Attitude of University Students to the Information Content of Electronic Educational Platforms

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Abstract—Due to the widespread transition of universities to a remote work format, a survey of students was conducted to identify information-content characteristics and the attitudes of university students to electronic educational platforms. The study took place in two stages from September 2020 to November 2021. Surveys were conducted using Google forms and the MS Teams platform, as well as observations and interviews. The respondents were students at several Russian universities. The legal framework for educational online platforms is presented; modern approaches and classification of educational platforms are given.

Keywords: information content, online educational platforms, electronic resources, students, online education, higher education, university

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INTRODUCTION

The study of educational electronic platforms in higher education is of particular relevance in modern science. Many authors note significant changes in the format of teaching in higher education, where the active use of massive open online courses (MOOCs) has begun. A critical educational transformation occurred in March–April 2020, when, due to the COVID-19 pandemic, more than 166 countries around the world closed educational institutions and transferred about 1520 million students (87% of the total number of students) and 60 million teachers to distance learning [1].

In 2021, the new format of remote work has become a serious challenge for universities, requiring a significant transformation of the entire system of educational interaction between teachers and students. Under such conditions, electronic educational resources have acquired particular relevance. For example, in 2015 the e-learning market was estimated at $107 billion and, according to forecasts, it will reach $325 billion by 2025 [2].

The relevance of the topic of our study is founded on the insufficient knowledge of the attitude of university students to the massive use of electronic educational platforms and how this attitude has changed compared to the initial stage of the pandemic and to the present. This article paid close attention to the study of the information component of the MS Teams platform and the attitude of students to its use.

Online educational platforms have become an integral part of the higher education process. According to forecasts, by 2050 transnational universities will exist based on networked universities, and the share of using online educational platforms will also increase significantly.1

The objectives of this study are as follows: analysis of the regulatory framework for the use of electronic educational platforms, their information, and the content aspects of their use; identifying the degree of resistance to the massive introduction of such educational technologies on the part of university students; as well as changes in the attitudes of university students to electronic educational platforms in comparison with the first stage of the pandemic.

LITERATURE REVIEW ON THE PROBLEM

Let us turn, first of all, to the consideration of the legal framework for the use of educational online platforms. In Russia, the priority project in the field of online education is the Modern Digital Educational Environment in the Russian Federation. The goal of this project is to provide high-quality online education for citizens of the country using digital technologies. The goal of this project is to provide high-quality online education for citizens of the country using digital technologies. Table 1 presents the regulatory framework for distance learning using online educational platforms.

1Education in Russia and the world: main trends. https://edpolicy.ru/education-trends. Cited May 6, 2022.
The use of online courses on online educational platforms in a university is regulated at the state level and reflected in federal laws, decrees of the government of the Russian Federation, and federal state standards, which indicates the particular importance of this area for the development of the domestic education system.

The authors of many domestic researches study various aspects of online educational platforms. Modern approaches to the definition of the concept of an online educational platform are given by G.S. Goloshumova, O.E. Chernova [3], A.A. Smirnova [4], M.V. Nikitin [5], and N.Yu. Kulikova [6]. Issues related to the concept and characteristics of online courses, their classification and functions are studied by N.V. Grechushkina [7], E.M. Bazanova, E.E. Sokolova [8], F.L. Kositskaya [9], E.V. Ustyuzhanina, A.V. Sigarev, I.P. Komarova, E.S. Novikova, S.G. Esvyukov, E.V. Zaitseva [10], L.M. Semenova [11], G.V. Akhmetzhanova, A.V. Yuriev [12], G.S. Goloshumova, and O.E. Chernova [3].

The characteristics of various educational online platforms are studied by E.A. Barakhshanova, O.G. Gotovtseva, A.Zh. Gotovtseva [13], R.A. Abdusalamov, L.V. Magdilova [14], O.N. Ustinova, L.M. Volkova, M.A. Dasko, A.A. Golubev, A.A. Datsenko, D.A. Vasiliev [15], Ya.A. Tatchina [16], S.S. Kovalchuk, N.A. Garkusha, E.N. Medyankin, Yu.N. Mukhina [17], T.A. Zhdanova, and K.Yu. Tarasenko [18].

