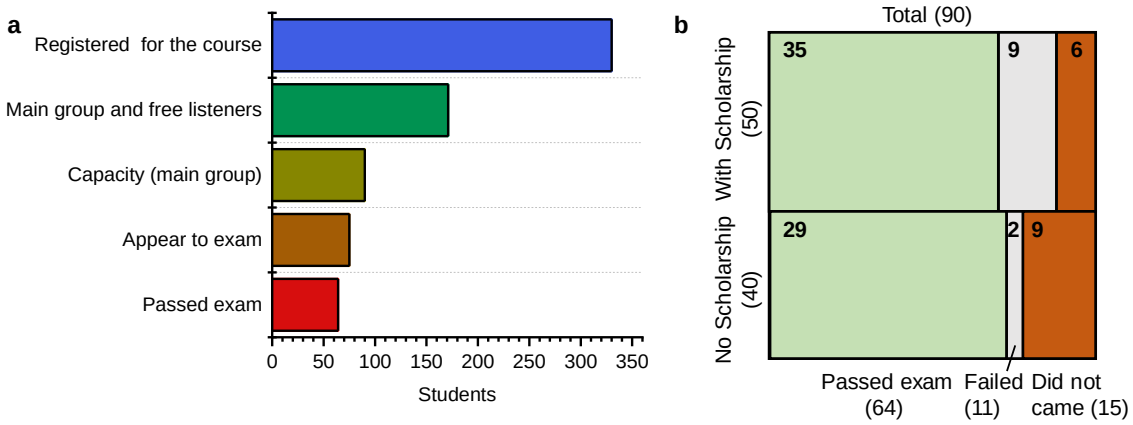

Fig. 1. (A) Comparison of number of students registered to the course, started to attend the course lectures (either as free listeners or the main group), fully subscribed to the course (main group), continued till the end exam, and successfully passed exam. ***(B)*** *Influence of the scholarship on the performance of the students*

To better understand what was the motivation to register to the course among the students who were motivated to finish it, we analyzed an anonymous survey among the students who were at the final course exam. In one of the questions the students were asked what outcome they expected from the course. They were provided with following options (in Ukrainian) and were able to check all relevant versions:

- Obtaining useful knowledge ("knowledge")
- Widening of my scope in the field of life sciences and the scientific work ("better understanding the field")
- Obtaining new contacts ("contacts")
- Course certificate will help during the selection procedure for master program outside Ukraine ("Certificate: Master abroad")
- Course certificate will help during the selection procedure for master program in Ukraine ("Certificate: Master Ukraine")
- Course certificate will help to register to summer schools and in other competitive applications ("Certificate: Other").

Almost all students answered that one of their motivations was to obtain and deepen their knowledge in biological disciplines and to better understand the field of life sciences (Fig. 2). About half of the students believe that the course certificate would help them during the selection procedure for a master program abroad and or in Ukraine. Only one third was expecting that the course certificate will help them in other competitive application. Very likely, most of the course students are not yet familiar with the possibilities of application for international student support

programs and summer schools and this should be accounted in the planning of further student courses.

