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Вченою радою ЗУІ
Протокол № „3” від „27” квітня 2021 р.
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Кафедра філології

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Кваліфікаційна робота

ЦИФРОВЕ НАВЧАННЯ ДЛЯ ЦИФРОВОГО СЕРЕДОВИЩА

ТОВТ ВІВІЕН ЖОЛТІВНИ

Студентки _4__-го курсу

Освітня програма 014 Середня освіта (мова і література (англійська))
Ступінь вищої освіти: бакалавр

Тема затверджена Вченою радою ЗУІ

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Ferenc Rákóczi II Transcarpathian Hungarian College of Higher Education
Department of Philology

DIGITAL LEARNING FOR THE DIGITAL ENVIRONMENT

Bachelor’s Thesis

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Professional Education program:
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Second reader:

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ЗМІСТ

INTRODUCTION

The continuous development of technology can be considered one of the driving forces of today's world. This technological development accompanies people in every corner of their lives. Be it the kitchen or the living room in our own house or even outside our home for example the classroom. During the pandemic, it was very evident that we are very dependent on several technological tools, especially in the field of education.

As a result, several company's app developers developed ways of keeping in touch with the teacher in a virtual classrooms during the pandemic period and ensured the continuation of education in the world of the Internet. But as it seems it was not enough. Since the new classrooms were introduced, the teachers had to come up with new ways to transfer their knowledge and the students also had to get used to online education and submitting their works, taking tests online. The topicality of my topic lies in the modern education system and the tools that can be used in it. The digital learning environment encourages and even demands the use of technology, digital tools and online interfaces. In a world that is constantly evolving and moving towards digital development, it is essential to develop education in an innovative way. With the help of DLE, students have access to more quality and fresher information to facilitate their learning.

During the elaboration of this thesis, education in the digital space is presented, as well as the multitude of tools necessary for it to work efficiently and to ensure that children get the amount of knowledge necessary for them to be able to go into higher education or just to be able to apply for jobs. We can also acquire insight into a comparison that includes education before and after the pandemic. In addition, it contrasted the so called online and offline education.

The aim of the thesis is to show how important it is for students and teachers to be able to navigate in the world of digital education and to be able to make full use of it for the sake of education. After the understanding of the world of DLE the next aim is for the reader to be able to understand the meaning of the place-based education system, which includes how did the traditional schooling system change into online institutions. The last aim that needs to be acquired is to able to present the role that a teacher plays in the classroom after DLE.

While writing the thesis work the following tasks were formulated:

- for the reader to able to comprehend the concept of Digital Learning Environment;
- to be able to navigate through the world of the Digital Learning Environment;
- to be able to see understand the meaning of place-based education;
- the explanation of the difference between online and offline institutional education;
- to present the role and place of a teacher in the digital and real world.

The scientific novelty of the thesis can be listed as follows:

Although the concept of digital learning environments and e-learning cannot be considered as a novelty, the detailed description and exploration of the tools needed to teach in these environments, with examples, contributes to the existing knowledge base.This is presented in the first part of the thesis. The information presented in this part can provide new insights into the practical implementation and effective use of digital teaching tools.

By presenting educational changes before and after the emergence of digital learning environments, this section explains what we need to understand about the transformation of educational institutions. More precisely, it shows how the traditional school system has been transformed into online institutions with valid qualifications. It highlights the disadvantages and challenges, benefits and consequences of integrating digital technologies into traditional educational environments.

The object of the thesis is the Digital Learning Environment.

The subject of the thesis is education in the digital environment and the impact it has on the traditional teaching system.

The thesis paper was written by using different sources of secondary information. The main source of information were websites, books and research papers. This method of research includes gathering information and analysing existing literature, documents, and sources to address research questions or objectives.

This thesis work includes several methods of research. Main method of research was Literature Review, which means that a significant amount of work has been reviewed and

interpreted, containing studies on this topic or related to this topic. It should be noted that, the importance of this method lies in defining the theoretical framework and expanding the knowledge gaps. The following method that corresponded in the writing of the thesis work was the Survey Research. A structured questionnaire was designed to collect data from the participants' responses. This method provided insight into the attitudes, behaviours or characteristics of a particular social group, in this case teachers, students and parents.

The theoretical part of the thesis work is that the work contributes to the existing knowledge base about DLE by describing and exploring in detail digital learning environments, tools and their practical implementation. It helps with broadening the understanding of how technology can enhance or even undermine education. The practical part of the thesis work is that the work provides insight and practical guidance for teachers and students navigating the digital learning environment. Moreover, the work describes the tools needed for the DLE to work in the right way. The work highlights the differences between traditional schooling and online institutions, and emphasises the role of the teacher in the digital and physical classroom.

The work consists of two parts and a research. The first and the second parts are divided into three different subsections.

The first parts contains education in the digital space, its presentation and a detailed description. In addition, in this parts necessary tools can be found the for teaching in this digital learning environment. Moreover, this parts describes the difference between teaching and learning in the digital space and the concept of “e-learning”.

In the second parts, as the title suggests, the impact of DLE on teaching institutions are presented. This parts will discuss what education was like before and how it is today.

The final part of the work contains a researched based on a survey, which is an empirical method of research and to be more precise it is a qualitative method of research. The survey is going to assess the knowledge of university students, secondary school and high school students, parents and relatives and teachers regarding digital learning, especially during the Pandemic and its aftermath.

PART 1

DIGITAL LEARNING ENVIRONMENT AND TOOLS

1.1. The history and development of the Digital Learning Environment

Education in today's world will never be the same as it was ten years ago. You don't even have to go that far if you observe the events of the last two to five years. The past five years have made people realize that we were not prepared for major disasters and natural phenomena of any kind. There was one such phenomenon that happened not so long ago. This natural calamity that weighed down the world was the COVID-19 virus.