### Table 1. Legal framework for distance learning using online educational platforms

| Source                                                                 | Content                                                                                                                                                                                                 |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Passport of the priority project Modern Digital Educational Environment in the Russian Federation, which was approved by the Presidium of the Council under the President of the Russian Federation (Protocol No. 9 as of October 25, 2016)¹ | An information resource (portal) that is available to all citizens and provides access to online courses was created; a system for evaluating the quality of online courses has been created; 3500 online courses have been created and are maintained |
| Decree of the Government of the Russian Federation as of November 16, 2020 No. 1836 On the State Information System “Modern Digital Educational Environment”² | The state information system Modern Digital Educational Environment is created to provide free access to online courses implemented by various educational organizations and educational platforms for all citizens, including those studying in educational programs of higher and additional education |
| Federal Law On Education in the Russian Federation as of December 29, 2012 No. 273-FL³ | The network form of implementation of educational programs provides the opportunity of mastering individual training courses using the resources of several educational organizations |
| Federal State Educational Standard of Higher Education – Bachelor’s Degree in Economics 38.03.01, which was approved by Order of the Ministry of Science and Higher Education of the Russian Federation as of August 12, 2020 No. 954 ⁴ | In implementing a bachelor’s program in a network form, the requirements for the implementation of the educational program must be provided by a set of material, technical, educational and methodological resources given by organizations participating in the implementation of the program in a network form |

¹ http://www.consultant.ru/document/cons_doc_LAW_216432/. Cited May 6, 2022.
² http://www.consultant.ru/document/cons_doc_LAW_368202/. Cited May 6, 2022.
³ http://www.consultant.ru/document/cons_doc_LAW_140174/. Cited May 6, 2022.
⁴ http://fgosvo.ru/fgosvo/151/150/24/88. Cited May 6, 2022.

Based on the analysis of these publications [3—18], this article systematizes various approaches to the interpretation of the concept of educational online platforms as well as generalizes their classification, characteristics, and functions.

T.V. Semenova, K.A. Vilkova [19], E.V. Variaisova, E.A. Ivanova, and V.V. Karnyushina [20] highlight the advantages and disadvantages of using online educational platforms in the educational process of universities; B.T. Dzusova, L.A. Tuaeva [21], and T.N. Fimonenkov [22] investigate the quality of online educational platforms and online courses and the factors on which it depends; E.E. Panfilova, Yu.N. Kafiyatullina [23], M.P. Kozyreva [24], L. Peng, and L.N. Ruilene [25] study the potential for integration and models of using online courses in the educational process of universities. Based on the generalization of these publications [19—25], our study systematizes the advantages of online educational platforms, success factors and models for using online courses in the educational process. To do this, it is important to clarify various interpretations of the concepts of the online educational platform (Table 2) and online course.

A theoretical analysis of the research topic has found that a common characteristic of an online educational platform is the internet space or internet resource with an interface filled with educational materials intended for educational purposes.

It should be noted that the concept of the online educational platform is closely related to the concept
of the online course. The Decree of the Government of the Russian Federation as of November 16, 2020 No. 1836 On the State Information System interprets an online course as a training course that is implemented using exclusively e-learning, distance learning technologies, posted on the official websites of educational institutions, educational platforms, and accessed through the internet.

N.V. Grechushkina defines an online course as a type of e-learning interface, a purposeful educational process implemented on the basis of information and communication technologies, a logically structured educational unit methodically provided with a set of systematized electronic learning and control tools [7].

A massive open online course (MOOC) is an online course with open access (without restrictions) for students to training and control materials in an amount that is sufficient to achieve the planned (declared) learning results and assess them [7].

MOOCs have existed since 2011; the first such system was launched by Stanford University. Since 2011, the world’s leading universities have been participating in the creation and promotion of massive open online courses and placing them on educational online platforms created specifically for this purpose (Coursera, Udacity, Edx, FutureLearn, etc.). Since 2014, some Russian universities (Higher School of Economics, Moscow Institute of Physics and Technology, St. Petersburg State University) have also begun to participate in the development of MOOCs [8].

These courses are consistent with the general goals of higher education: expanding access to quality education, providing flexible educational opportunities, increasing the prestige and status of the university, attracting students, reducing training costs, and introducing new pedagogical technologies [9].

Researchers distinguish two main forms of online educational platforms: local (intra-university) and independent (inter-university) platforms. Most universities consider independent educational platforms (Universarium, Lectorium, Coursera, and Edx) as a way to promote their courses and their brand [10].

