## DISTANCE LEARNING: POSSIBILITIES, EXPERIENCE, RECCOMMENDATIONS

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> *"Nowadays teachers are facing an entire world –*
> *in their gadgets monitors"*
> *(Sh. Amonashvili)*

**Abstract**. In the first quarter of the 21st century the humanity is forced to live in a complicated period of adaptation to the new conditions brought about by the intrusion and rapid spreading of mutated variants of a previously unknown respiratory virus SARS-CoV-2, which often causes severe disease form and causes death results. "Pandemic COVID-19, that enveloped modern world, placed the society on the verge of global challenges in different spheres of human existence. Because of this nowadays, like never before, there is a problem to continue an educational process in different levels establishments in the quarantine conditions. Society in general and pedagogical community in particular were not ready for these events, because of what the search for effective methods and techniques of educating students became more intense. When used wisely, the crisis in any sphere of human activities becomes a push for progress. Ukrainian education is now moving along this road, often through attempts and mistakes, distinguishing effective forms, methods and means of education" [3, p. 43].

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Because of the pandemic all forms of educational interaction between teachers and students: lessons, lectures, practical lessons, laboratory lessons, different consultations, tests, exams – were forced to be conducted in distance form. It caused a stressful situation for teachers as well as students, since any innovation needs a lot of intellectual, psychological, emotional and time efforts. The teachers were faced with a task to organize distance educational process by means of electronic content transmission with the help of all accessible instruments for creating communication. Certainly, not all teachers were ready for this, since a lot of acknowledged in their field scientists and pedagogues were faced with the need to create electronic educational resources and an urgent learning of digital platforms and services. This problem was especially meaningful for humanists, for elderly, who, before the introduction of distance learning avoided the use of gadgets, and particularly – the creation of their own intellectual products with their help. They did not have basic skills of the work in digital environment, elementary technical knowledge and time to master new instruments and technologies, to understand the approaches for online transformation of a usual educational process etc.

Anxiety, lack of confidence, confusion of the pedagogues, which can be noticed in the beginning of the quarantine, gradually changed into the mastering of online technologies, into the transformation of usual methodics of disciplines teaching, into the transfer of the classroom from real dimension into a virtual one etc. However, even now the pedagogical society is in search of the ways to heighten the results and effectiveness of educational process, the development of optimal methods for teaching natural sciences and the humanities. There is a lack of experience, the theoretical basis of distance learning as the main form of getting the knowledge by the students in crisis situations, the formation of proper skills are now in the process of defining and distinguishing, while practical pedagogues are called to give their intellectual contribution into the educational process and to give the materials for the analysis and development of the theoretical conclusions, based on which they can offer a new, modernized didactics.

During the last decade distance learning became one of the productive and effective forms of the interaction between the pedagogues and students. Its advantages are unquestionable, since it enables to freely join the education in the most prestige establishments of Ukraine and the world,

to become the participants of the video conferences conducted by the most reputable scientists and pedagogues, to pass exams, which give space for the further education etc. The processes of introducing the technologies of distance education in Ukraine were conducted mainly in high schools where the students have a high level of motivation to the education.

Distance learning spread with new force because of today's challenge, which invaded all the world – the emergence and fast spreading of the virus SARS-CoV-2, contagious and deathly one. To keep the people from having the disease and creating social distancing the governments of most of the countries introduced a strict quarantine, which, among other safety precautions, meant the distance form of work for educational establishments. It made the pedagogues of secondary and high levels of education to quickly master Internet platforms and other tools of distance interaction.

Accumulated practical pedagogical experience of widely introduced distance learning needs theoretic work and generalizing to correct the didactic theory and practice. That is why it is important for experienced teachers to demonstrate the results of their own searching, conclusions and methodological recommendations.

The possibilities of distance learning tools are very wide and the better the pedagogue masters it, the more perfect his/her didactic system, as well as the educational process, becomes. Surely, you cannot interchange "live" communication with the students by the distance technologies, that is why we look at distance learning as a temporary process, however its elements have introduced themselves into our life and will not be deleted.

Based on our own experience of pedagogical activities in the pandemic conditions, we consider it suitable to demonstrate methodological recommendation for increasing the effectiveness of learning process: to use different educational web-resources and online platforms, interactive exercises, virtual blackboards etc.; to give the students the links for multimedia materials, educational video films, video and audio recordings of lectures and practical lessons to understand educational material; to keep feedback you can suggest your students to use online testing; to analyze and assess all types of tests, practical works, tasks and other kinds of individual work; to conduct extra individual online consultations; during the conference to work no more than 30 minutes with a little break afterwards; to use interactive methods to stir up the mental activities of the

students; to use the system of hyperlinks for extra informational materials; to choose the tasks that heighten educational motivation of the students; you should organize group work for communication between your students using distance learning tools.

## 1. Introduction

In the first quarter of the 21st century the humanity is forced to live in a complicated period of adaptation to the new conditions brought about by the intrusion and rapid spreading of mutated variants of a previously unknown respiratory virus SARS-CoV-2, which often causes severe disease form and causes death results. "Pandemic COVID-19, that enveloped modern world, placed the society on the verge of global challenges in different spheres of human existence. Because of this nowadays, like never before, there is a problem to continue an educational process in different levels establishments in the quarantine conditions. Society in general and pedagogical community in particular were not ready for these events, because of what the search for effective methods and techniques of educating students became more intense. When used wisely, the crisis in any sphere of human activities becomes a push for progress. Ukrainian education is now moving along this road, often through attempts and mistakes, distinguishing effective forms, methods and means of education" [3, p. 43].

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## 2. Distance learning tools

Significant number of teachers, not only young, who because of their age are integral with informational communication activities, but also the older ones, before the pandemic created their own theoretical and methodological works for teaching their courses by means of modern technical tools and technologies, since, according to the author of the manual of Old Slavonic language for philological students I.B. Tsaralunga, "…educational process requires modernization proper to the requirements of nowadays. And this is possible to accomplish only by a wide introduction into the work of higher education establishments computer means and methods of getting, processing and transmitting the information, which guarantees quality changes in teachers' and students' activities [14]. Because of this there is an urgent issue to create a new generation of informational and methodological support of an educational process based on computer multimedia technologies, which allow to combine into one computer technological system text, sound, video, graphics and animation. Even a great pedagogue Ya.A. Komenskyi in his work "Grand didactics" wrote: "...Everything possible to give for perception: visible – for perception by

vision, audible – by hearing, scents – by flair, touchable – by touch. If any objects can be perceived by several senses at once, let them be perceived by these senses..." [11, p. 15].

The possibilities of modern informational systems and technologies are able to satisfy organizing, pedagogical and methodological needs of education, such as:

– fast and precise conversion of any kinds of information (digits, text, grahics, sound etc.);

– receiving and giving information in different forms;

– remembering, storing, structuring, sorting large amount of information;

– giving the results of the work in precise demonstrative form: text one, sound, pictures, graphics etc.;

– building static and dynamic informational models of real objects and phenomena.

