TECHNOLOGY FOR DISTANT EXAMINATIONS IN A FOREIGN LANGUAGE AT A UNIVERSITY

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Abstract

The purpose of this research is to develop a technology for taking a distant exam, which allows to make an objective decision in assessing the University students' skills and knowledge of a foreign language.

The objectives of the research are to find methods for collecting reliable information about the independence of students' responses, the absence of "cheating" when performing test and written tasks, as well as choosing the most optimal video communication platforms for conducting an oral conversation from the point of view of technical implementation.

The research methodology is based on individual forms of work with students using specialized software, information educational platforms and video communication platforms. Traditionally, there are three forms of control in education: oral, written and test. In the context of COVID19 training conditions, it became necessary to organize completely remote work with University students, as well as the need to transfer the mentioned forms of control on the exam to a digital form. For this purpose, the University has updated and optimized its own platform for e-learning and interaction of participants in the educational process. In this regard, there is a need to combine and unify the methods of taking the exam online. Therefore, our research was carried out and allowed us to present a generalized technology of distant examination in a foreign language at the University using information systems of proctoring, checking for plagiarism and videoconferencing. The technology was divided into three main stages: oral conversation with the teacher, writing an essay (written form) and testing. The final assessment was carried out taking into account the level of completion of all tasks of the exam. 5872 students and 32 teachers of the University took part in distant examinations in a foreign language using this technology.

The oral form of the exam was conducted by a teacher using one of the video communication platforms. 43% of respondents showed that ZOOM is the most convenient platform for them, 26% used Skype, 31% used other platforms, as well as the University platform.

The written form, when a student answers the program's questions in writing and then sends answer to the teacher, is the most popular form of control in the humanitarian fields. To control the independence of writing tasks, we used technologies for checking for plagiarism and computer programs that allow us to perform proctoring at the University during the exam. The time for completing the control written task was strictly standardized.

The most commonly used form of control in distance learning is testing, where students are asked to choose the correct one from several answers. When performing test tasks, the response time and proctoring systems do not allow students to use information in textbooks or on the Internet. This control is carried out online on the University's portal.

The results of the research, based on the results of the developed technology and the conducted survey of participants of the distant exam in a foreign language, showed the effectiveness and optimality of a such organization of the exam. Thus, we were able to develop and apply the technology of the distant exam, which allows to conduct an objective, reasoned and reliable assessment of University students' skills and knowledge in the foreign language exam.

Keywords: e-learning, assessment, evaluation, foreign language teaching.

1 INTRODUCTION

Distance learning can be considered as any form of education in which the teacher and students are separated in time and space. For example, correspondence and television courses are forms of distance learning. The advent of the Internet and Web technologies has provided new opportunities for the development of distance learning, and quite often the term "distance learning" is used in relation to online learning. But in fact, online learning is only one of the technologies of distance learning. Distance learning differs from traditional distance education not only by using new media of educational material and means of communication between the student and the tutor. When you use it, the entire learning technology changes. The student regularly participates in educational activities provided for by the state educational standard and the curriculum of the relevant specialty. This is not a form of education, but an educational technology that should increase the availability of education without losing its quality [1].

A distance learning system via the Internet can be defined as a set of software and hardware tools, methods and organizational measures that allow for the delivery of educational information to students over computer networks, as well as the assessment of knowledge obtained in the course of training by the student. At the same time, distance learning is not a separate form of education, but a technology of learning within existing forms. Its difference from the traditional technology of full-time education is the redistribution of time allocated to the study of the discipline namely, reducing the number of hours of classroom classes and increasing the number of hours allocated for independent work [2].

The purpose of this research is to develop a technology for taking a distant exam, which allows to make an objective decision in assessing the University students' skills and knowledge of a foreign language. The objectives of the research are to find methods for collecting reliable information about the independence of students' responses, the absence of "cheating" when performing test and written tasks, as well as choosing the most optimal video communication platforms for conducting an oral conversation from the point of view of technical implementation.