When the period of COVID-19 arrived, to put it mildly, everyday life collapsed. Suddenly, people's health, the way they lead their lifestyle, safety and even their lives became a serious issue. As a result, shops, entertainment venues, schools, universities, kindergartens, workplaces, gyms are pretty much everything that represented the standards of everyday life. Unfortunately, this "new" everyday life dragged on for a very long time in Europe, and even longer in America.

With the closing of the kindergartens, schools, universities, the future of education became uncertain. Directors of schools and educational institutions, as well as teachers and instructors, were forced to continue educating children from a completely new approach and environment. However, not only the teachers found this new system unusual and quite hard to get used to. The students also had to get used to the environment they suddenly fell into. They had to get used to not being able to talk to and see their friends every day, not being able to talk to their teachers if they have a problem or difficulties with studying.

That's when people realized that no one was prepared for this. No one had even a Plan B for this kind of situation and not to mention a Plan C. Everyone was forced to use the Internet, their phones and computers for not just entertaining activities. During this time, the creation of new programs and applications began to arise. These programs helped teachers and students to maintain a somewhat decent education and communication. A virtual space was created in the large network of the Internet, which was completely dedicated to education (containing lessons and test).

This educational online space forms an ecosystem, which includes the values, ideas, insights, applications, programs – which are the non-physical features and physical features of its users, by which I mean computers, phones and other electronic devices. This space forms the classroom, the lab, and the library. In this space, teachers and students can meet, discuss

things, hold classes, and assert themselves. Here you will find the requirements and the submissions.(15)

The very concept of what exactly the digital educational space – is an open set of different information systems (ecosystems) that are used to support the educational process of the educational institution.

In the paragraph below, an illustration can be seen. This illustration explains the benefits, that each segment derives from using this digital environment.

Figure 1.1.1.

What does digital education give to those who are using it?

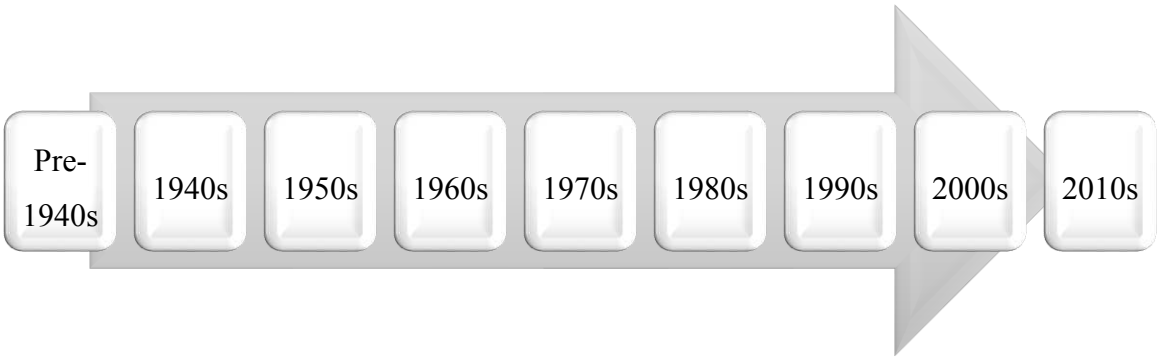
Since this education in the virtual space has become very popular in the last two or three years, because of course we needed it, everyone believed that it is a completely new thing.

Nonetheless, this is a big mistake. Everyone believed, the virtual educational space is a new discovery. Like anything that was invented, it has its own history. The history of the digital education space also goes back deep in history.

The history of the development of this educational space can be divided into 9 major stages.

Figure 1.1.2.

“Digital Learning Environment development chart”



The name of the first big phase, as shown in the figure above, is the period before the 1940s. During these ten years, a lot has happened in relation to the creation of the virtual space.

In 1728, people, including teachers and students, first learned about this news that education would be done in a "new way" and that applicants were being sought to learn that art. The following lines can be read in the article: "Persons in the Country desirous to Learn this Art, may by having the several Lessons sent weekly to them, be as perfectly instructed as those that live in Boston."(Cameron, 2002)

In the following, we can observe that American universities offer the possibility of distance education. University of Wisconsin–Extension from which he later promotes the establishment of home-study schools in the United States of America.

In 1892, correspondence education was officially defined at the University of Wisconsin-Madison.

Finally, between 1906 and 1907, the first educational institution using distance education was officially established. Which is called the University of Wisconsin-Extension.

Over time, Australia also joined the use of distance learning in 1909. What he did was that a member named E.M. Froster published a sci-fi novel called "The Machine Stops". The

story itself occurs in a time when people live under the fold and depend on giant machines to satisfy their needs.

And in the 1920s, an educational psychologist develops the first "teaching machine". This machine provided test options with different tasks, such as multiple-choice questions. And M. E. LaZerte expanded the range of educational machines.(58)

The next big period of developing the virtual space for learning is the 1940s, as the above-mentioned figure shows. However, in this period, it would be better to mention works that try to create a future picture of the future of education and humanity. One of them is Vannevar Bush's article entitled "As we may think" in the Atlantic newspaper. In this article, Vannevar Bush described a device called the “memex”. The article contained the meaning of memex, which is a hypothetical electromechanical device for interacting with microform documents.(6)

And the other was published in 1948. Norbert Wiener's work, in which he discusses communication between man and machine, in the book whose title is " Cybernetics or Control and Communication in the Animal and the Machine".(12)

The next period has a little more notable events compared to its predecessor. This period can be dated to the 1950s.

In 1953, the University of Houston was the first American university to offer to televise college classes to the public through KUHT (a PBS member television station in Houston, Texas, United States. Owned by the University of Houston System, it is sister to NPR member station KUHF). This live broadcast lasted from 1:00 p.m. to 3:00 p.m. every week. Thanks to this, they owned 38% of the program list during the broadcast of the television broadcasts. Due to the young students working with nyp, most of the broadcasts occurred in the evening. By the mid-1960s, they were able to teach more than 100,000 hours at KUHT.(24)

In 1956, Gordon Pask and Robin McKinnon-Wood developed the SAKI machine. This was the first adaptive education system that was also introduced in advertising. SAKI taught different things. For example, he taught his viewers or users how to use a keyboard, which, after measuring performance, set the difficulty level.