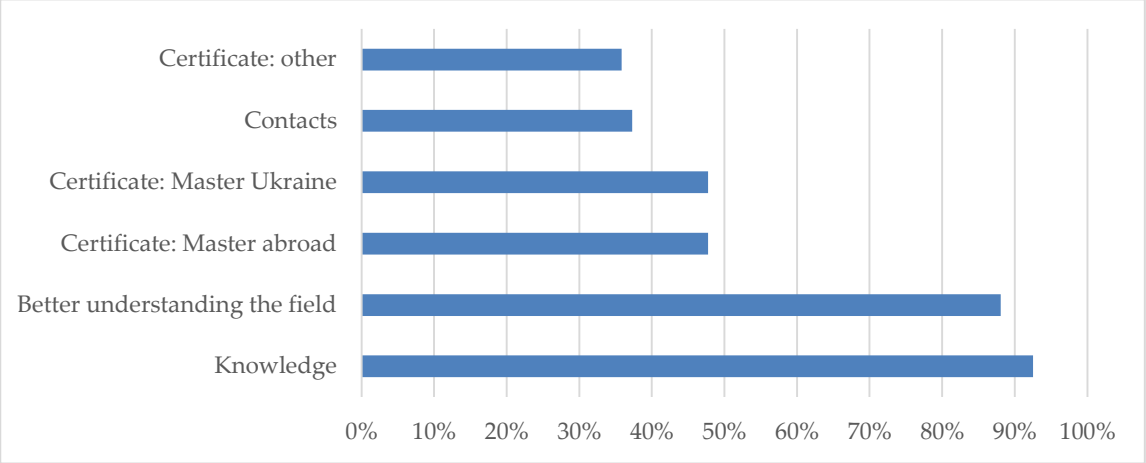

Fig. 2. Motivation of students to register to the course

The importance of personal contacts with teachers and students outside their own universities was underestimated by most of the students as only 37% of stated it. Based on the survey results we can conclude that proper description of the course certificate and possibilities that it opens can potentially increase the fraction of student highly motivated to finish the course among the applicants. Very likely, it would be important to design certificates in the way that will simplify the interaction between student and university where it would present it, namely hours, etc.

For the success of the course it is important not only to enroll highly motivated students, but to retain their motivation during the course also. Motivation can come from various sources, such as personal interest in the subject matter, a desire to acquire new skills or knowledge, or external factors such as career goals or a desire to meet academic requirements. When students are motivated, they are more likely to set achievable goals, manage their time effectively, and persist through challenges

To support student motivation in online courses, instructors can provide clear expectations and goals, create interactive and engaging course content, offer regular feedback and support, and foster a sense of community through online discussions and group work (Duszenko et al., 2022; Mendoza et al., 2023). Students can also take proactive steps in communicating with teachers to ask for clarification of unclear points and participate in discussions, expressing their own point of view on a particular topic or seeking a solution to a particular issue. It is also important for the teacher to get feedback from students to understand how accessible and interesting the material is. The most direct indication of the changes of the students' motivation during the course is the attendance statistics.

4.2. Attendance statistics

To estimate how students, accept the course and how their motivation was changing with time, we analyzed the lecture attendance statistics. The course was planned for 90 students. However, 81 more students were registered in additional group that was attending only lectures but had right to pass the exam ad to get certificate with amount of credits corresponding to lecture hours. This made the course audience significantly heterogeneous by the study experience and motivation. The attendance was monitored either informally (by number of people connected to the lecture) or by online form which each student had to fill during the lecture.

During the first lectures, the attendance was quite high, reaching about 150 students, that is about 85-90% of the total number of people in the main and additional groups. However, the

attendance decreased to the level of 90±10 students within first two weeks that roughly corresponds to the number of students in the main group (Fig. 3). This number remained approximately constant for 5 weeks, till middle of October 2022. After that, many Ukrainian cities started to encounter power and internet outages that strongly decreased the attendance, but as it this change was not related to the course performance or student motivation, it would not be discussed here.

The rapid decrease of the course attendance to some level that remained stable for prolonged period of time is likely the signature of missed expectations. First of all, each student when enrolling to the course was expecting particular level of the course and ones that find the course too simple or too hard just stopped the attendance. Second, the course was quite intense, about 16 hours a week during the first weeks, that could be beyond the expectation of many students, moreover the exact course schedule was announced only after the start of the curse that could also contribute to the misconception of the ability of students to attend the course.

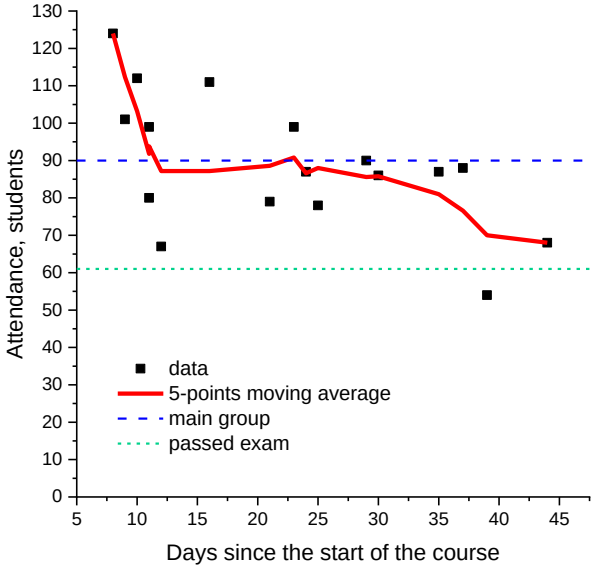

Fig 3. (A) Dynamics of the lecture attendance by students. Data from online registration system (black) and 5-point rolling average. Blue and green dashed lines represent the number of students fully enrolled in the course and number of students that successfully passed the exam, respectively

However, the fact that the level at which the attendance stabilized, 90±10 students corresponds to the number of students in the main group attending not only the lectures but also practical classes points at the importance of this factor. Very likely, many students who were attending only lectures did not get sufficient feedback and sufficient involvement in the course that make them quit earlier.