The permeation of modern informational technologies into the education sphere allows the pedagogues to change the contents, methods and organizing forms of studying in a quality way. The aim of these technologies is the intensification of students' intellectual possibilities in informational society as well as humanization, individualization, intensification of learning process and the increasing of education quality at every educational level.

Nowadays the most popular and promising are the technologies based on the use of the Internet for providing the students with learning methodological materials as well as for the teachers and students interaction. In the increasing of the quality of distance learning the choice of a digital system for its control plays the great role. For the integration of pedagogues, administrators and students into one reliable, safe and integrated system for the creation of personalized learning space there are a great number of platforms: Blackboard (https://www.blackboard.com), CenturyTech (https://www.century.tech), ClassDojo (https://www.classdojo.com), Edmodo (https://www.new.edmodo.com), Edraak (https://www.edraak.org), Google Classroom (https://www.classroom.google.com), Moodle (https://www. moodle.org), Schoology (https://www.schoology.com), Seesaw (https://www. web.seesaw.me), Skooler (https://www. skooler.com), We.Study (https://we.study/) and others.

Thus, We.Study allows: the use of any types of files, presentations, audio, video, iFrame, YouTube/Vimeo, webinars videos, interactive online

blackboards Miro; adding the files for downloading; conducting webinars, questions and answers sessions, lectures and practical lessons in real time; available recording of the lesson for everyone who was not able to attend; creation of the tests and home tasks, monitoring studying progress of the group and the results of an individual student, having changes in the publications of the course; fast grading of the participants with the help of QR-codes, when received grades will be the part of a general statistics of the studies; studying from any device; watching the lessons, presentations, videos and doing tests directly from the browser.

With the help of Google Classroom teachers can quickly create and systemize the tasks, get the results of the checking and easily communicate with the students, while the students can save their work files and do the task on Google Disl as well as communicate with the teacher and their classmates. In Google Classroom it is possible to work with Google Documents, Disk and Gmail. The pedagogues can create and gather the tasks online and check them in real time, have constant connection with the students during and before/after the classes.

Google Classroom has three main parts, which allow to manage the studying: feed, tasks and people.

The part "Feed" is practically the analogue of the feed from social networks, where you can write messages, send videos, links and photos, give tasks.

The part "Tasks" is in a way a diary or a blackboard where a teacher leaves a task, which should be done by the students. Here it is possible to save ready tasks, which are shared in one or several classes from a pedagogue's account. Students get the task and see the period of doing it, after completing it they press the button "Turn in", after this the teacher has the task, the teacher can give a mark and sent a checked task to the student. It is very convenient that the pedagogue can see the statistics of doing/not doing the tasks by the student.

In the part "People" it is possible to see everybody who is present in studying space: teachers and classmates. Here you can find any person and send a message for him/her.

For the increasing of the quality of distance learning it is advisable, apart from the mentioned above digital services, to use for online lessons wit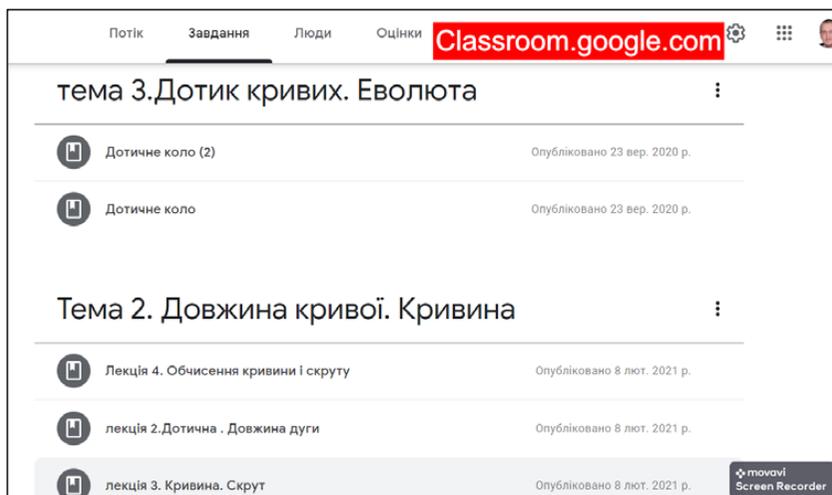h the students the following content: Discovery Education (https://app.discoveryeducation.com/learn/signin), Khan Academy

**Figure 1. Learning and teaching complex**
**"Differential geometry and topology" in Google Classroom**
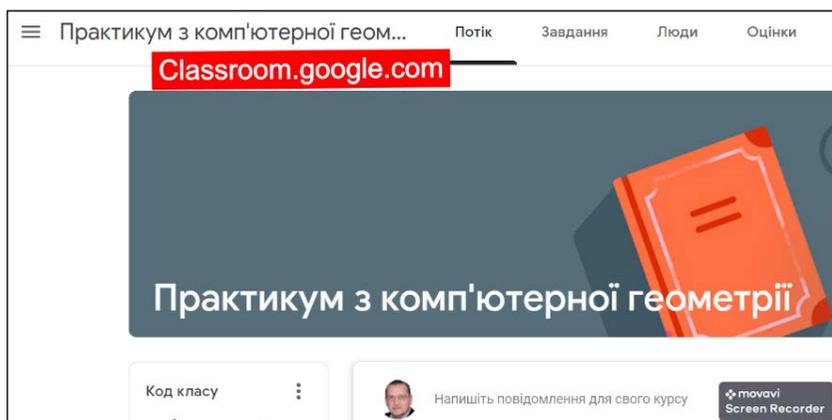


**Figure 2. A classroom in Google Classroom**
**"Tutorial on computer mathematics"**
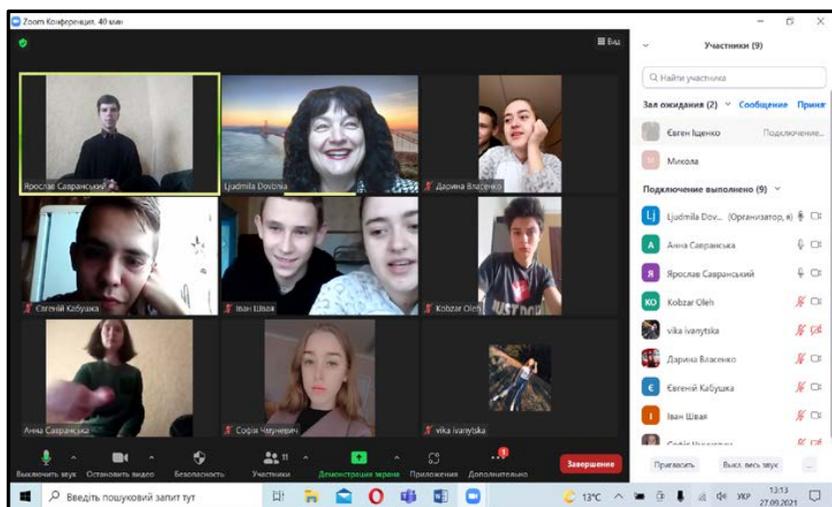
**Figure 3. Video conference in Zoom**

(https://www.khanacademy.org/), KitKit School (https://enuma.com/), LabXchange (https://about.labxchange.org/), Zoom (https://zoom.us/), Bigbluebutton(https://bigbluebutton.org/),WiziQ(https://www.wiziq.com/), Mindspark, OneCourse (https://onebillion.org/), Quizlet (https://quizlet.com/en-gb), Siyavula (https://intl.siyavula.com/), YouTube (https://www.youtube.com/), Lark (https://www.larksuite.com/) and others (Figure 3).