The principle of individualization, which has always dominated the methodology of teaching a foreign language, but caused some complications in the application of practice, today, thanks to the possibilities of computerization, is possible to implement to a large extent. The computer program can freely take into account the user's personal parameters: different rate of material development, multi-level language competence, specifics of information perception [3, 4].

Monitoring as an integral part of the learning process is used when it is necessary to establish how students use the language they are learning, how far they have progressed in learning it, or to diagnose their problems and provide them with the necessary feedback. Monitoring is often associated with evaluating various factors that affect the learning process: the goals set out in the program, course design, materials, teacher's methods of work, and the control procedures themselves. It is one of the main sources of information about what is happening in the educational process [5]. Control in distance learning of a foreign language should be constructive, reliable, valid, practical and informative. Formal monitoring is designed to provide information about how well the learning goals are being achieved. Tests and exams that implement formal control are intended, on the one hand, to assess how students are able to perform specific communication tasks, that is, how well they know the language being studied, and on the other — to assess whether the training course meets the goals that were set during its development. Assessment of success in learning a foreign language course are most familiar to the teacher, since they are based on the material being studied, providing intermediate control that provides feedback that is so necessary for optimizing the educational process and improving the course. Experience in developing and applying tests of success in learning a foreign language course allowed us to formulate the following recommendations for practitioners and future teachers. First, the choice of objects of formal control should be approached from the standpoint of common sense. Second, the assessment should test exactly what actually is wanted to test. For example, the ability to read should not be made dependent on the ability to write in the language being studied, since the student may understand well enough what he is reading, but not be able to express thoughts in writing. Third, tasks that require any special knowledge or specific knowledge of the culture should be avoided. The correctness of the answers expected from students cannot be made dependent on the knowledge obtained, for example, in lessons in other subjects, but not contained in the materials used. Language proficiency assessment is designed to implement final control. It is usually correlated with the criterion tests. Their goal is to show how well students have learned to solve communication problems in the language they are learning, and what they need in order to continue their education at a higher level, including higher education [6].

In the conditions of COVID19 spread, it became necessary to organize completely remote work with University students, as well as the need to transfer control on the exam to a distant form. For this purpose, the University has updated and optimized its own platform for e-learning and interaction of participants in the educational process. In this regard, there is a need to combine and unify the methods of taking the exam online.

2 METHODOLOGY

Our research was carried out and allowed us to present a generalized technology of distant examination in a foreign language at the University using information systems of proctoring, checking for plagiarism and videoconferencing. The technology of assessment was divided into three main steps: oral conversation with the teacher, writing an essay (written form) and testing. The final assessment was carried out taking into account the level of completion of all tasks of the exam.

The rules of the exam should define: how much time is allocated for preparation, what can be used, what sanctions can be imposed if a violation of the rules is noticed, etc. The recommended size of a mini-group is 3-5 people. Students will answer questions as soon as they are ready. For convenience, you can create a separate video session with the Respondent so as not to distract other students. You can use an assistant to monitor the rest of the students.

When conducting a distant exam, the question of an objective assessment of students arises. After all, the further away from the eyes of the examiner, the more opportunities to hide their ignorance. So far, this problem is best handled by proctoring — a control tool, a system that allows us to monitor a test or exam online.

To use the proctoring system, you need web cameras, computers with a stable Internet connection, and a simple program for recording from the computer screen.

The student will need to turn on their computer at the appointed time and pass verification in the distance learning system. To do this, the user must turn on the webcam, give permission to record from the screen of their computer to the Proctor (administrator-observer) and wait for verification. If there is nothing wrong with the available verification, the Proctor starts the exam. During the exam, it is forbidden to search for answers on the Internet, use someone's tips and cheat sheets, or leave the field of view of the webcam. If the examinee violates the rules of conduct, the Proctor may issue a warning, terminate the exam early, or cancel the results. For group tests or exams, more proctors are used, computer screens are recorded, and audience behavior is recorded by surveillance cameras.