Attention is also paid to macro-learning platforms: Edx, Coursera, Udemy, DigThink, Cross-Knowledge, Pliralsight, General Assembly, and the micro-learning platforms YouTube, Grovo, Axonify, Pathgather, Edcast, and Qstream [11].

G.S. Goloshumova and O.E. Chernova distinguish three groups of electronic educational platforms: closed platforms, in which changes and additions cannot be made; partially open platforms, in which one can place additional materials in the author’s course without changing the content of the course and its structure; open platforms, which make it possible to develop one’s own courses, determine topics, course structure, and control tools [3].

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Table 2. Interpretations of the concept of the online educational platform*

| Author (source)                              | Definition                                                                                                                                 |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| G.S. Goloshumova, O.E. Chernova             | Information platform on the internet created to post educational materials and ensure communication between the teacher and students, as well as between the students themselves |
| A.A. Smirnova                               | A limited, student-oriented internet resource, dedicated to education and self-development and contains educational materials                      |
| M.V. Nikitin                               | A complex educational product for the Russian education system, including a set of program content, educational services and interactive technologies for online and offline learning |
| N.Yu. Kulikova                              | A set of software solutions, Internet services and interactive technologies that provide students with access to educational content (text, audio, video recordings, lectures, cases, tasks, tests, etc.), as well as feedback from them in the process of interactive interactions and forms of control through the Web site interface |
| Decree of the Government of the Russian Federation as of November 16, 2020 No. 1836 On the State Information System Modern Digital Educational Environment | Information platforms on the Internet on which educational organizations place online courses, mastered by students through the use of distance learning technologies and e-learning |

* Source: compiled according to [3–6].
Study [12] notes three main functions of online educational platforms: educational platform — organization of distance online learning, distance professional development, professional retraining; managerial platform — online management of the educational process, reporting on academic performance, methodological support; communicative platform — networking between universities, communication between teachers and students, holding webinars, and video conferences.

Table 3 shows the main features of digital educational platforms.

The analysis allows us to note the variety of existing opportunities and tools of digital resources in the educational process.

### Table 3. Opportunities of digital educational platforms*

| Digital educational platform                      | Opportunities, tools                                                                 |
|--------------------------------------------------|--------------------------------------------------------------------------------------|
| Zoom                                             | Organization of audio and video conferences, group work of up to 100 people, polls, chat, work in session rooms, hand raise, the ability to work through a computer, smartphone, tablet |
| Mentimeter                                       | Creation of polls, quizzes, voting in real time, getting feedback, quickly generating a QR code |
| BigBlueButton (BBB)                              | Sharing audio, video, slides, chat, screen                                           |
| iSpring                                          | Designing e-learning courses, organizing online training, testing                   |
| Microsoft Teams                                  | Audio and video conferencing, chat, hand raise, file sharing                         |
| Webinar.ru                                       | Any online event (consultations, classes, presentations); it works in all browsers without additional software |
| Google Tabs                                      | The ability to work in one document with tables, forms, creating surveys, interactive presentations |
| Google-Blogger                                   | Placing educational materials, structuring materials, adding various widgets, giving educational materials a variety of designs |
| Google Class                                     | Placing learning materials as one progresses through the course, creating tests, managing users, evaluating results |
| Secure video conferencing service (https://meet.google.com/) | Conducting video conferences, saving video recordings in the cloud                  |
| Service for creating mental maps (Mindmeister)   | Structuring educational material                                                    |
| Proficonf                                        | Video conference organizer                                                         |
| Twiddla                                          | Group work, file sharing, conversations, whiteboard                                  |
| Google Docs                                      | Online office, real-time document collaboration, presentation creation               |
| GoogleHangouts                                   | Messaging service                                                                    |
| YouTube                                          | Web service for posting videos                                                      |
| Stixy                                            | Creation and placement of ads                                                      |
| Dabbleboard                                      | Development of interface sketches, building diagrams, graphs, etc                    |
| Thinkature                                       | A space where one can collect content from the Web environment                      |
| Discord                                          | Video conferencing, games                                                           |
| Padlet                                           | Creation of electronic boards, documents, Web-pages, the ability to collaborate in real time |
| Prezi                                            | Creation of interactive presentations                                              |
| ProjectManage, ProjectPier                       | Group project management                                                            |