There is a wide choice of the tools for creating digital study content: Thinglink (https://www.thinglink.com/), Buncee (https://app.edu.buncee.com/), EdPuzzle (https://edpuzzle.com/), Kaltura (https://corp.kaltura.com/education-video-platform/), Nearpod (https://nearpod.com/), Pear Deck (https://www.peardeck.com/). To create video content nowadays you can use one of the free computer programs, which allow to visualize the actions done by the user (teacher) on their computer, such as Windows Movie Maker, Wink, uvScreenCamera, VideoCap, Camtasia Studio, Free Cam, VirtualDub, InShot, Screencast-O-Matic, Edpuzzle and others. Such materials can be useful for analyzing the mistakes after a test, for presenting new information etc. Most of the materials can be quickly and conveniently done with the phone [7, p. 44].

For constant and quick connection (online chat) between an educational establishment and students, between students it is necessary to organize extra communication channels, chats, groups, where they can present their own findings, share links for interesting resources and the impressions about
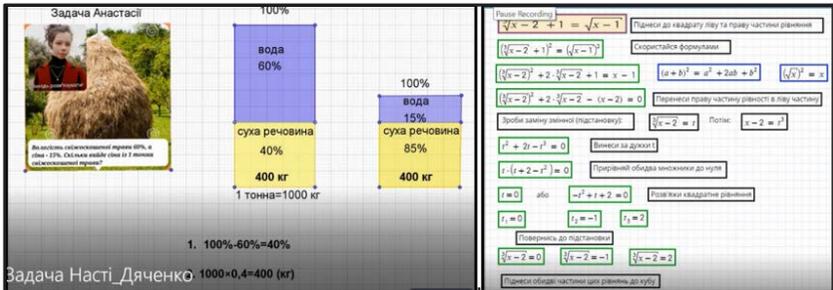


**Figure 4. Video materials created with the help of Free Cam 8**
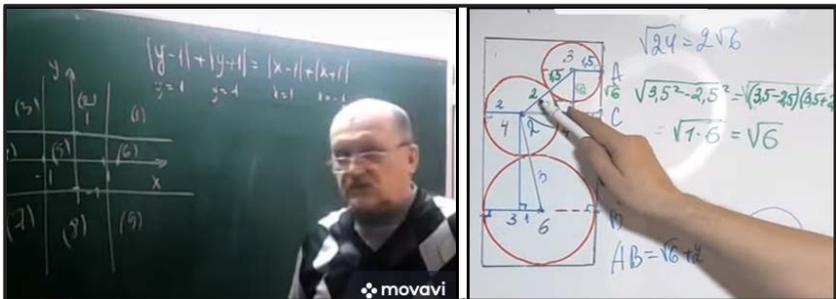


**Figure 5. Video materials created with the help of Windows Movie Maker**



**Figure 6. Video materials created with the help of InShot**

the work with them: Viber and Facebook Messenger, WhatsApp, Telegram, Snapchat Line, Google Hangouts, e-mail. According to the research, the leaders among the messengers in Ukraine are Viber (83% of users), Facebook Messenger (54%), Skype (44%), which is used by older people ((aged 45-49) – 53%) and Telegram (19%), Telegram is mainly used by young people before 19-29 years old. Viber is a distance hero of Ukrainian educational system, one of the most popular means of communication, which can be used for distance learning as well [13].

During distance learning a teacher cannot see the students, their reaction to the given information, the level of understanding study material, that is why the necessary part of study process is organizing feedback. Such connection can be automatic (for example, the analysis of the test answers) or individual. With the help of cloud services it is possible to make study contacts and provide intellectual interaction between the distance learning participants. The following tools with automatic feedback for creating quizzes, assessing chats will be useful: Quizlet (https://quizlet.com/en-gb), H5p (https://h5p.org/), Pear Deck (https://www.peardeck.com/), Quizizz (https://quizizz.com/admin), Triventy (https://www.triventy.com/), Flippity (https://www.flippity.net/), Classtime (https://www.classtime.com/uk/), Learningapps (https://learningapps.org/), Mentimeter (https://www.question-star.ru/), Kahoot (https://kahoot.it/), Wordwall (https://wordwall.net/uk). Корисним буде також і Thatquiz (https://www.thatquiz.org/uk/).
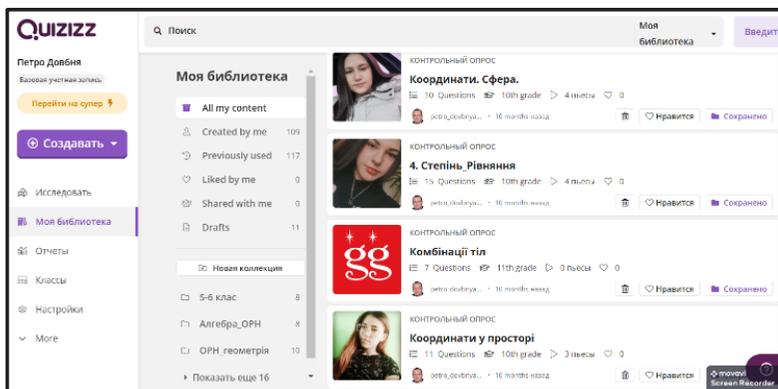


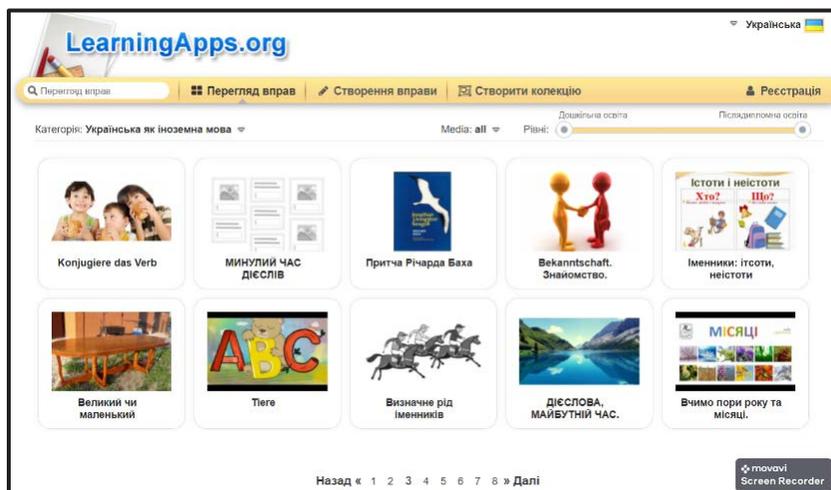**Figure 7. The quiz library in Quizizz**