There are 3 versions of the proctoring system:

1 Proctor is a human. The test taker is watched by a live person through a monitor: everything is controlled and the decision is made on the exam score. Completed tasks are checked separately.

2 Proctor is a computer. A special program that recognizes "undesirable" actions of test subjects. The recognition quality is constantly being improved. Now such systems are able to track and analyze the direction of the gaze, the style of tapping on the keyboard, the manner of conversation, etc. The results of testing are summed up by the computer without human intervention.

3 The human and the computer. In this case, the program controls everything, and the person checks the results of its work. If the test subject behaves suspiciously, the program will issue a warning, record everything, and report it to the Proctor. The control process takes place either online, the Proctor can simultaneously administer 6 test subjects, or the examiner watches videos on the basis of which he makes a decision.

Proctoring excludes any interest of the training center as a result of exams. Since the proctor is not an examiner, but an independent person or even just an automatized information technology system. It does not participate in the educational process, but takes the exam and makes sure that it passes according to all the rules. A proctoring system also can be either a specially trained specialist or an independent teacher from another educational organization or a private company. To pass the exam with proctoring, the student will need:

- 15-20 minutes before the start of the exam to enable the computer to register;

- after you pass the test the equipment and check if the computer passes the exam (on the office PC can be closed ports);

- enable video broadcast and allow the system to record from computer screen;
- to verify identity by showing documents on the web Cam (passport or credit card);
- if necessary, show the desktop and the room and if everything goes right, the proctor will start the exam.

During the exam, students can use handwritten notes from the course and call the proctor in case of technical problems (if the lights are turned off, the Internet is lost). At the same time, it is forbidden to go to the tabs in the browser, to sit in headphones, to use the tips of 3 persons and cheat sheets, to call the phone and leave without warning. In case of any violation, the examiner writes a comment to the candidate. And if there were several gross violations or the student does not respond to warnings, the proctor can interrupt the exam ahead of time or cancel it altogether.

Despite the fact that the proctoring system is very demanding and there are various technical difficulties, it has a number of advantages. Proctoring will not allow students to pass the test without real knowledge or get a credit for another or non-existent student. At the same time, the control system significantly saves time and resources. A proctoring exam is the only alternative to a face-to-face oral exam or test that preserves the transparency and quality of the procedure itself. And as practice shows, the number of violations in exams with proctoring is much less than in full-time exams. Firstly, this is due to the lack of interest of proctors in the results of the exam. And secondly, the students themselves are more responsible to the test and behave more calmly, being in a familiar environment.

In case of assessment in a written form, the student performs the work in writing (essay) and sends it to the teacher for verification, if necessary, in the video conference format.

Stages of the written assessment:

1   In a videoconference it is necessary to contact students. Send them the task in any convenient way.

2   To ask students to confirm that the task is clear. Warn about the time allotted for completing a written task, after which they are required to send the work for review by email in writing (scan\photo) or in word file format.

3   It is assumed that the submitted works, such as essays, can be checked for anti-plagiarism.

4   Contact students at a certain time, notifying them in advance, for an interview on the results of the work performed by video link. If teacher is not sure whether the work is done independently, the teacher can ask additional questions.

The first step of our technology of a distant exam was defined as the oral conversation with the teacher. It was conducted by one of the video communication platforms or distant learning platform, such as ZOOM, Skype, Moodle (the University platform) or other. General algorithm of a distant exam is the next:

1   To organize a conference in zoom, be sure to turn on the "waiting room" to record those who came to the exam. You can let 30 people into the conference, leave the rest in the waiting room, or you can let them all in at once.

2   As soon as all participants are logged in, turn off all microphones.

3   Start issuing cards one at a time (cards must either be sent to students or uploaded to the chat of this conference when all participants have logged in, the card number should be chosen by an online randomizer), call the student (turn on the sound and ask them to turn on the video, if necessary), start demonstrating your screen on which to open the site, enter the number of cards and get a random number for the student's card, then the student goes to prepare, and the teacher records the card the student received.