* Source: compiled according to [11, 13–15].
Table 4. The largest Russian educational online platforms*

| Platform          | Course topics                                      | Access to courses |
|-------------------|----------------------------------------------------|-------------------|
| Learn new         | Any subject                                        | Paid and free     |
| Zillion           | Implementation of business ideas, personal growth  | Paid and free     |
| Eduson            | Business                                            | Paid              |
| Universarium      | Various topics, courses can be integrated into the educational program | Paid and free     |
| Uniweb            | Educational programs                               | Paid and free     |
| Univer            | Archive of video recordings of lectures, speeches at conferences | Free             |
| Digital October   | Information technology                              | Paid              |
| Interneturok      | Video tutorials for schoolchildren                  | Free              |
| Hexlet            | Information technology                              | Free              |
| Argus-M           | Access to a large number of tests on various topics | Paid              |
| Get2Know          | Service of webinars, online consultations, lecture broadcasts | Paid             |
| National Open University INTUIT | Information technology                                      | Paid and free     |
| Lektorium         | Video recordings of lectures on various topics      | Free              |
| Businesslearning  | Entrepreneurship                                    | Paid              |
| Netology          | Information technology                              | Paid and free     |
| University without borders | Research methods                                      | Paid              |

* Source: compiled according to [16, 17].

Table 5. Characteristics of online educational platforms*

| Platform          | Feature                                                                                                                                 |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| iSpring Online    | Organization of distance learning, tools and services for developing and hosting online courses (video lectures, presentations, tests, tasks), creating an educational portal, learning is gamified |
| Udemy             | Large audience on the site, free hosting of courses under the condition of their self-promotion, ease of use, round-the-clock technical support |
| Open education    | Free access to online courses in basic undergraduate disciplines, the opportunity of obtaining a certificate upon completion of the course |
| Coursera          | Courses on various topics, weekly tasks, tests, the opportunity of obtaining a certificate                                              |
| Edx               | Courses on various topics, tests and tasks on topics; in case of an incorrect answer, the error is analyzed and recommendations for its correction are given; the opportunity of obtaining a paid and free certificate |
| FutureLearn       | Courses of world universities of culture, user-friendly interface                                                                     |

* Source: compiled according to [17].

Table 4 presents the largest Russian online platforms where one can place educational online courses. Table 5 presents some of the world's most popular online educational platforms for actively promoting online courses.

Thus, there are many digital educational online platforms that concentrate on various topics to enable the interaction of teachers and students in a distance-learning format; the choice of a particular platform depends on the level of information technology proficiency of the participants and the specifics of the classes.

According to the authors of [10], educational platforms transfer finished educational products to the consumer. The most popular online educational platforms in the system of massive open online courses are...
as follows: Coursera, Edx, XuetangX, FutureLearn, and Udacity [10].

Recently, professional learning networks have gained increased popularity, enabling teachers to find the necessary educational materials, place their resources, and establish partnerships with other teachers, for example, KQED Teacher Mavens [18].

Researchers note a number of advantages to online education: the variability of the curriculum, the construction of individual educational trajectories, cost reduction, elimination of personnel shortage, academic mobility, access to lectures by leading domestic and foreign teachers, and the use of visual effects and excerpts from films and cartoons to illustrate difficult moments, which contributes to a better mastery of the material [9, 10, 19].

The negative characteristics of educational platforms are as follows: typical tasks at the end of the course (tests), the lack of a single standard for organizing a blended learning format using online courses, the difficulty of choosing the right online course, the risk of teacher layoffs and monotony, and the lack of necessary information [9, 19, 20].

The quality of education using online courses depends on the ability of the teacher to develop and translate educational material into an online course format, on the readiness of students to learn online, and on the level of provision of students with technical means [21].

Electronic educational platforms should not only be filled with educational materials in an online format, but also provide authentication and authorization of users, access control, integration with databases [22].

The following types of inclusion of online courses in the educational process should be noted: online courses as part of blended learning; replacement part of the full—time courses of the educational program with an online course (using own online courses, using online courses from other universities) [19].

T.V. Semenova and K.A. Vilkova define the conditions for the successful integration of online courses into the educational process: staff—university employees who provide support for students’ online learning, the administration of the online learning process, and the functionality of the online platform (tracking student learning results) [19].