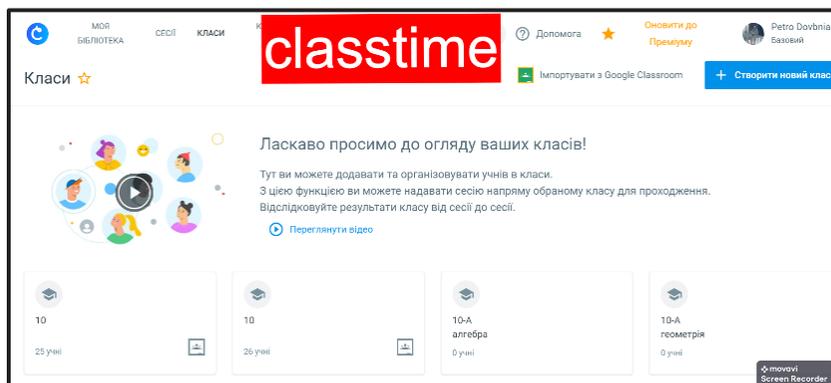**Figure 8. The quiz library in Learningapps**



**Figure 9. Study content in Classtime**

For a successful organizing of learning process, traditional one as well as distance, interactive online blackboard is an effective tool, it gives an opportunity to work with the students live and with its contents like during traditional lesson. In most cases interactive online blackboard allows to broadcast in real time and to make the explaining by hand, to demonstrate the prepared demonstrative meterials, to communicate with

**Figure 10. Math tool Thatquiz**

the students through chat or video-chat. There are a lot of such resources. The most popular ones used by practical pedagogues are: Classroomscreen (https://classroomscreen.com/), Stoodle (https://www.ck12.org/student/), Idroo (https://idroo.com/), Conceptboard (https://conceptboard.com/), Drawchat (https://draw.chat/), Limnu (https://limnu.com/), Linoit (https://en.linoit.com/), MIRO (https://miro.com/), Netboard (https://netboard.me/), NoteBookCast (https://www.notebookcast.com/), Padlet https://uk.padlet.com/), PixiClip (https://nitforyou.com/), Popplet (https://www.popplet.com/), SketchPad (https://sketch.io/sketchpad/), Scribblar (https://scribblar.com/), Twiddla (https://www.twiddla.com/), Webroom (https://webroom.net/).

A promising branch is multimedia with 3D-modelling, in which with the help of three-dimension graphics you can create three-dimensional interactive copy of a real object. Interactivity should be understood as the possibility of an active interaction with this virtual model: looking at it from any point, making any changes with the object with minimal efforts, hiding or transforming its elements etc. These services are rapidly spread in different spheres of human activities, particularly in education. The student's study resource is augmented (AR) or virtual (VR) reality. They are the learning
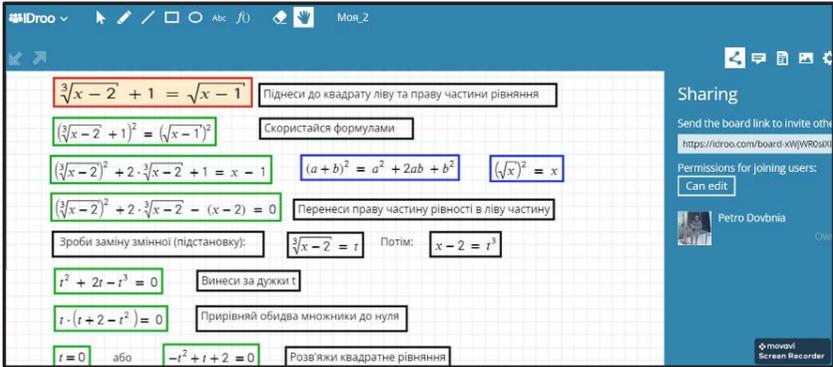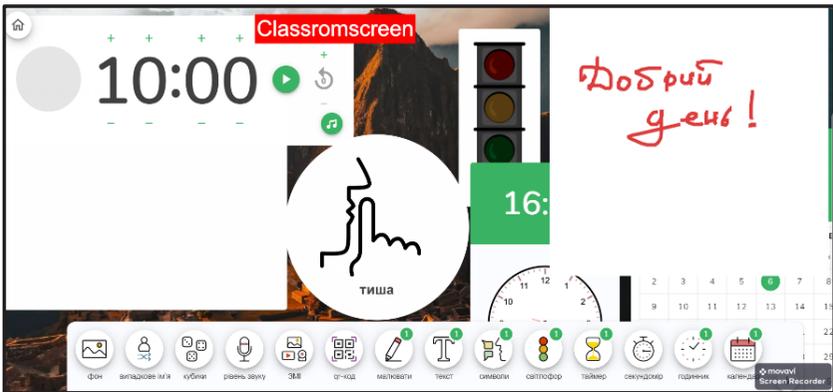
**Figure 11. Online blackboard Idroo**



**Figure 12. Online blackboard Classroomscreen**

technologies of a new level, since with their help a person fully or partly dives into imaginary (virtual) world or into real world added with computer models. Such technologies provide the effect of a full or part presence in an alternative space and therefore change this space for the user in absolutely different spheres. For a modern generation of students the learning process in augmented or virtual reality is natural and understandable.

Here are the names of some augmented reality (AR) programs that can be used in education: physics – Spacecraft 3D (https://apple.co/3izbybs), astronomy – Star Walk 2 (https://bit.ly/35YmaeI), astronomy, geography –

AR Solar (https://bit.ly/35VOvCD), Leonardo da Vinci's inventions – Vinci Machines AR (https://bit.ly/3c0Hzb8), design – LandscapAR (https://bit.ly/2Y0bDLL), geometry – CleverBooks Geometry (https://bit.ly/39RkGnR), architecture – Skyscrapers AR (https://bit.ly/2XX8RHg), building – Bridges AR (https://bit.ly/3sKpNyR), arts – Quiver-3DColoring App (https://bit.ly/3a6MtRx) [2].

Among the programs that give the pedagogue and students the ability to visualize mathematics, to conduct experiments and research while soling math problems, to create computer models of geometric objects and abstractions, as well as to effectively use these models for getting new knowledge, the most popular are the following tools: Desmos (https://www.desmos.com/?lang=uk), GeoGebra (https://www.geogebra.org/), Wolframalpha (https://www.wolframalpha.com/). We think these tools should be obligatory among a modern math teacher's didactic means.

Let us demonstrate the use of computer math system GeoGebra, whose didactic possibilities help effectively teach the students practically all chapters of math course [8].

Problem[1] (historic problem Abu al-Wafa'). How to compose a square from the three given equivalent squares?