4   Preparation for answers of students is carried out online. The training takes 15 minutes, after which the teacher calls the student for answers in the same order in which the students received the tasks.

5   The teacher tells students, that as soon as they're ready to answer, they should "raise a hand". The organizer tracks the raised hands.

6   As soon as the student is ready to answer, the organizer (teacher) creates a "session hall" to which the student and the examiner are invited (this will be a separate hall for this particular

examiner). Then it also happens to the other students. There can't be more than 50 session halls.

7   After the student has finished taking the exam, he leaves the session hall to the main hall with the teacher, the teacher voices the assessment, and the conference organizer (or the teacher himself) records this assessment.

8   Then the organizer invites the next student to the session hall to the free examiner with a raised hand.

9   The organizer also needs to keep track of who is preparing for the exam and for how long.

Students' responses are evaluated according to the criteria of the educational standard of the relevant disciplines. At the end of the interim assessment, the teacher voices the assessment to each student during a video conference. Then the teacher puts the grades on the list, but the video call does not end. The student checks whether the assessment is available in the personal account of the electronic educational information system in the "academic performance" section. After the assessment appears, the student notifies the teacher and the video call ends.

When testing on the University's learning platform, the test results can be immediately shown to students and put on the teacher's list. The student checks the appearance of the assessment, and in case of problems, contacts the teacher.

In case of equipment failures, the teacher should immediately notify the Training Department. In case of failures in the work and communication channel both on the part of the student and the teacher, more than twice with a total duration of more than 30 minutes, you should conduct an interim certification again on the reserve day, and the student should be put on the list of non-attendance for a good reason.

The second step of out technology is defined as writing an essay. Written form as a part of the foreign language assessment of the students in our research was done in the form of writing an essay on the topics in professional areas. The students were offered to write an essay in a foreign language on one of the given topics according to their professional training. The time was strictly standardized up to 45 minutes, the necessary amount of words – 180-270. The certain structure of an essay and other criteria usual for such kind of a task were defined. Optionally, they can be described in a such way:

1   The upper part contains information about the educational institution, the subject in the middle, and the initials of the person who wrote the essay and the reviewer at the bottom.

2   The introduction provides a brief overview of the main content of the text.

3   The main part describes in detail the person's view on the chosen topic, describes the facts and reasons that influenced their point of view and the final conclusion. To make the text more understandable, you can divide it into separate sections with their own names.

4   In conclusion, a summary is made on the issue discussed in the main part.

Common features of the essay were revealed for the students:

- Small volume. Of course, there is no clear framework. However, keep in mind that the text should not exceed 10 pages.

- Concrete idea. The essay should develop and reflect one idea. It answers one question.

- The independent form of writing is the main feature of this text. The essay does not tolerate any restrictions. It often contradicts the laws of logical laws, is subject to feelings and emotions.

- A relaxed story. In order to interact with the reader in a confidential manner, the author should not use complex and pretentious wording in the text. He talks about the topic freely and naturally, referring to his own worldview.

- The presence of paradoxes. For many, this is a mandatory feature of the essay. Often the basis of reflection must be original statements, the paradoxical definitions, characteristics, etc.

- A single internal meaning. The text, despite its inconsistency, should carry a certain point of view throughout its entire length.

- Focus on spoken language. However, you should avoid using slang expressions, shortening phrases, and a frivolous tone.