To correlate the attendance statistics with the students' performance during exam, we analyzed the responses of the students who completed the course to the survey. Among them about 48% stated that they visited more than 75% of classes, and 36% that they visited 50-75% of classes. However, these numbers include also the period of extensive electricity cutoffs. When students were asked specifically about the attendance before that period, 83% of them stated that they visited more than three quarters of the classes.

To sum up, our data show that involvement of students in practical classes plays an important role in improving the attendance and motivation of students during online courses and, if possible, small group practical classes and seminars should be involved in online course program. Additional measures that can be used to improve course attendance is better informing students about the time-table of the course and its requirements level during the registration stage.

4.3. Assessment standards

Assessment standards can significantly differ between universities and even between professors within the same university. It is not really a problem for traditional studies when all differences are already common and judged by students and society as 'strong and weak university', 'diploma value' etc. (Ajjawi et al., 2021). Meanwhile for online interuniversity courses it could be a problem as different professors.

During this course we had the same group of students attending two lectures given by two teachers that had the possibility to set up the exam in the same form (multiple choice test); however, the resulted mark distribution was quite different as it is shown in Fig. 4. It is very likely that this is not due to the difference in real students' performance but due to different assessment approach. However, we cannot rule out the complexity of the course material and the possibility that students may have already taken a certain course, at least in part. Taken this into account, to avoid discrepancies in the assessment careful exam organization is needed.

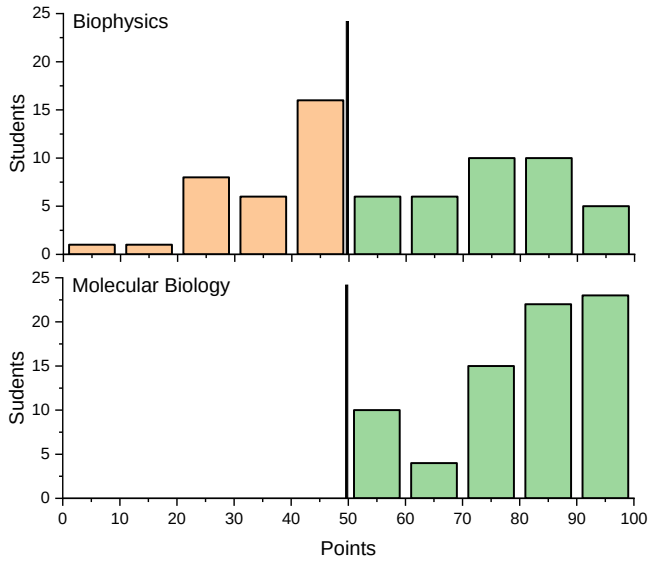

Fig. 4. Distribution by grades according to the final assessment of the same students on the example of two courses, biophysics and molecular biology

4.4. Course recognition stories

According to the terms of the course, the partner universities agreed to recognize the certificates of completion and transfer the students' grades from the respective courses. Each course in the integrated course had a certain number of hours. Although the exam was integrated, students received a grade in each discipline (the grade was presented as a percentage of correct answers). However, in practice, the transfer of grades proved to be a problem.

The first problem is that the number of credits assigned to the course did not match. The inter-university online course provided credits only for classes attended and did not provide additional credits for independent work, as is required by university curricula. In practice, it looks like this: at the university, the course has 90 hours (3 credits), of which only 30 hours are classroom, and the rest is independent work. Our inter-university course also had 30 classroom hours, but without additional independent work hours, so it had only 1 credit. Secondly, the name of the course may not have been exactly the same as the name of the same course at the partner university. Thirdly, teachers who teach a similar course at the partner university refuse to recognize the results of the inter-university online course due to the lack of a real recognition mechanism. The solution to this

problem may be as follows. According to the Law of Ukraine on Higher Education, students are entitled to 25% of elective courses, including those from the professional training cycle. Therefore, completed inter-university online courses can and should be recommended to universities for crediting credits of the student's free choice. From point of view of the course organization, it is important to pre-arrange recognition of the course at least at some universities and agree with format of the course certificate, number or credits and the name of disciplines.