According to another interpretation, the organization of work on the electronic educational platform requires the following: the administration of the university, computers with internet access, software that meets the necessary system requirements, electronic educational materials [3].

E.E. Panfilova and Yu. N. Kafiyatullina identify the following key problems in integrating an online course into the university educational programs: the choice of an educational platform, determining the type of course, whether own course or borrowing an online course from another university under a networking agreement, the search for funding sources, etc. [23].

M.P. Kozyreva presents the following models for using online courses: support for face-to-face learning; the rotational model, or learning by combining traditional classroom learning with independent study of an online course; flexible model, or teaching mainly through an online platform and the teacher’s consulting with students; online laboratory, or mastering the course in the classroom through online platforms with the direct participation of the teacher; the mix-it-yourself model, or students decide on their own which topics of the training course to supplement with online classes; learning through an online platform and remote (distant) interaction with the teacher [24].

Foreign authors L. Peng and L.N. Ruliene note a number of unresolved problems in using online courses: insufficient level of digitalization of the educational process at the university; the need for mass access to electronic resources and online services significantly exceeds the capabilities of educational platforms; internet access problems (digital divide); and insufficient level of development of information and digital competences of teachers, low level of cognitive independence of students [25].

MATERIALS AND METHODS

Our study used a personal—cognitive approach. To solve the problem set in this study, we used the methods of survey, interview, and observation. These methods make it possible to identify students’ attitudes to electronic educational platforms, covering a significant number of respondents from different universities. Allowance was also made for the opinions of university professors who observed the reactions of students’ behavior in the distance learning process.

The study was conducted in two stages from 2020 to 2021. At the first stage in September—November 2020, we used a Google form survey of 179 students from nine universities in the Russian Federation and observed their activities as part of the study. At the second stage, in September to November 2021, survey, interview, and observation methods were used. At this stage, the respondents were full-time and part-time students of the Cherepovets State University.

The purpose of the first stage of the study was to identify the preferences of the respondents regarding the online educational courses used on various educational platforms. The survey included the following questions: “Name the online courses and online platforms that you use in the learning process”; “Evaluate whether your level of motivation has increased, remained the same or decreased after using online courses”; “Regularity of your using of online courses in the educational process”; “Positive and negative aspects of using online courses”; “Online courses of
which educational platforms do you recommend to
your friends”; and “Do you use online courses only in
the disciplines recommended by the teacher or do you
use other courses?”

At the second stage of the study, in September to
November 2021, 80 full-time and part-time students
of the Cherepovets State University were interviewed
using the survey form in MS Teams. The respondents
were students of the first, second, third courses of
training areas: Economics, Personnel Management,
and Economic Security.

Our survey was aimed at identifying students’ atti-
dudes towards using the MS Teams platform in the
learning process at the Cherepovets State University.
At this stage, in 2021, university students studied in a
mixed format: in-person practical classes were held at
the university and lectures in MS Teams were read
remotely. The survey included the following ques-
tions: “Evaluate your predominant emotional state in
the process of using MS Teams in the educational pro-
cess: calmness, interest, surprise, joy, discontent, ten-
sion, anxiety, loneliness”; “In the learning process in
MS Teams I like most of all: the video conference
function (video lectures), file sharing, chat options,
the ability to use audio calls”; “I use emoji during
studying to express my emotional state: regularly,
rarely, never”; “I have negative emotions in using MS
Teams: lack of personal communication, technical
problems, limited forms of communication and lim-
itations in receiving feedback”; “Studying in MS
Teams: it is more likely to motivate me; it doesn’t
motivate me for educational activities”; and “Do you
experience difficulties with learning the educational
material during lessons in MS Teams?”

At the same stage, 70 part-time students of the
Cherepovets State University were interviewed using
elements of B.I. Dodonov’s emotional orientation
methods [26]. Part-time students studied exclusively
remotely using MS Teams. It was proposed to answer
the question: “Which type of emotion is most im-
plemented in the process of your studying in MS Teams?”
It was necessary to choose from three categories of
emotions: communicative, gloric, and gnostic.