Between 1956 and 1958, Harvey White, a physics professor at U.C. Berkeley, taught physics classes to 163 high schools with the help of television broadcasting. Every 30 minutes of the lesson was recorded and transmitted to other schools.(51)

In 1959, the University of Chicago introduced the Sunrise Semester, a series of subjects taught via television.

As we move forward in the diagram, the next great era can be considered the 1960s.

Several discoveries were made in the year 1960.

First of all, there was a system development called PLATO (Programmed Logic for Automated Teaching Operations) at the University of Illinois at Urbana-Champaign in a study by Dr. Donald Bitzer-led project. Edmentum now owns certain rights to PLATO, including the trademark (formerly PLATO Learning), which offers managed course content over the Internet. The PLATO system had multiple helpful features including students being able to study assigned lessons and classes and communicating with their teachers and educators via online notes, teachers and educators being able to review and communicate student progress data.

There was also a fourth type of user to this system (the first three users are teachers, students and educators) called Concurrent User that was used for demonstrations of the PLATO system. There was also a project called Xanadu. It was the first known attempt to implement a hypertext system, founded by Ted Nelson.

Teaching Machines Inc, a group of psychologists, produced a series of programmed learning texts. The texts were built on the work of B. Skinner and broke down complicated tasks into a step-by-time activity system (Final Learning Objectives). Grolier and TMI marketed the Min-Max (a teaching machine) with machine programs and programmed textbooks.(48)

In 1963, the first computer for instruction was installed at Orange Coast College in California.

In this same year, Douglas Engelbart invents the computer mouse. Bill English constructed the prototype for the mouse. Engelbart later in 1970 was awarded for an improved version of the mouse.

In 1964, there were two main events that had a huge impact on the developing the Digital Learning Environment.

The very first authoring system for developing lessons and courses on a computer system was produced. It was called CATO, which means “Compiler for Automatic Teaching

Operations". It allowed on the PLATO system the development of different forms of "teaching logic" for mathematics and science.

In this year The Computer Assisted Instruction Laboratory was established at Pennsylvania State University, College of Education.

In 1967, The Division of Educational Research Services was formed at the University of Alberta. This system acquired an electronic optical examination scoring machine.

In 1968, a satellite TV-based system for high school students in rural areas, has been installed by the Mexican government. Initially, more than 6,500 students were served in 304 classrooms. Each classroom was equipped with a satellite dish and black-and-white screen television. The system is still in use. Although now Telescenduria reaches more than a million students in 16,000 rural settings in Mexico and several Central American countries.

An IBM 1500 system was put in at the University of Albertain 1968. On-line courses enclosed medical specialty coaching for the university' medical school. This technique was finally taken out of service on April 10, 1980, once twelve years of operation.

There was a postgraduate student, whose name was Alan Kay. He proposed a program called FLEX language. The FLEX Machine, a PC running the FLEX language is that the initial decide to develop an object-oriented programming-based personal computer.

1969 was the year, when a lot of new things were invented with the help of developing this kind of technology. There were many events that did not concern the education.

This very year Stanford University broadcasted 12 engineering courses on two channels over the SITN, which means Stanford Educational Television Network.(26)

The next period contains the 1970s.

Havering's computer guided learning system was developed in London, England. By 1980, more than 10,000 students and 100 teachers had used it in applications such as science, technology, math correction, careers guidance, and industry training.

Flanagan reports on Project Plan, where computers were used to manage learning, through a student-centered model that integrates information about past achievements, interests, and so on. the student to develop an individual study plan that served to guide the student through a series of teacher learning units. This was implemented through medium-sized computers and terminals in the schools. (7)

Computers were first used in elementary schools in Saskatoon, Saskatchewan, Canada.

In 1971, the MITRE Corporation begins a year-long demonstration of the TICCIT system among Reston, Virginia cable tv subscribers. Interactive television services enclosed informational and academic demonstrations employing a touch-tone telephone. The National Science Foundation refunds the philosopher project and funds MITRE' proposal to switch its TICCIT technology as a computer-assisted instruction (CAI) system to support English and pure mathematics at community colleges. MITRE subcontracts educational style and courseware authoring tasks to the University of Lone-Star State at Austin and religious leader University.(74)

In 1975, the NSF-funded TICCIT Project starts trying out English and algebra courseware at Northern Virginia Community College in Alexandria, Virginia, and at Phoenix College, a part of the Maricopa County Community College District device in Phoenix, Arizona. The changed TICCIT device helps 128 pupil terminals fabricated from changed tv units imparting textual content and images in seven colors, virtual audio, and a video switching tool to embed video into the laptop generated instruction. A specialized keyboard lets in college students to manipulate their very own development thru the courseware, which incorporates each tutorials, drills, and trying out. What is thrilling approximately TICCIT is that it turned into primarily based totally on a learner managed command language that allowed the person to control his or her very own sequencing and improvement of acquiring knowledge of strategies.(8)

In 1976, there was a project called Edutech Project of Encinitas California. Now it’s official name is Digital ChoreoGraphics of Network Beach, located ins California. Within the scope of the project a device was developed, called DOTTIE. This device was a TV Set-Top device linking the home TV to online services such as CompuServ and The Source via a common household telephone.

This same year at the Open University an experimental project was developed of what became the Cyclpos system. At that time it was called a telewriting or audio-graphic system todays whiteboard system. This system was in the hands of two different teams in the Faculties of Mathematics and Technology. The first team, out of the two, focused on storage on cassette tape of digital data to drive VDUs. The second one placed more emphasis on the transmission of handwriting over telephone lines. There were similar inventions in the US and France.

Coastline Community College was the first university in the United States of America that became a virtual college.(53)

In 1979 in Canada different groups and universities conducted an experiment called "Telidon" during the late 70s and early 80s. Telidon is an alphageometric videotex information system used set-top boxes with TV sets or PCs to display text and graphics. (9)

The next ten years are the 1980s. These years were more successful in the field of scince rather than teaching and education.