4.5. A university and lecture prospective

Interuniversity courses provide significant benefits not only for students attending but also for their universities and lecturers. First of all, such courses allow to compare the level of knowledge of students at different universities, and to familiarize lecturers with different teaching programs. Second, they strongly widen the selection of specialized free choice disciplines for students, that is particularly important for small universities and specializations with small groups. Third, online interuniversity courses provide an additional option to deal with students that were not able to fully attend their classical courses due to external factors.

However, the inter-university online courses have some limitations: (i) such courses cannot completely replace courses with laboratory classes; (ii) since students with different backgrounds (from different years of study) register for the courses, it is difficult to find the best option for teaching.

5. CONCLUSIONS

The analysis of a case of interuniversity course allow us to identify two major factors affecting effectiveness of such a course in the context of ensuring of quality of student education in times of crisis: (i) self-motivation of students to receive new knowledge and get certificates for further carrier; (ii) receiving a scholarship. Re-enrollment of courses or credits at the home university was not decisive for students to participate. When organizing such courses, it is necessary to take into account that a significant part of students can quit not completing the studies and take measures to minimize it. Moreover, the scholarship was not a motivator to complete the course and successfully pass the exam to receive the certificate. Special attention should be paid to the assessment criteria within the course. Therefore, in order for the course to be productive and effective, it is necessary to emphasize student motivation during selecting procedure. We believe that inter-university courses can be one of the best options for maintaining a good level of student learning in small groups of universities.

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REFERENCES

[1] Ajjawi, R., Bearman, M., & Boud D. (2021). Performing standards: a critical perspective on the contemporary use of standards in assessment. *Teaching in Higher Education*, 26(5), 728-741. https://doi.org/10.1080/13562517.2019.1678579

[2] Al-Balas, M., Al-Balas, H.I. Hatim, Jaber, M., Obeidat, K., AlBalas, H., Aborajooh, E.A., Al-Taher, R., & Al-Balas, B. (2020). Distance learning in clinical medical education amid COVID-19 pandemic in Jordan: current situation, challenges, and perspectives. *BMC Medical Education*, *20,* 341. http://surl.li/gciuy

[3] Blyznyuk, T., Budnyk, O., & Kachak, T. (2021). Boom in distance learning during the coronavirus pandemic: challenges and possibilities. *Journal of Vasyl Stefanyk Precarpathian National University*, *8(1),* 90-98. https://doi.org/10.15330/jpnu.8.1.90-98

[4] Duszenko, M., Fröhlich, N., Kaupp, A., & Garaschuk, O. (2022). All-digital training course in neurophysiology: lessons learned from the COVID-19 pandemic. *BMC Medical Education*, *22(1),* 1-14. http://surl.li/gcius

[5] Dziubanovskyi, I. Y., Goshchynsky, V. B., & Piatnochka, V. I. (2020). Distance learning in medical school: pro and con. *Hospital surgery. La Kovalchuk's Journal*, *4,* 113-116 (in Ukr.) https://doi.org/10.11603/2414-4533.2020.4.11795

[6] Hartnett, M. (2016). The importance of motivation in online learning. In: Motivation in Online Education. (pp. 51–32). Springer, Singapore. https://doi.org/10.1007/978-981-10-0700-2_2

[7] Horna, M., & Pron, N. (2022). Education during wartime: ensuring the continuity of the educational process in Ukraine and abroad. *Educational Analytics of Ukraine, 2(18),* 112-127. (in Ukr.) http://surl.li/gcivb

[8] Kember, D., Ho, A., & Hong, C. (2010). Characterising a teaching and learning environment capable of motivating student learning. *Learning Environ Res., 13*, 43–57. https://doi.org/10.1007/s10984-009-9065-8

[9] Liang, R., & Chen, D. T. V. (2012). Online learning: Trends, potential and challenges. *Creative Education, 3(8),* 1332-1335. https://doi.org/10.4236/ce.2012.38195

[10] Ligidov, R. M., Kazieva, A. M., Fedotova, I. B., Petrenko, A. P., & Orlova, N. A. (2021). Problems of organizing the educational process in small academic groups at the university and ways to solve them (On the Materials of Kabardino-Balkarian State University). In *Modern Global Economic System: Evolutional Development vs. Revolutionary Leap* (pp. 589-597). Springer International Publishing.