Afterwards, student's essay were checked for plagiarism by one of the computer system and assessed. The demanded originality of the student's text should be not less then 79 %. Originality in this case acts as a percentage of the unique and ordinary. The term "unique" refers to the presence of copyright developments, and "ordinary" includes information borrowed from third-party resources. This criterion is so important that it has been a fundamental principle of students' and teachers' activity within the University for many years. The need for originality of work is explained by the selection and creation of something new and the formation of future professionals. Text originality is an indicator that is designed to evaluate the quality of the text using search engine algorithms. Various online and offline resources evaluate articles. The final indicator is given by the services as a percentage. In student works, uniqueness means first of all how much time and work the student has invested in them. The teacher does not set himself the task of achieving a high level of uniqueness of homework or control checks, he only wants to make sure that students have mastered the material passed. It is common to check the uniqueness of research papers, term papers, theses, master's and dissertations. Some universities also set a maximum uniqueness threshold for essays and reports, but this is generally not a popular practice. Our research indicated that plagiarism systems is the most effective assessment tool for written creative tasks in a foreign language, when the distance learning is implemented.

The third step of our technology refers testing - the students should perform the lexical and grammar test, organized by the teacher on the University's platform of distance learning. Remote testing involving stationary personal computers is the most developed and widely used in higher education institutions. It differs from the traditional one (based on printed materials) by centralization, specific structuring of tests, and in most cases, the lack of visual control on the part of the teacher. Its main drawback (in the absence of visual control) is the inability (even with a limited time of presentation) to guarantee that no one other than the test subject was involved in the implementation and no additional sources of information were used. Its main advantages are centralization, modern structuring, and compliance with youth ideas about the educational process.

In addition to stationary personal computers, stationary remote testing can involve stationary video equipment, interactive whiteboard, satellite TV, etc. depending on the material well-being of students and the University and the teacher's methodological training. Mobile types of remote testing are the latest and most interesting from both theoretical and practical points of view. This is because mobile devices are an integral part of the life of young people. These devices are applicable for testing absolutely anywhere in limited time intervals, which creates comfortable and close to real life conditions for completing tasks; students do not experience any difficulties with the placement and perception of the material; to a greater extent (thanks to quick feedback, as well as the inability to exceed the time interval and return to the previous task), the authenticity of their work is guaranteed. However, these types of testing are still insufficiently studied and are relatively rarely used in the educational process.

In our technology, the lexical and grammar test was implemented in the form of computer testing on the portal of the University with the implementation of mandatory identity authentication in the system and identification of the student. Computer testing involves students solving various types of tasks and choosing the correct answers to questions from two or more options, in the corresponding field of training (specialty). The teacher can set time limits for passing the test, and the results are received automatically. On the portal, it is possible to issue cards for assessment in any format, if it is an exam. The teacher, as well as the period for which students are required to answer these questions can set the time of access to these cards. The students can attach their answers to the questions in the card on the portal, therefore, the teacher has the opportunity to get all the answers, check and give a rating within the specified period.

Positive features of distant testing of the educational process give grounds to speak about the prospects of distance testing in the system of training students in a foreign language and its compatibility with the traditional learning environment. Mobile and combined forms of remote testing that are in the early stages of development are becoming more and more firmly embedded in the educational process due to the elimination of stressful situations when performing test tasks, technical ease of working on tests, creating a natural environment using digital technologies that brings learning activities closer to normal, everyday life [7, 8].

3 RESULTS

The distance exam for today is: a proven and successfully practiced form of passing tests; a convenient option for universities that want to expand the pool of potential applicants, and an attractive opportunity for nonresident or international students; an assessment form in online courses that are becoming increasingly popular; a form of control over the quality of exams in branches of large universities; a method of conducting exams in which, thanks to a system of proctoring and personal monitoring of the exam taker, the probability of dishonest passing the exam is minimized.

In the distant form, the problem of monitoring students' learning activities becomes one of the key issues in the design of training courses and their implementation. During distance learning, special measures are taken to ensure the reliability of the control data: organization of the system of access to educational resources by individual passwords and identifiers; using various ciphers and encodings to protect the tests themselves from unauthorized access, running testing programs strictly using passwords; organizing and conducting control activities on the basis of certified regional training centers that have access to the Internet; using additional peripherals, such as video cameras or individual pin code input devices; strict time limit on the response, random mixing of answer options and tasks from an extensive bank; statistical protection during testing protocol data is evaluated using special algorithms for multidimensional data analysis that allow detecting forgery, especially in the case of systematic and mass forgery.