In 1980, the University of Montreal created a computer system, which taught written French. The whole teaching system was based on the students' achievements, so they could move at their own pace. The questions for tests were indicated by different factors.

In 1981, the University of Sussex in the United Kingdom generated an interactive learning environment for Artificial Intelligence and computing students. It contained hyperlinked teaching materials, an extensible text editor, multiple programming languages, and interactive demonstrations of AI programs.

Three years later, in 1984, in the Faculty Authoring Development Program and Courseware Authoring Tools Project at Stanford University, numerous teaching applications were constructed. These applications included tutorials for different classes, for example, economics, drama, history and so on.

At Nova Southeastern university, the Graduate School of Computer and Information Sciences accredited graduate degrees through online courses, giving out their first doctorate in 1985.

In 1985, Patrick Suppes, professor at Stanford University, obtained an equipment from the National Science Foundation to increase a first-year calculus path on the computer. After numerous years of improvement and testing in summer season camps, computer-primarily based totally publications in Beginning Algebra, Intermediate Algebra, and Precalculus had been created and examined throughout the 1991–ninety two instructional yr. In Fall 1992, after porting the software program to the Windows operating system, the Education Program for Gifted Youth (EPGY) was officially launched at Stanford University. This development made these courses available to qualified students' systems. These paintings persisted till 1983, while the Telidon coding shape has become a North American standard – ANSI T500 – NAPLPS (North American Presentation Layer Protocol Syntax).

1987 was the year, when in Norway at NKI Distance Education began its first online distance education classes. The courses could be attended through EKKO, NKI's self-developed Learning Management System.

Between the years of 1987 and 1991 numerous UK researchers groups with the Open University, the UK Department for Industry and the emerging European Commission DELTA programme to work on "educational environments" prototypes. The following projects were carried out: the Thought Box; the Learning Systems Reference Model; Portable Educational Tools Environment; and Transputer-Based Communications-oriented Learning System.

The first large-scale use of computer conferencing in distance teaching was held in 1988. The Open University UK launched "Introduction to Information Technology" with 1000 students per year.

In 1988 Question Mark created a DOS-based Assessment Management System. This system is used to provide people with learning experiences, reduced learning curves, confirmed skills, knowledge, and attitudes. The creators of this system aim to develop, supply and support an assessment platform, software, systems and services for computer-based education and training.(6)

In 1989, the World Wide Web was created by a young British engineer called Tim Berners-Lee. The whole invention began with a proposal, which stated an in-house online document sharing system. The inventor described it as a "web of notes with links".

In the same year, Illinois began offering computerized calculus classes at the University of Illinois.

This innovative approach to education allowed students to engage with calculus material through digital means, enhancing their learning experience and accessibility to the subject.

The introduction of computerized calculus classes demonstrated Illinois' commitment to leveraging technology for educational advancement, paving the way for more interactive and flexible learning opportunities in the future.

The next big chapter is 1990s.

The first bigger event in this ten years was in 1993. This year, Convene International collaborates with the University of Phoenix to make the first full collaborative distance education online model.

The next year, in 1994, Convene International starts offering the completed internet online education service to all schools.

In 1995 there was a professor called Jerrold Maddox, who taught a course on the web from 1995 January. This course was Commentary on Art. It was the first course, which was taught at a distance using the web.

Jones International University was the first accredited fully web-based university in 1996.

The 2000a were the last years of huge developments and new inventions. After these years, the programs and apps were only updated by different companies.

In January 2000 CourseNotes.com was founded by an entrepreneur and UT student called Alan Blake. This website provides its user with the following features: comprehensive professor web sites, course documents, calendaring, grading, quizzes and surveys and so on. The company was renamed a year later in 2001 to ClassMap.

Mid June this year Reda Athanasios established the idea of the Virtual Classroom, but needed supporting technologies to turn the idea into a reality.

The development of digital learning environments, also known as e-learning, has been rapidly advancing since the 2000s. This has been driven by advancements in technology, such as increased internet access, the rise of mobile devices, and the development of cloud computing. These developments have allowed for the creation of more interactive and engaging online learning experiences, as well as the ability to deliver education to a wider audience.

One of the key developments in the field has been the growth of Massive Open Online Courses (MOOCs), which began to gain popularity in the early 2010s. These courses allow anyone with internet access to take a wide variety of classes from top universities and institutions around the world, often for free. This has increased access to education for people in remote or underserved areas, as well as providing opportunities for lifelong learning.(4)

Another significant development has been the increasing use of adaptive learning technology, which can personalize the learning experience for each student based on their strengths and weaknesses. This technology uses data on student performance to adjust the pace and difficulty of the material, which can help to improve retention and engagement.

The use of virtual reality and augmented reality in digital learning has also been on the rise. These technologies have the potential to provide immersive and interactive learning experiences that can enhance student engagement and motivation.

The development of digital learning environments has been rapidly advancing since the 2010s. This includes the use of technology, such as learning management systems (LMS), virtual and augmented reality, adaptive learning, and gamification. These tools have been used to enhance the student learning experience by providing interactive and personalized learning opportunities. Additionally, the widespread adoption of mobile devices and the increasing availability of high-speed internet have made it easier for students to access digital learning resources from anywhere at any time. Online learning platforms such as Coursera, Udemy and Khan academy are also becoming increasingly popular, providing access to educational resources to people around the world.

Overall, the development of digital learning environments has been a significant advancement in education, allowing for more flexible and personalized ways of learning, and making education more accessible to a wider population.(40)

1.2. Digital Learning Environment tools. Definition and classification

Modern education requires a change in attitude towards learning and teaching. In order to achieve this, we first need to achieve the maximum activation and visualization of education. This process is greatly assisted by the use of various digital educational tools that allow the presentation and understanding of the necessary information. The new technologies affect all components of the education system: the goals, content, methods and organizational forms of education, the tools of education that enable solving the complex and urgent tasks of pedagogy, namely: the development of intellectual and creative potential, analytical thinking and independence of education. There are great opportunities in the use of digital educational tools during foreign language learning. Digital education integrated into educational subjects enriches the educational process with new forms, methods and working methods, which every child in a more fortunate situation goes through. The sum of these processes enables the activation of students' cognitive activity.