[11] Lobos, K., Cobo-Rendón, R., Mella-Norambuena, J., Maldonado-Trapp, A., Fernández Branada, C., & Bruna Jofré, C. (2022). Expectations and experiences with online education during the COVID-19 pandemic in university students. *Frontiers in psychology*, *12*, 815564. https://doi.org/10.3389/fpsyg.2021.815564

[12] Malimon, O., Malimon, L., Tykhonenko, O., Honcharuk, S., & Guts, N. (2022). Modern European trends in the development of the higher education system in the realities of large-scale military aggression (the experience of Ukraine). *Amazonia Investiga*, *11(55),* 156-162. https://doi.org/10.34069/AI/2022.55.07.16

[13] Mendoza, N. B., Yan, Z., & King, R. B. (2023). Supporting students' intrinsic motivation for online learning tasks: The effect of need-supportive task instructions on motivation, self-assessment, and task performance. *Computers & Education*, *193*, 104663. https://doi.org/10.1016/j.compedu.2022.104663

[14] Silenko, A. A., & Kruk, N. V. (2022). Distance education: alternative or additional opportunities for traditional education? *Actual problems of politics, 69,* 94-100. https://doi.org/10.32837/app.v0i69.1308 (in Ukr.)

[15] Steinmayr, R., Weidinger, A. F., Schwinger, M., & Spinath, B. (2019). The importance of students' motivation for their academic achievement – replicating and extending previous findings. *Frontiers in psychology*, *10,* 1730. https://doi.org/10.3389/fpsyg.2019.01730

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Байляк Марія, Абрат Олександра, Шмігель Галина, Лущак Володимир, Швадчак Володимир. Міжуніверситетські онлайн-курси як можливий підхід до покращення викладання під час кризи: український кейс. *Журнал Прикарпатського університету імені Василя Стефаника*, **10** (1) (2023), 49–60.

Повномасштабне вторгнення росії в Україну стало рушієм нових викликів для українських університетів, оскільки спричинило масову міграцію студентів за кордон або всередині країни. Через війну багато студентів або втратили доступ до якісної освіти, або перервали навчання. Усвідомлюючи ці труднощі, університети шукають ефективні шляхи їх вирішення. Одним із підходів до вирішення освітніх проблем, пов'язаних із втратами якості освіти та/або міграцією студентів, може бути запровадження міжуніверситетських онлайн-курсів, які будуть викладатися та визнаватися у межах декількох університетів-партнерів. У цьому тематичному дослідженні здійснено аналіз ефективності одного із міжуніверситетських онлайн-курсів як підходу до відновлення освіти для студентів, які серйозно постраждали від війни, і як способу підтримання якості освіти в університетах з малокомплектними групами. Для аналізу було взято інтегрований онлайн-курс «Науки про життя», який викладали студентам-біологам з різних університетів України в рамках освітнього проєкту, підтриманого Німецькою службою академічних обмінів (DAAD). Використовуючи статистику реєстрації та відвідування курсу, а також дані опитувань, оцінено мотивацію студентів до участі в цьому онлайн-курсі, результати навчання та ставлення до курсу. Опитування та результати фінального тесту показали, що мотивацією для студентів, які зареєструвалися та навчалися на курсі, було бажання отримати нові знання для подальшого професійного зростання. Стипендія слугувала важливим аргументом для зарахування на курс, але не зіграла ролі в мотивації навчатися під час проходження курсу. Відсоток студентів, що успішно здали іспит (~70%), не залежав від наявності у них стипендії. Тому для того, щоб такі курси були продуктивними та ефективними, необхідно робити акцент на мотивації студентів під час відбору на курс. На основі аналізу проведеного онлайн-курсу також було окреслено недоліки та помилки, яких варто уникати в майбутньому на подібних курсах.

Ключові слова: онлайн-навчання, мотивація, вища освіта, оцінювання, малокомплектні групи, війна.