In the world practice of online education, there are several options for testing knowledge. There are asynchronous and synchronous control elements based on the established time relationship between receiving and sending information between the teacher and the student. Synchronous format involves almost simultaneous exchange of information. Using only the asynchronous format changes the procedure, since it completely eliminates the possibility of performing and directly protecting your response. The synchronous control element is performed according to the class schedule. Oral distance exams are conducted in Zoom, Skype or other video conferencing systems, using proctoring methods — systems for monitoring examinees to comply with the rules of passing the exam. The student's work process and behavior is controlled by special people - proctors or/and a proctoring system, such as Examus, Stepik, and ProctorEdu. This system really allows to conduct an exam for a large number of students at the same time. But the problem of technical failures remains, and serious problems with the platform often lead to re-examination [9].

Testing is one of the three stages of the presented by us pedagogical technology for conducting an exam in the context of distance education. The results of the study showed that unambiguous and reproducible assessments provide objective methods for monitoring the quality of students' knowledge, based on specially created materials - tests. They should be developed for each level of language acquisition. The test is a tool that allows you to identify the level and quality of learning. It should be noted that the study of the state of control of students' knowledge with the use of test meters revealed certain problems when using tests: insufficient quality and validity of the content of test tasks, unreliability of test results, shortcomings in processing results according to the classical theory of tests, lack of use of modern theory of processing test materials using computer technology.

The use of proctoring methods can overcome the subjectivity and straightness of the testing process, raising the level of knowledge assessment by machine systems. The fact is that the use of traditional methods of computer training and control (direct testing, scoring system, etc.) has a significant drawback: the process of interaction between the evaluator and the evaluated person does not lend itself to strict formalization, so the main algorithmic functions will not be able to fully describe this subject area. Therefore, the implementation of automated control of knowledge and skills of students, first of all, includes solving the problem of determining the set of required knowledge qualities, without which the criteria for evaluating knowledge and ways to determine the level of their assimilation cannot be identified. Due to these disadvantages of online testing, the pedagogical technology developed by us includes an oral interview with the examinee and writing essays, the quality of which is checked by the teacher for checking the educational criteria of the assessment, then by a computer system for checking for plagiarism and using computer proctoring systems in the process of the examination.

4 CONCLUSIONS

Intermediate certification in the form of tests and exams in a foreign language in an electronic information and educational environment using distance learning technologies is carried out in accordance with the schedule of training sessions in the information resource that was used to

conduct training sessions. The pedagogical technology presented in this study involves 3 basic stages of the assessment (exam): distant testing, online conversation with the teacher, and completing a written task (essay). When conducting remote testing, the teacher provides access to passing the test, sets a specific time, monitor the time and progress of the task, sends students the results of the completed task by e-mail with an indication of the mistakes made by the student and the overall result of mastering the discipline. During the execution phase of the essay, the teacher formulates a task so that student was not able to find a ready answer, to inform students about the list of potential tasks and criteria of their evaluation, determines the time for writing (but not more than 2 hours) and mode of transmission to the teacher of the response to the task. An oral online survey is conducted in small groups of students (5-6 people per 1 academic hour) based on materials on the studied foreign language course in the professional sphere. The teacher determines the time of the webinar (up to 5 astronomical hours), based on the number of students with breaks between communication in small groups, makes sure that each student answers questions that are not repeated during the discussion, evaluates the answers of students and brings them to the attention of students. The final mark is based on the student's level of completion of all three stages of the exam. During all stages of taking a distant exam in a foreign language, distance educational technology services are used that meet the requirements of the criteria for evaluating students' knowledge and are described in this paper.

Thus, we were able to develop and apply the technology of the distant exam, which allows to conduct an objective, reasoned and reliable assessment of University students' skills and knowledge in the foreign language exam.

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