Particular attention was paid to monitoring the
manifestations of the emotional-reflexive state of the
students during the online educational interaction.
Despite the use of video communication in MS
Teams, students did not always exhibit the technical
ability to connect to it or did not use it for other rea-
sons. The next approach adopted was to observe the
emotional-reflexive behavior of students during les-
sions in MS Teams. Five teachers of the Cherepovets
State University participated in the observation. The
emotional-reflexive attitude of students to the online
educational process was assessed on a scale from 1 to 3
points, where 1 point meant indifferent emotional-
reflexive behavior during the lesson, i.e. the student
was not active, was passive, did not answer questions
or ask them, did not show chat activity; 2 points meant
partial emotional-reflexive activity: the student peri-
odically answered and asked questions, sent messages
to the chat, showed partial tension; and 3 points – the
student’s increases activity when he asks questions,
actively uses all forms of communication throughout
the lesson: audio, video, chat, emoji, shows good
capacity for work, expresses positive emotions, and
gives positive feedback.

Two variants of the emotional state of students are
distinguished in the process of distance learning.
A group of students who have successfully adapted to
the distance-learning format, are capable of planning
their time and use the period of self-isolation for self-
development is characterized by productive ways of
adapting to distance learning. The second group of
students cannot emotionally productively adapt to the
distance-learning format and demonstrates an emo-
tional-depressive reaction. Students in this group
experience apathy and reduced motivation, difficulties
in online orientation, and insufficient self-regulation
skills. Such students need special psychological sup-
port [27].

In the course of our research, the interview method
was also used; its goal is to identify the peculiarities
of students’ perception of the educational process in MS
Teams. In November 2021, 15 full-time students of the
Cherepovets State University took part in the inter-
view in the areas of study: Economics, Economic
Security, and Digital Economy.

RESULTS OF THE STUDY

Let us consider the results of the first stage of our
study. The gender ratio in the study was as follows: out
of 179 student participants, 113 were female (63.1%) and
66 were male (36.9%). The age of survey partici-
pants ranged from 17 to 27 years: 17 years old—3.4%
(6 people), 18 years old—30.7% (55 people), 19 years
old—33% (59 people), 20 years old—16.8% (30 peo-
dle), 21 years old—5.6% (10 people), 22 years old—
7.3% (13 people), 23 years old—1.7% (3 people),
24 years old—0.6% (1 person), 25 years old—0.6%
(1 person), 27 years old—0.6% (1 person). The geo-
graphy of the respondents was as follows: universities
of Russia: Cherepovets State University (Cherepovets),
Lomonosov Moscow State University (Moscow),
Vologda State University (Vologda), Peter the Great
St. Petersburg Polytechnic University (St. Petersburg),
Solovoy Russian State Technical University (Rybinsk),
Higher School of Economics (Moscow), Yaroslavl State
Technical University (Yaroslavl), Yaroslav the Wise
Novgorod State University (Veliky Novgorod), Northern
State Medical University (Arkhangelsk). Thus, according
to the geographical criterion, various regions of Russia were
covered.

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The first question “What online platforms and electronic educational resources do you use in the learning process?” was answered as follows: the majority of students chose the educational platform Open Education (45%); Stepik, Coursera, Ted, Lectorum, and PostNauka were noted by 22, 16, 9, 5, and 3%, respectively. The Open Education resource has become one of the most popular online platforms for gaining knowledge among the students surveyed.

An important aspect in learning process is the change in students’ motivation when using online courses. The survey identified that the level of motivation for learning after mastering a certain online course increased in 58.6% of students (105 people), it did not change in 27.4% (49 people), and it decreased in 14% (25 people), i.e., the use of online courses had a positive effect on motivation for the learning process for the majority of respondents.

Next, we consider the frequency and reason for using online platforms among students. For this indicator, it was shown that online platforms were used very rarely by 30 students, from time to time by 69 students, and regularly by the remaining 80 respondents. The most frequently cited reasons for using online resources were the following: the pandemic and teacher recommendation i.e. forced conditions.

Among the positive aspects of the online educational platforms, respondents noted: the individual pace of learning, self-education, the ability to listen to a lecture several times and download the material, the impossibility of being infected with a virus, the opportunity to listen to lectures by teachers from leading Russian and foreign universities. The characteristics that were most often cited in the responses about the quality of this training format were as follows: convenient, informative, and safe. The leading position is occupied by the answer convenience was 72.6%. This confirms the thesis that young people love comfort in everything that surrounds them, including the way they acquire knowledge.

The main mentioned shortcomings of this training format were as follows: technical difficulties with Internet access, inconvenient website of the educational platform, insufficient amount of material in the lecture, inability to ask the teacher a question, lack of live contact during training.