The solution of many stereometric problems is based on the use of the principle of equivalence of the figures. For proving the equivalence of the figures in geometry we use two ways, one ow which is called the method
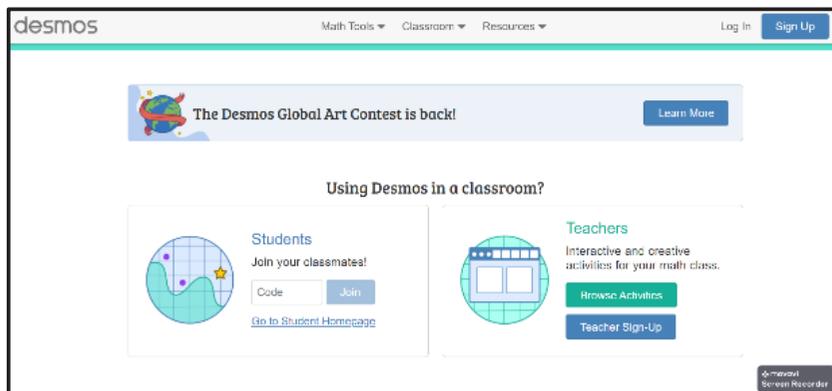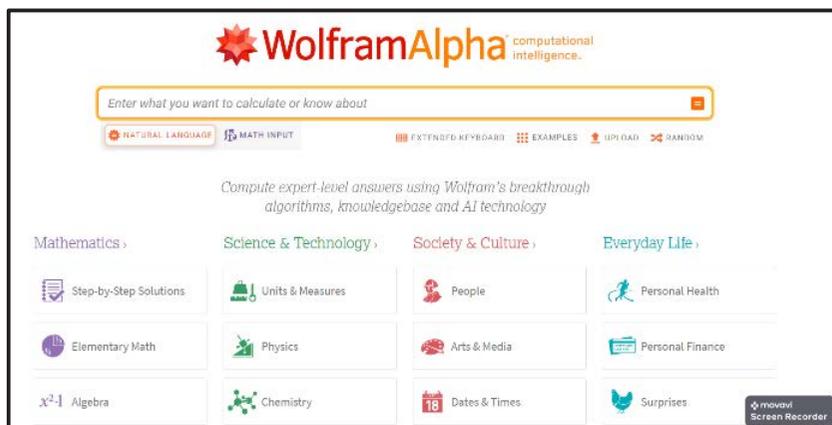


**Figure 13. Math tool Desmos**
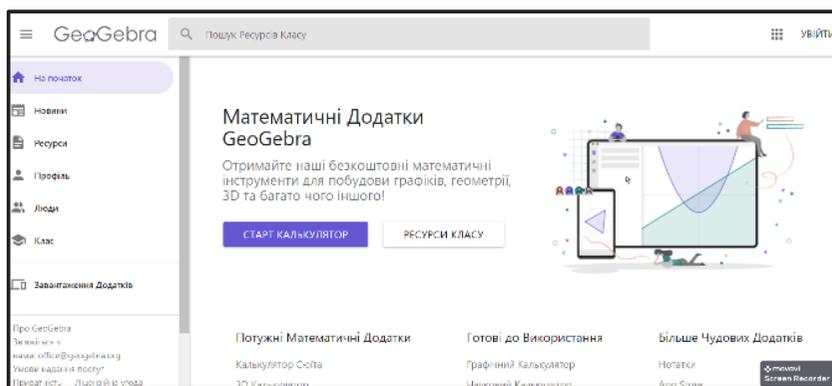
**Figure 14. Math tool Wolframalpha**



**Figure 15. Math tool GeoGebra**

of fragmentation and the other is method of adding. The use of the methods of fragmentation and adding makes solving of many geometric problems more original, easier and more available for the students of different age and specialties. Let us demonstrate the examples of stereometric problems that need the use of original ideas od constructions [9].

Problem 2. Fragmentate the cube into three equivalent pyramids.

A way of cube fragmentation into three pyramids is shown on Figure 18.

Problem 3. Fragmentate the cube into 6 equivalent tetrahedrons.
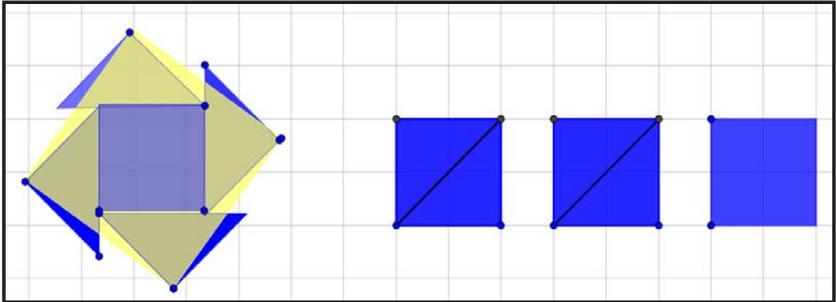
**Figure 16. The solution of Abu al-Wafa' problem**
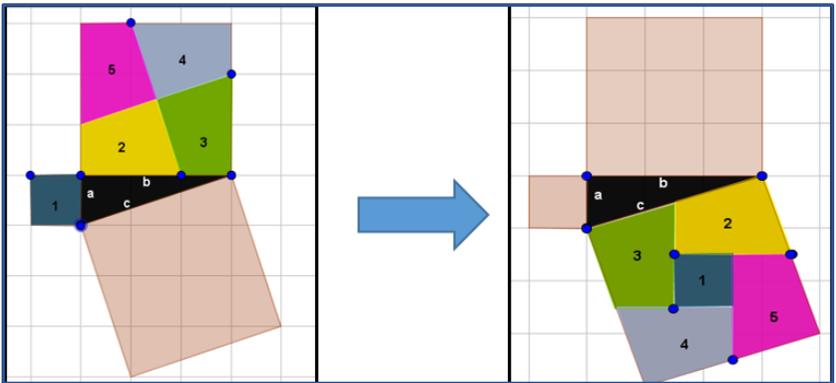