Today, digital technologies play a significant role in the development and improvement of the quality of modern education. Scientists offer various ways to solve the problem of the quality of education. In numerous studies, the quality of education is considered as an educational process and as its result. The quality of the educational process (the level of its

organization, the appropriateness of teaching methods and tools, the qualifications of teachers) in itself does not guarantee the quality of education as a whole, since its goals may not fully meet the new needs of society. Today, the meaning of the concept of "educational results" changes, the totality of which can be interpreted within the framework of the competence approach adopted in the world's educational practice. They are key competencies. In the context of modern ideas about the goals of education as the development of individual competencies, its readiness to solve new tasks and problems is important. The most traditional for modern methods of evaluating the quality of education are indicators of the quality of educational conditions. In particular, the quality of the implementation of the educational program is considered first.(95)

At the beginning, let us finalize the following concept in modern terms. Digital educational resources are digitally presented photographs, video clips, static and dynamic models, virtual reality and interactive modelling objects, cartographic materials, sound recordings, symbolic objects and business graphics, text documents and other educational materials necessary for organizing the educational process. (96)

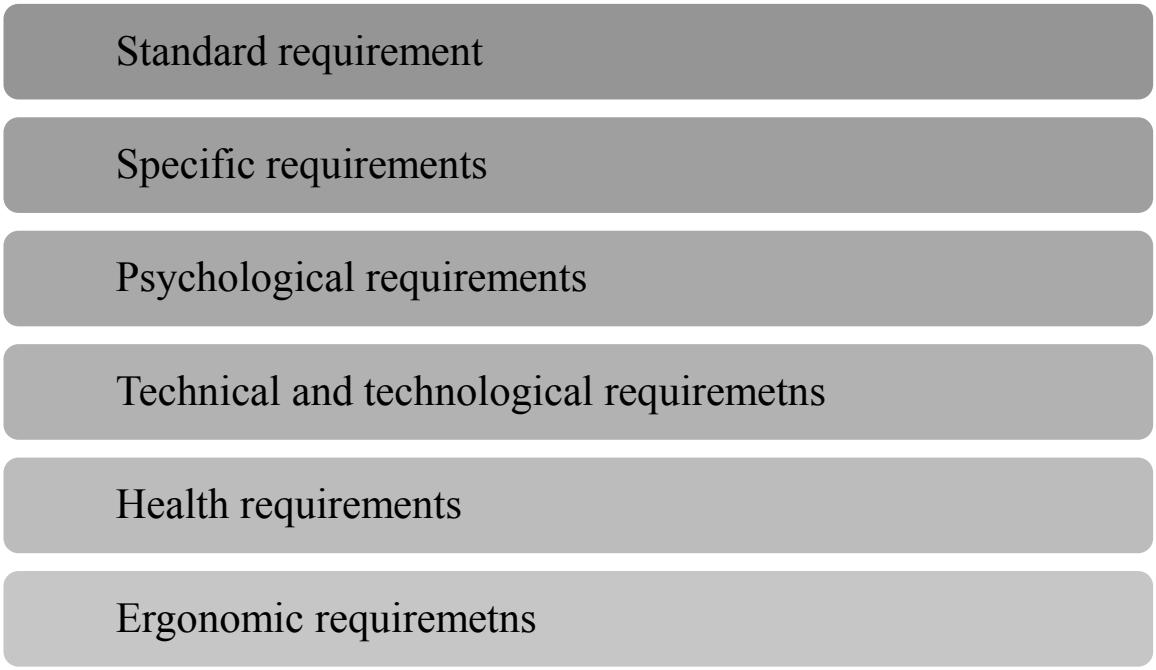
Pedagogical style of electronic academic resources combines information and data culture and multi-level inventive pedagogic thinking of the designer. Which means that of implementing pedagogical ability within the type of the structure of electronic educational resources, their content, management check tasks and pedagogical comments and relies on a multi-criteria analysis of compliance with educational standards. (87)

As every new concept, which helps with teaching and/or studying has expectations that has to be met by this new teaching and studying method. There are general expectations that the system itself must meet if instructors and teachers want to use it in education. These expectations are explained below.

But first of all, there are the following groups of these expectations:

Figure 1.2.1.

“The general expectations towards the new education system”



Standard requirements for digital educational resources are the following:

→ comply with the content of the textbook, the regulations of the Ministry of Education and Science (of the country it is used by);

→ focus on modern forms of education, provide high interactivity and multimedia education;

→ provide the possibility of level differentiation and individualization of education, take into account the age characteristics of students and the corresponding differences in cultural experience;

→ offer types of educational activities that orient the student to gain experience in solving life problems based on knowledge and skills within the framework of this subject;

→ ensure the use of both independent and group work;

→ contain options for educational planning, assuming a modular structure;

→ be based on reliable materials;

→ exceed the volume of the corresponding sections of the textbook, without expanding, at the same time, thematic sections;

→ be fully reproduced on the declared technical platforms;

→ provide an opportunity to use other programs in parallel with DERs;

→ provide, where it is methodologically appropriate, individual adjustment and preservation of intermediate results of work;

→ have, where necessary, built-in contextual help;

→ have a user-friendly interface.

Digital educational resources must not:

→ replace human interactions;

→ compromise the quality of education;

→ neglect the development of critical thinking and problem-solving skills;

→ disregard the importance of creativity and innovation;

→ represent additional chapters to the existing textbook / teaching materials;

→ duplicate the public reference, popular science, culturological, etc. information;

→ be based on materials that quickly lose their reliability (become obsolete).(96)

Specific requirements can be seen down below:

→ adaptability;

→ interactivity;

→ promoting the development of intellectual potential and communication skills.