The survey participants were asked to name an online course that they would recommend to their friends; the answers most often mentioned the courses of the online platforms Open Education, Ted, Coursera, and SkillBox.

The survey revealed that online learning was of practical importance only for 21.2% of the respondents; it had only theoretical significance for the vast majority—78.8%. This is one of the serious disadvantages of distance learning.

At the first stage of the study that involved observation of emotional-reflexive behavior, university teachers noted that the majority of students (70%) experienced alertness, tension, and a high level of resistance to the remote work format (this level reached 8 points of tension on a 10-point scale). Such tension was associated with the unfamiliarity of online learning, the lack of certain skills to work remotely, and the lack of personal communication with the group.

The results of the survey at the second stage of the study in October to November 2021 showed the following patterns. The answers to the question about the emotional state of students during using the MS Teams platform in the distance learning process were distributed as follows: students show calmness (64%), interest (4%), curiosity (4%), joy (14%), dissatisfaction (4%), tension (5%), and loneliness (5%). Thus, the vast majority of the respondents showed a calm and positive emotional attitude, and negative emotions were revealed only in a small proportion of the respondents. There is a significant decrease in the level of tension and anxiety in the learning process. This shows that students have adapted to the distance-learning format and realized its advantages.

Of the various forms of work in MS Teams, the interviewed students like most of all video conferencing, video lectures (20%), file sharing (26%), audio call functions (40%), and chat features (14%).

To express their emotional state in the process of studying with MS Teams, emoji are used regularly by only 9% of the students surveyed and rarely by 55%; they are never used by 36%. Thus, most of the students surveyed do not use this technique in the learning process.

Regarding the negative emotions of the students associated with the use of MS Teams, it turned out that they were associated with a lack of personal communication (20%), technical problems and difficulties (75%), and limitations in receiving feedback (5%), i.e., technical difficulties accounted for the greatest proportion of the negative emotional state during lessons.

In the opinion of the respondents, lessons in MS Teams motivate 44% of respondents to study, 10% of students were not motivated, and 46% of students show a neutral attitude.

Some difficulties with learning the educational material during had in MS Teams were noted by 35% of the respondents, and 65% did not see any difficulties in this aspect.

At the second stage of our study, interviews were conducted with full-time students at the Cherepovets State University (15 people) using the ladder technique, which consists in the consistent formulation of questions on the topic studied. The interview revealed that the main value of learning using MS Teams for the vast majority of the respondents is “saving time, a comfortable environment in the learning process”. Regarding the difficulties that arise in addition to technical problems, the respondents mentioned the...
distraction factor, the lack of concentration at home, and more than 95% of the respondents expressed the opinion that MS Teams is a convenient educational platform. More than 80% of the respondents experienced positive emotions when using MS Teams in the educational process. One of the advantages is the ability to make a report without feeling embarrassed and uncomfortable in front of an audience; such students feel less stress when answering remotely. The interview also noted that “the emotions of irritation are caused mainly by technical problems, the lack of live communication, the lack of receiving live energy from communication in the group.”

In the interview the students had to compare their attitudes towards the online learning process in MS Teams at the beginning of the pandemic (March to April 2020) and in November 2021. All students noted that at the first stage they experienced clear resistance to the online learning process (from 7 to 8 points on a 10-point scale of resistance), as well as the state of stress, uncertainty in that period of time. However, in November 2021, the students showed a positive trend: a positive attitude of the respondents to online learning in MS Teams, the absence of stress, and the level of resistance ranging from 2 to 3 points. The dynamics of the decreasing level of resistance is explained by the fact that both students and teachers have adapted to this learning format over time and that the MS Teams platform allows one to conduct classes using a variety of forms and teaching methods, which has a positive impact on the adaptation and acceptance of this learning platform.

At the second stage of our study (in November 2021), we conducted a survey of part-time students (70 people) studying in MS Teams. The survey was aimed at identifying three categories of emotions: communicative, gloric, and gnostic. According to the respondents, this educational platform most of all gives rise to their gnostic emotions associated with the acquisition of knowledge (83%), 15% of the respondents noted the manifestation of communicative emotions, and only 2% of the students noted the implementation of gloric emotions associated with self-assertion, i.e., the predominant category of emotion is the gnostic type.