**Figure 17. Henry Purcell's scheme for Pythagoras' theorem**



**Figure 18. Cube fragmentation into three pyramids**

**Figure 19. Fragmentation of the cube into 6 equivalent tetrahedrons**

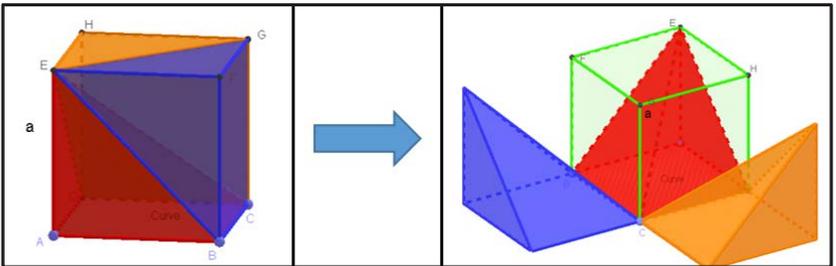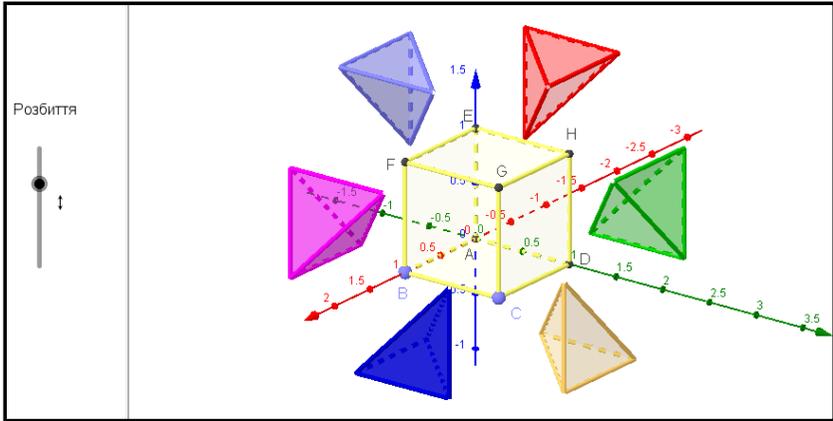Problem 4. Fragmentate the cube into 6 equivalent pyramidss.

Problem 5. Is it possible to fragmentate one wooden cube into three equivalent tetrahedrons with singular bond?
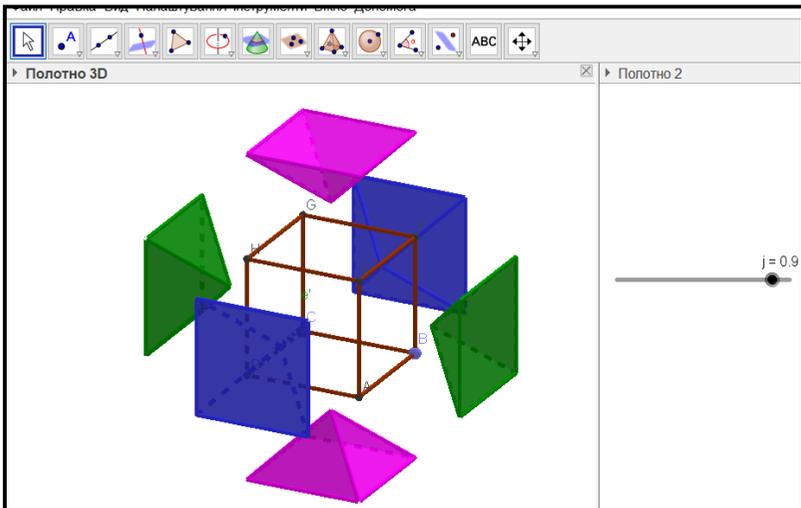


**Figure 20. Fragmentation of the cube into 6 equivalent pyramids**

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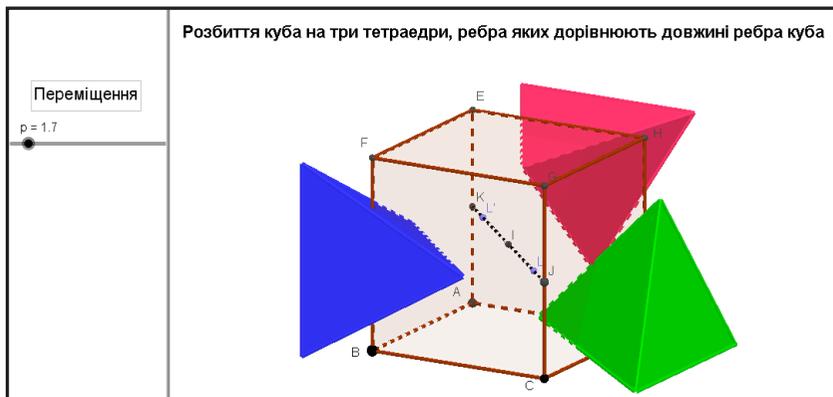
**Figure 21. The way to fragmentate a cube into three tetrahedrons**

Differential geometry is one of the most complicated subjects in the formation of math teachers, since when researching geometric objects the student should have integrated knowledge of linear algebra, analytic geometry, math analysis, differential equations and has to do difficult sums and transformations. It should be noted that the differential geometry methods for curves and surfaces have a lot of uses in applied mathematics, field theory, mechanics, optics etc.

The use of the tool "GeoGebra" for teaching differential geometry can be applied for making illustrations and animation (Figure 22).

With its help you can find out the curvature and bend of the curves in the definite point as well as represent them as functions from the parameter and
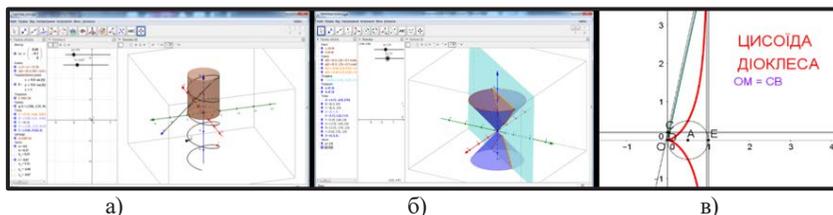


**Figure 22. The visualization of geometric objects: a) helical line;
b) hyperbole as the line of surfaces crossing; c) cissoid of Diocles**

a)                                        b)                                        c)
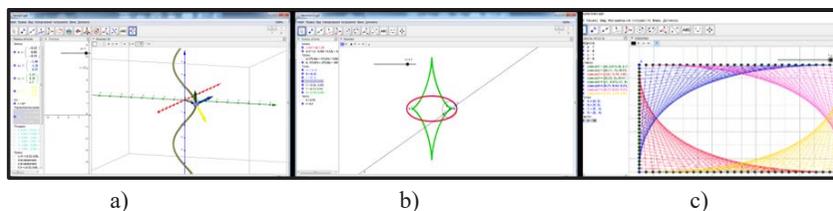
**Figure 23. Interactive geometric objects:**
**a) trihedron; b) elipse evolute; c) Bézier curves**

construct diagrams of transformational changes of the curvature and bend of the curve (Figure 23).

The setting up of math programs GeoGebra into smartphone heightens its math functionality. The use of smartphone makes learning process mobile, locationally and technically independent from the computer tools of educational establishment.

It should be noted that the students, after getting the preliminary skills for working with "GeoGebra", have the ability to collectively and independently sreate graphic images and animations for the studied topics (Figure 24).

The learning with the use of smartphone gives the possibility to:

– make this process interesting since this kind of work is unusual and has a wide range of multimedia possibilities;

– effectively solve the problem of learning demonstrative materials, freely search for the necessary study material with the help of the Internet;

– individualize learning process;

– independently analyze and correct the mistakes, correct their work thanks to feedback, improve the skills of self-control;

– conduct study and research activities independently [5].