Psychological standards:

→ emphasizing mental health and well-being;

→ reducing stigma and promoting mental health literacy;

→ encouraging positive relationships and social skills;

→ the presentation of educational material should correspond not only to the verbal, but also to the sensory-perceptive levels of the cognitive process;

→ the presentation of the educational material should be oriented to the vocabulary of a specific age group and the specifics of training.

Technical and technological standards are the following:

→ functioning of the electronic resource in the web space;

→ functioning under the control of various operating systems in local and network modes;

→ maximum use of multimedia;

→ maximum use of telecommunication technologies, reliability;

→ long-term operability;

→ resistance to defects;

→ availability of protection against unauthorized user actions;

→ efficient and appropriate use of resources;

→ simplicity and reliability of installation and uninstallation.

Ergonomic requirements:

→ the requirement to ensure a humane attitude towards the learner;

→ the organization of a friendly interface;

→ providing the learner with the necessary tips and methodological instructions;

→ providing the opportunity to choose the sequence of learning the material and the choice of the pace of work, which will avoid a negative impact on his psyche, will create a friendly atmosphere in classes;

→ requirements for the color characteristics of the software tool;

→ requirements for the spatial placement of information on the screen;

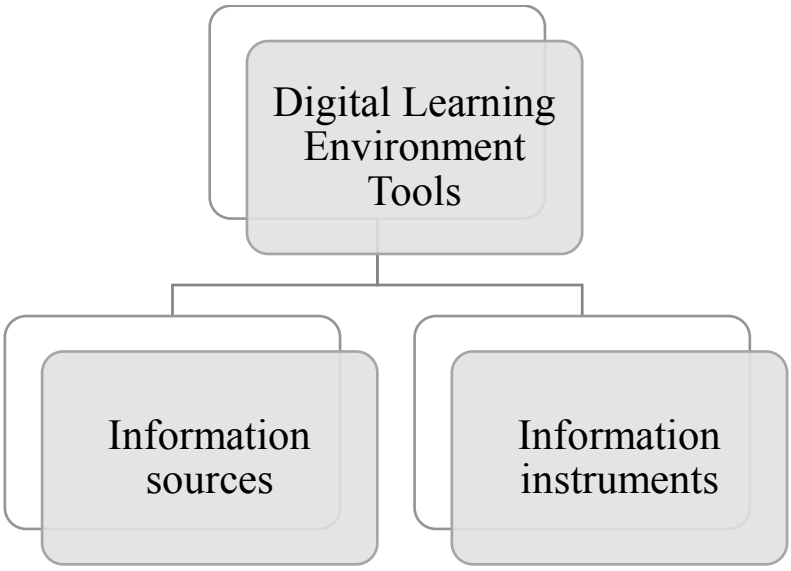
→ requirements for the organization of dialogue, requirements for the font design of symbols and signs;

→ requirements for sound accompaniment.(87)

In the following, it is very important to mention that this new type of educational aids do not only have countless expectations, but also it also has its components. To be more precise, Digital Learning Environment Tools have the following two parts:

Figure 1.2.2.

“Types of Digital Learning Environment Tools”



Sources of information are legally established databases and data banks with a wide type of representation, which are used in diplomatic practice, the activities of international organizations, in the regulation of international conflicts, and in the transfer of personal information.(80)

Depending on the amount or level of information they provide, the information itself, and the institution or author supporting said information, it can be divided into different sources.

Among the main sources, it is worth highlighting the primary, secondary and tertiary sources. However, depending on the information and location of extraction, there are additional classifications.(5)

We must note, however, that these terms are relative, depending on the field we are currently working in or seeking information is and topic, they appear in different senses, depending on what is called primary sources, and in what relation certain types of sources are called secondary or tertiary compared to primary sources.

In some areas of humanities and social sciences (applied linguistics, sociology, psychology), the communication of new results recorded during research based on direct data analysis, the publication of new results that have not yet been published is called primary, and the summary of other people's research results or theories is called secondary research, and the summaries , publications providing reviews as secondary literature.

In psychological research work, three basic sources are distinguished, these are as follows:

Preliminary sources – library catalogs, bibliographies, indexing/referencing databases. Indexing/referencing databases grew out of a special type of publication, indexing/referencing journals. In the past, they monitored each branch and prepared a regular bibliography from the latest literature of the branch. In addition to the bibliographic data, extracts of the articles (abstract, summary) were also published. In psychology, this was the case, for example, with the publication of the American Psychological Association, APA, Psychological Abstracts; a similar role in linguistics is played by Linguistics Abstracts, which provides short reviews of articles from 800 journals published in 20 countries. Indexing journals like this are now more integrated into online databases, such as the Modern Language Association's international linguistic, literary and cultural bibliography, which, connected to a full-text service (Literature Resource Centre), provides text and other (according to division primary, see below in point 3) contains sources.

Secondary sources: lexicons, encyclopedias, manuals, textbooks;

Primary sources: journal articles, technical books (monographs, edited volumes, manuals), dissertations, conference volumes that communicate original research results and ideas.

According to some classifications, tertiary sources include summary works (specialist encyclopedias, manuals, etc.) and instruments containing only data about documents - not textual sources - which can be used for preliminary literature research. Such are, for example, bibliographies, repertoires, and the international referencing/indexing services of specialized branches (in public discourse outside the library profession, these are also called specialist indexes), which usually process the material of numerous specialized periodicals in a database; in addition to the bibliographic data, a short extract and report (summary, abstract, resume) of the articles is also published.(29)

Depending on their format, information sources can be classified in other ways. Here are some other sources not cited:

→ General source

The general resource provides a wide range of information on a wide variety of concepts. At the same time, they offer information on historical dates, among other related

information. This includes encyclopedias, textbooks, manuals, etc. For example, Websites of reputable organizations, government agencies, educational institutions, and news outlets can provide reliable and up-to-date information. Examples government websites, academic institutions' websites, news websites, and websites of well-established organizations in specific fields.