According to the observations of teachers, the emotional-reflexive attitude of students to the online educational process in MS Teams has changed: at the beginning of the pandemic, the proportion of students with passively indifferent behavior was higher (35%) compared to the same indicator at the second stage of the study (only 15%); the number of students showing a negative attitude towards remote work has significantly decreased; according to the observations of teachers, the emotional-reflexive involvement of students in the learning process using MS Teams increases if certain methods and forms of learning are used in the course of studying. These methods include: video communication (it significantly affects the increase in the level of involvement in the studying process); forms of individual work and work in mini groups; case tasks and analysis of problematic situations during lessons; active visual content; personal feedback (surveys); emoji for expressing one’s mood (it creates a positive emotional background of the lesson), online gaming techniques that increase a positive mood during lessons; thematic memes and humor in the studying process.

The analysis of the results of our study allows us to note that a number of modern authors have already turned to electronic educational platforms in different learning contexts. For example, the aspect of digital technologies in teaching and learning foreign languages is considered, pedagogical strategies for the development of digital competences of students are developed [28]. In our case, one of the prospects for further research is the mastering of digital competences by students and teachers in the process of using online educational platforms, in particular, MS Teams.

Of particular interest is the study of emotions in the electronic educational space. In the light of the scientific work of E.Yu. Novikova [29], it seems that it would be promising to turn to a more detailed identification of the influence of both textual content and visual design of the educational platform on the emotional-reflexive attitude of students; it is also planned to carefully study the role and forms of humor in the electronic educational environment, its impact on the emotional state of students and teachers.

Despite the fact that the goal set in our work has been achieved, it seems that the study has some limitations and leaves a number of open questions that have yet to be answered.

In particular, it is necessary to study these questions in more detail and compare the degree of influence of several online educational platforms on the positive, neutral or negative emotional-reflexive attitude of students; to generalize the existing methods and forms of organizing online learning and identify the new methods and forms that have a positive impact on the emotional state of students; to determine the features of gender perception of educational online platforms from the standpoint of the informational and emotional component; to generalize the best domestic and foreign experience; and to identify the characteristics and performance indicators of online educational platforms.

CONCLUSIONS

Our study confirms the relevance of using educational online platforms and resources in the field of higher education, the high level of competition among these resources, the significant prospects for further active development of the market for such services, a
variety of educational online platforms for students of all areas of study and also reveals changes in the attitude of university students to electronic educational platforms, which were recorded during the second stage of the study.

A survey of the student target audience confirmed the importance of using electronic resources in the educational process. In different regions of the country, students actively use educational online platforms; according to the respondents, the most popular of these platforms are the Open Education, Stepik, and Coursera.

The majority of the respondents note the theoretical significance of online courses, but they noted a lack of their practical component.

According to the results of the study, the main advantages of using electronic educational platforms are convenience, the ability to repeatedly listen to material and lectures by teachers from leading Russian and foreign universities, as well as security (no risk of viral infection).

The second stage of the study revealed that the majority of students experienced a positive and neutral attitude when using the MS Teams platform in the learning process. The recorded negative emotions in distance learning are mainly associated with technical problems and difficulties. The students surveyed believe that the use of MS Teams motivates them to study or has a neutral effect, does not cause problems with learning the educational material. The advantages of the MS Teams functionality were noted by the students to include the opportunity of video lectures and audio calls.

Answers of the respondents show that MS Teams is a convenient educational platform, the use of which in the educational process causes students to have positive emotions and a low level of stress.

A number of meaningful features of the attitude of students to electronic educational platforms were determined. At the second stage of the study, most of the respondents demonstrate a positive attitude and productive behavior; these students have learned how to effectively use the capabilities of electronic educational platforms for studying and development purposes.

The study identified a significant change in the students’ emotional–reflective perception of distance learning (if we compare the first and second stages of the study). The majority of the respondents express a positive or neutral attitude towards the use of e-learning platforms compared to the start of the pandemic (March–April 2020); the majority of the respondents show productive behavior, a sufficient level of self-regulation.

Modern educational online platforms in the system of higher education address the most important tasks of a communicative nature. The informational involvement of students in the learning process with MS Teams increases if they use video communication, varying forms of individual work and work in mini groups, case tasks, analysis of problematic situations during lessons, personal feedback, online gaming techniques and teaching methods.

CONFLICT OF INTEREST
The authors declare that they have no conflicts of interest.

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