**Figure 24. The use of smartphone in learning**

Thus, the mentioned distance learning tools give every pedagogue the possibility to choose their own way and technology of their use. In pandemic conditions distance learning is the best way to get education, since, firstly, keeps all the participants of intellectual interaction from potentially dangerous contacts. Apart from this, it has a wide range of advantages: it makes the learning process cheaper for the students from other regions, gives a quality access to the education for people with limited abilities; heightens the level of sensible attitude to studies, motivation; gives introverts the possibility to better show their abilities etc. New technical devices in many ways simplify students' life, allow them to quickly get acquainted with different materials, have unlimited abilities for developing technical thinking, economy of efforts and time for getting necessary knowledge, give instant access to informational materials. Wide use of informational technologies promotes the formation of one educational space.

### 3. Didactic specifics of distance learning

Distance learning can be synchronous and asynchronous. When it is synchronous the student through the means of video, audio connection, communication in a chat has immediate contact with a teacher. When it is asynchronous the student independently or with the help of teacher plans the process of getting new knowledge.

Synchronous interactive work is effective, since it means full interaction between the participants of learning process, as well as the possibility of extra explaining, corrections, comments etc. Apart from this, such technologies allow to save the recordings of the lessons, which the student can address if needing for rewatching or relistening the material or if he/she did not have the possibility to attend the lesson. The effectiveness of interactive lessons is higher than the effectiveness of ready beforehand video materials" [3, p. 45].

When the studies are asynchronous, it is important to wisely plan and form precise step-by-step instruction of working on the topic and achieving study results, to give time for consultations and individual work. Digital way of interaction, particularly during asynchronous studies, gives wide range of possibilities for differential learning, when the student gets the task which is suitable for his level of mastering the topic, and gets to the next level only after quality knowledge of the previous one.

The best results are after a mixed way of learning, when we meet the students in synchronous way (for instance, during a video conference) and at the same time use asynchronous studies. However, the main point is to wisely combine the two ways of distance learning, since the students can have different circumstances for missing "live" contacts, individual plans.

At the same time, distance learning has a range of disadvantages: insufficient socialization, when there are no proper contacts between the learning process participants; inability to compare your own results with your classmates' results during in-between control; the absence of eye contact, which makes it impossible to know the level of understanding the material by the students; loss of motivation by a great part of students, particularly first-year, especially – when teacher's control is not sufficient, and the result is students' speculation on technical problems, the temptation to use forbidden materials during the tests etc. While the students spend a lot of time in front of the computer or smartphone, they "…lead immovable way of life, sit crooked, with bent heads and elongated necks, which negatively influence their build, breathing organs and blood circulation. Their eyes overstrain themselves and do not have any rest… Their physical health is in bad condition at this time. As a result, there are a lot of young people with the defects of posture, weak eyesight, undeveloped sufficiently physically, overweight and with metabolic diseases.

Additionally, it is worth noting that when spending a lot of time in front of electronic devices, … they communicate very little, do not use socially accepted rules of interpersonal communication, do not think about emotional problems of their classmates etc., they do not learn how to empathize. They become emotionally empty, while their most precious thing is to sit in a quiet place in front of their computer alone. In this way human nature is deformed, they lose the ability to perceive the world and society on psycho-emotional level" [6, p. 29].

But in the end, in spite of all these disadvantages, in today's pandemic situation, distance learning of the students, as temporary way of intellectual activities, is out of the competition, since its advantages have no doubts, The main task of pedagogues is to promote the development of students' motivation.

Educational process in any way is built due to the logic of cognitive activities and scientific organization of pedagogue's and students' activities.

It does not matter where the pedagogue will work, in a real or virtual classroom, when preparing for the lesson, he/she needs to set the aim, to achieve it think about the tasks, to choose effective didactic methods, proper educational means and materials, to model the stages of the work, i.e., to use the methodical tools prepared by native and foreign pedagogy. At the same time, we should react to the challenges of time, to the demands of modern reality, which invade educational process forcefully and cause the transformation of set notions and ways of work, we need to quickly adapt to the new conditions of cooperating with the audience, to master new interactive methods, means (mainly – technical ones), platforms, services etc.; to plan educational trajectory for the students to learn new knowledge and skills, and then to choose digital tools for achieving the set aims and realizing educational project; to use the principle of pedagogical expediency of using the means of new informational technologies, which demands pedagogical estimation of every step of the projecting, creating and organizing distance learning system; to choose proper correlation of different distance learning means. For example, for 10-11 forms pupils and first-second year students the correlations of different educational means can be the following: printed materials – approximately 40%, educational materials on WWW-servers – approximately 30%, computer video connection – approximately 20%, other means – approximately 15%.

Estonian math and informatics teacher, educational spaces designer, pedagogical consultant and educational blogger Maryna Kurvits thinks that it is the resulting quality of forming pupils' motivation to learning that will define pedagogical talent of a teacher in new conditions. Will the pedagogue be able to explain new material well and understandably for every listener, to show the solving of a problem or a sentence analysis, to correct the mistakes, to correct the understanding of a topic, to achieve effective feedback online, to give a feeling of self-confidence, to find educational content that will interest a modern student, to find new forms of learning activities or adapt the existent ones to the new study technologies, will he/she be able or willing to be an all-day consultant and helper for the student? New challenges give a lot of questions [12].

Well-known modern pedagogue, the author of humane pedagogy concept Sh. Amonashvili gives a question about the kind of a teacher we should have in these conditions and gives an answer full of love and soul: "Thousand

times more interesting and sympathetic than usually. Just remember how your children watch movies or their favourite singers' videos – they cannot miss a second. Just believe that you also can be like a star or even more interesting for the children! Yes, this is a forced way of learning, through the screen, but we do not know if it can be our new reality which can repeat. That is why I ask you to talk to the children through the screen soulfully: "Hello, Mary! How are you doing? Sasha, is your mom at home? Let her also watch the lesson if she wants". Do not be afraid to ask your listeners for the help: "Children, I you're your help with…". Only thanks to live chatting during distance lesson it will be "alive". You should feel that you are talking fascinatingly. That they want to listen to you even without the picture. And one more secret: wear smart clothes for your online lessons. Take care of a nice background. Prepare demonstrative materials. Our technical devices enable us to use the most modern methods, so try different ones and find yours. If a teacher does not use all the possibilities of distance learning, he/she becomes poor. And remember to take care of yourself in the process. Cherish your voice, take care of your words, your joy of communication with the students, multiply your love. We will live through this challenge together. Stand firm! I wish a great success for every Ukrainian teacher" [1].

The teacher of a high school or secondary school has to consciously transform his/her methodical approaches to form and keep a proper level of pupils/students' motivation, to build their educational trajectory. In this process the pedagogue will grow creatively and professionally, while he/she will rise to the new didactic heights that are not yet described in scientific works, therefore making his/her contribution into the development of the teaching methodology.