→ Special resource

A specialized source, unlike a general source, provides information about a specific concept or a certain field of study or science.

This can be found in the case of scientific journals specializing in a specific field, manuals of a certain topic, or special portals that contain data related to the topic we are investigating. For example, professional associations and organizations often publish journals, newsletters, and reports related to their respective fields. These publications provide specialized information, research findings, and industry-specific updates to members and professionals in those fields.

→ Digital font

A digital resource is one in which information is discovered and accessed through a digital medium. This is the case with digital magazines, digital newspapers, and other electronic portals where information is offered. So to achieve this, we need an electronic device that allows us to obtain it. For example, font libraries and marketplaces, such as Google Fonts, Adobe Fonts, and MyFonts, offer vast collections of fonts that can be used for various purposes. These platforms usually provide information about individual fonts, including details about the type designer, font styles, character sets, and licensing terms. Some also offer filtering options and categorization to help users find fonts suitable for specific projects.

→ A textual or written source

A textual source is one in which the information it collects consists of texts and texts written on paper. This applies to books, newspapers, manuals and all material in physical format. For example, research papers present original research conducted by scholars and researchers. They provide in-depth analysis, methodology, results, and conclusions on specific topics. Research papers are often published in academic journals or presented at conferences.

→ Local source

A local source is a source that provides information about a problem that occurred in the same location as the source offering the information, and sometimes the institution that supports it.

Imagine a local newspaper in Quito (Ecuador) that covers an event that happened in the city and is the subject of the study.

→ National resource

This is the source in which the offered information and the institutions that support it are integrated into the territory of the country. That is, in the country where the information stated occurred.

Imagine a Spanish newspaper that tells what happened in Spain, what happened in the subject of the study.

→ International source

This is the source in which the information offered and the institutions supporting it are not integrated into the territory of the country. In other words, they are not in the country where the information stated occurred.

Imagine the British newspaper Financial Times showing what happened in Africa during the colonial period.

→ Additional resources

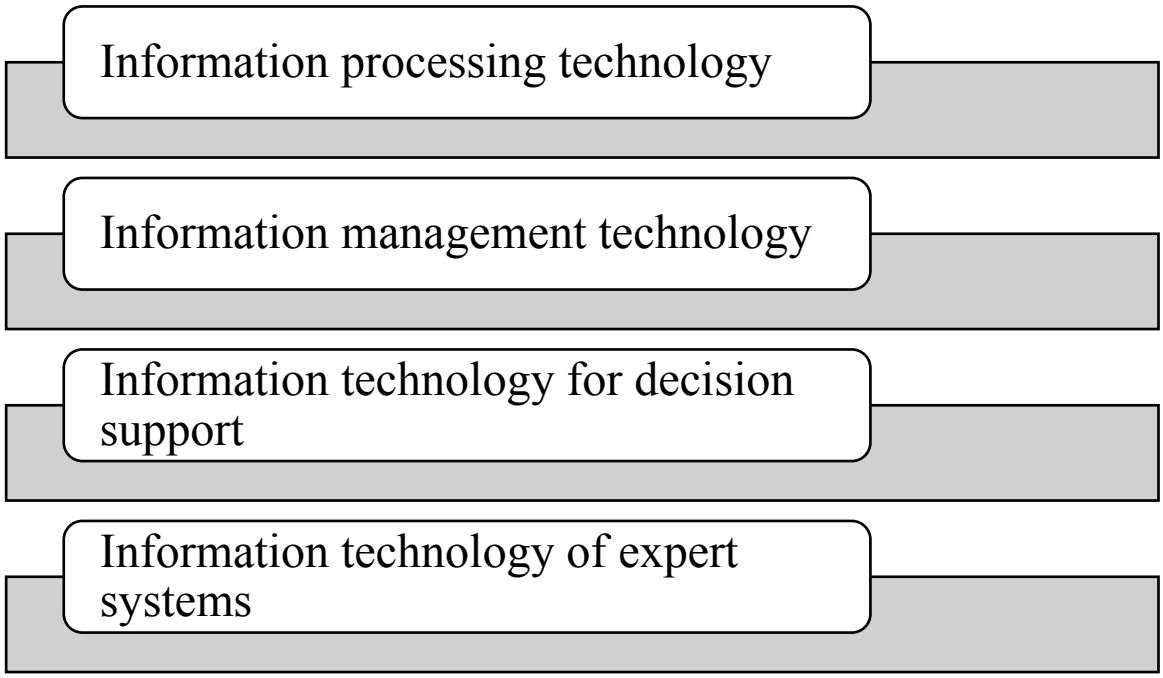
As noted, other types of information sources than those described can be analyzed. However, the most important ones are those mentioned in the first part, while the second part contains other alternative ways of classifying sources.(5)

Information technology, IT (the more general term information and communication technologies (ICT) is also used) is a system of methods, processes and ways of using computing equipment and communication systems to create, collect, transmit, search, process and distribute information for the purpose of effective organization of people's activities.(81)

There are different types of modern information technologies. They can be seen in the following diagram.(82)

Figure 1.2.3.

“The types of modern information technologies”



Information processing technology refers to the manipulation of digitized information by computers and other digital electronic devices, collectively referred to as information technology (IT). Information handling systems include enterprise software, operating systems, computers, networks, and mainframes transmitted or operated in any way, this is called information processing.(31)

Information management technology (IMT) refers to the methods, systems, hardware, and package an organization uses to conduct its everyday operations. Info management technology is additionally thought-about knowledgeable discipline wherever a student learns to manage the selection, distribution, and organization of all the technology and connected process during a business environment.

The budget line encompassing all those systems and therefore the prices of setting them up and maintaining them is remarked as information management technology. Info management technology is also referred to as information technology (IT), and knowledge management and technology.(30)

Information technology for decision support (DSS) is an automatic software used to assist determinations, judgments, and guides of movement in a company or a business. A DSS

sifts via and analyzes large quantities of data, compiling complete records that may be used to clear up issues and in choice-making.