It is worth noting that methodological problems are not the only ones that the teacher should solve. Apart from them, they should think about technical, organizational and hygienic gaps that should be filled by the pedagogue, often by finding other ways. To technical ones we should count improper quality of Internet connection, especially in small far from the center villages; the absence of computers and additional devices for audio or video recordings. The solving of organizational problems means the mastering of technical devices and digital tools. Pedagogical and students' communities are also waiting for health keeping, hygienic recommendations, which should be directed at saving educational interaction participants from dangerous influence of gadgets. Because of this, we obviously should

define optimal duration of online conferences and the breaks between them, which ultimately will not only promote the prevention of physical and psychological diseases but also will increase the effectiveness of the lessons and the quality of mastering the educational material.

It should be emphasized that online learning means not only the process of transmitting the information through the Internet but also is a cognitive and social process, that is why we should model the lesson in a way that the functions of cognition and participants' interaction would be central ones.

Detailed, complex approaches to the distance learning technologies, including general and special methodics, should be created, tested, analyzed, corrected and recommended for a wide pedagogical community with the main aim – to achieve the results of the virtual interaction of a teacher and students that would not be worse than traditional ones, or even better.

On creating such works are working actively the teachers of humanist, technical and math disciplines. Humanist education and science is moving a little slower in this direction. Particularly, nowadays in this sphere there is not enough research directed at the improvement of educational process be means of informational and communicational technologies. Because of this, we think it suitable to demonstrate the fragments from our own experience of distance work in the sphere of learning historical and linguistic disciplines, which are in the curricula of Ukrainian philology. Traditionally to this cycle we can refer the introduction into the historical learning of Ukrainian, historical grammar of Ukrainian and the history of the Ukrainian formal language. These disciplines are difficult and traditionally need a lot of efforts from the teacher and students, especially in the periods when it is impossible to work offline. Rather effectively we could do it on the platform Zoom. Messengers, e-mail etc. were really helpful. In the process of learning the material, a great role is played by the testing of students' knowledge level, which is conducted distantly.

Its mechanism we described in details on the material of the Old Slovenian Language [4]. Such control thanks to its high technological status has a lot of the advantages over the traditional one, since, firstly, it gives the ability to synchronously test a lot of the students, to quickly get the results, which are always objective, without the subjectivity of the teacher.

Additionally, such way of testing gives the student the ability to assess his/her own level of got competences.

While making the tests on historical and linguistic disciplines you should keep to the rules emphasized by I.I. Kartashova and V.M. Prokhorenkov [10]: to avoid the templates; to use simple sentences, since the word combinations can have different meanings and long syntactic constructions complicate the understanding and take a lot of time; to be clear; to use formal words: to avoid informal constructions such as dialects or slang; to make the answers similar grammatically; to avoid the distractors such as "all answers are correct", "there is no correct answer", "no answer is correct", "likely", "sometimes" etc.



**Figure 25. Video materials created in TikTok**

According to mentioned above we think it wise to give methodical recommendations for organizing distance learning.

1. You should use different educational web-resources and online platforms, interactive exercises, virtual blackboards etc.

2. You should give your students the links for multimedia materials, educational video films, video and audio recordings of lectures and practical lessons to understand educational material.

3. For keeping feedback you can suggest your students to use online testing. Using online services for teachers, platforms for creating the tests, your own tests.

4. You should analyze and assess all types of tests, practical works, tasks and other kinds of individual work.

5. You should conduct, apart from group ones, extra individual online consultations with the help of video connect, chat.

6. Distance learning should be conducted in short periods (approximately 30 minutes). For example, the structure of 30-minute lesson can be the following:

– 5 min. – screen demonstration + 25 min. – the answers to the questions in a chat or video conference;

– 15 min. – video conference with a task + 15 min. – independent work;

– 30 min. – topic analysis, students' works analysis in video conference;

– 10 min. – thematic video + 20 min. – doing the task with feedback;

– 20 min. – exercises + 10 хв. – general conclusion.

After the period of the exertion, there is a period of relaxation (5-10 min.), during which they can distract themselves, do something else.

7. Online lessons should be conducted not like the lectures but by the way of explaining the material, emphasizing on the problem moments and finding out the level of students; understanding the new topic.

8. You should differentiate of the learning with the help of hyperlinks to proper extra exercises, reference materials, extra explaining etc.

9. You should give your students distinct instructions to the order of doing homework.

10. On the conditions of distance or mixed learning, you should choose the tasks that keep the students motivated.

11. While conducting the lecture, you should talk and not read from the screen, since the attention of the students of middle and senior ages becomes weaker after 10-12 minutes from the start of explaining. The younger the student, the faster he/she becomes distracted.

12. During the distance learning, the volume of given material should not be more than 2-3 screens for pupils of 8-11 forms and first-year students, that is why the demonstrative materials should be used for explaining the main thoughts of the text.

13. While forming the skills, group work, when the students can exchange their thoughts and achieve common result, can be effective by the way of the forum, news board, tele-conference.

### 4. Conclusions

During the last decade distance learning became one of the productive and effective forms of the interaction between the pedagogues and students. Its advantages are unquestionable, since it enables to freely join the education in the most prestige establishments of Ukraine and the world, to become the participants of the video conferences conducted by the most reputable scientists and pedagogues, to pass exams, which give space for the further education etc. The processes of introducing the technologies of distance education in Ukraine were conducted mainly in

high schools where the students have a high level of motivation to the education.

Distance learning spread with new force because of today's challenge, which invaded all the world – the emergence and fast spreading of the virus SARS-CoV-2, contagious and deathly one. To keep the people from having the disease and creating social distancing the governments of most of the countries introduced a strict quarantine, which, among other safety precautions, meant the distance form of work for educational establishments. It made the pedagogues of secondary and high levels of education to quickly master Internet platforms and other tools of distance interaction.

Accumulated practical pedagogical experience of widely introduced distance learning needs theoretic work and generalizing to correct the didactic theory and practice. That is why it is important for experienced teachers to demonstrate the results of their own searching, conclusions and methodological recommendations.

The possibilities of distance learning tools are very wide and the better the pedagogue masters it, the more perfect his/her didactic system, as well as the educational process, becomes. Surely, you cannot interchange "live" communication with the students by the distance technologies, that is why we look at distance learning as a temporary process, however its elements have introduced themselves into our life and will not be deleted.

Based on our own experience of pedagogical activities in the pandemic conditions, we consider it suitable to demonstrate methodological recommendation for increasing the effectiveness of learning process: to use different educational web-resources and online platforms, interactive exercises, virtual blackboards etc.; to give the students the links for multimedia materials, educational video films, video and audio recordings of lectures and practical lessons to understand educational material; to keep feedback you can suggest your students to use online testing; to analyze and assess all types of tests, practical works, tasks and other kinds of individual work; to conduct extra individual online consultations; during the conference to work no more than 30 minutes with a little break afterwards; to use interactive methods to stir up the mental activities of the students; to use the system of hyperlinks for extra informational materials; to choose the tasks that heighten educational motivation of the students; you should organize group work for communication between your students using distance learning tools.

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