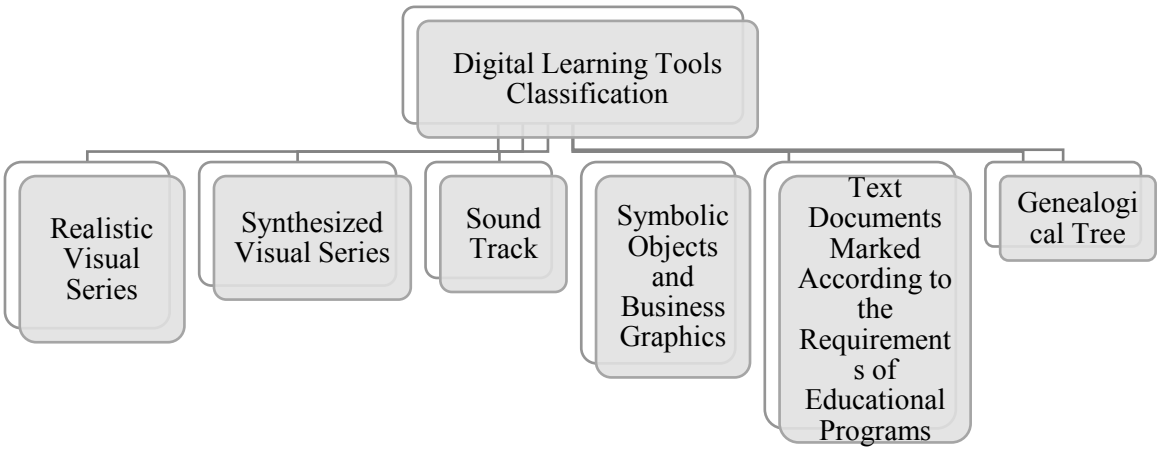
Typical records utilized by a DSS consists of goal or projected revenue, income figures or beyond ones from distinctive time periods, and different inventory- or operations-associated data.(62)

Information technology of expert systems could be a malicious program that uses AI (AI) technologies to simulate the judgment and behavior of a personality's or a corporation that has experience and skill in an exceedingly specific field. knowledgeable systems are sometimes meant to complement, not replace, human experts. (https://www.techtarget.com/searchenterpriseai/definition/expert-system)

In the following, we will learn about the classification of digital education. There are five groups by which Digital Learning Tools can be classified:

Figure 1.2.4.

„The classification of Digital Learning Tools"



- Realistic visual series: photos of exhibits, subject area objects, portraits, etc; video fragments of processes and phenomena of the subject area, demonstrations of experiments, video excursions, and others in accordance with the needs of the educational process.
- Synthesized visual series: two/three-dimensional static and dynamic models, presentation of imaginary elements, objects, hidden structures, processes, phenomena of the subject area (for example, in the macro and micro world, in ultra-short or very long time

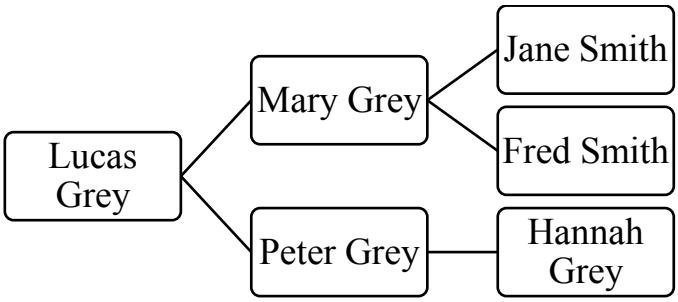
intervals); objects of virtual reality and interactive modeling (including those created in various virtual laboratories).

- Sound track: sound recordings of performances, musical works, sounds of animate and inanimate nature, etc., as well as synchronized audio and video objects.
- Symbolic objects and business graphics: schemes, diagrams, maps, explanatory texts, formulas, headings and other elements, including those created by the user using standard applications, cartographic materials.
- Text documents marked according to the requirements of educational programs: texts of artistic works, scientific works, historical documents, textbooks.(https://sites.google.com/site/inf13x14/home/types)
- Genealogical Tree – a schematic representation of family ties, a family tree of painting in the form of a conditionally symbolic “tree”, at the “roots” of which the ancestor is indicated, on the “trunk” - representatives of the main (by seniority) line of the genus, and on the “branches” - various lines of genealogy known to him descendants - "leaves" (this example illustrates the tree of "descending genealogy", which are the most common); but often, if it, the painting, is not stylized in the form of a real tree, which was very common in the past, the diagram represents the family tree in an inverted form, when the ancestor is located at the top of the table.(79)

A variety of Genealogical trees can be seen on the Figure 1.2.5. “The demonstration of a genealogical tree”.

Figure 1.2.5.

“The demonstration of a genealogical tree”



1.3. The definition of e-learning. The difference between e-learning and DLE

As you could read in the chapter, e-learning also has its own history since the advent of the Internet. Elliott Maisie coined the term eLearning in 1999, marking the first time the term was used professionally. In the years since, eLearning's reputation has faded. However, there are some factors which have caused eLearning to become the most popular type of training today. Some of these factors are:

Internet: Before the advent of the Internet, many relied on printed manuals, CD-ROMs, and other restrictive learning and training methods. The rise of the Internet enabled organizations to move away from one-dimensional practices and embrace the flexibility of eLearning. Multimedia Development – As e-learning has advanced, the ability to incorporate elements such as images, video, audio and graphics has proven to be a more reliable method of engaging learners compared to traditional learning.

Affordable Digital Devices: In With the first IBM computers costing nearly $5,000 today, it's understandable that e-learning grew in popularity as digital devices became more affordable. Mobile learning has also greatly facilitated the growth of e-learning.

Well-designed learning management systems: LMS have become more sophisticated, evolving from on-premises to cloud-based systems, and are increasingly being used by organizations to deliver various types of training. There are numerous things to consider when choosing an LMS; At the very least, make sure you have the functionality and support you need to achieve your goals and those of your students.(72)

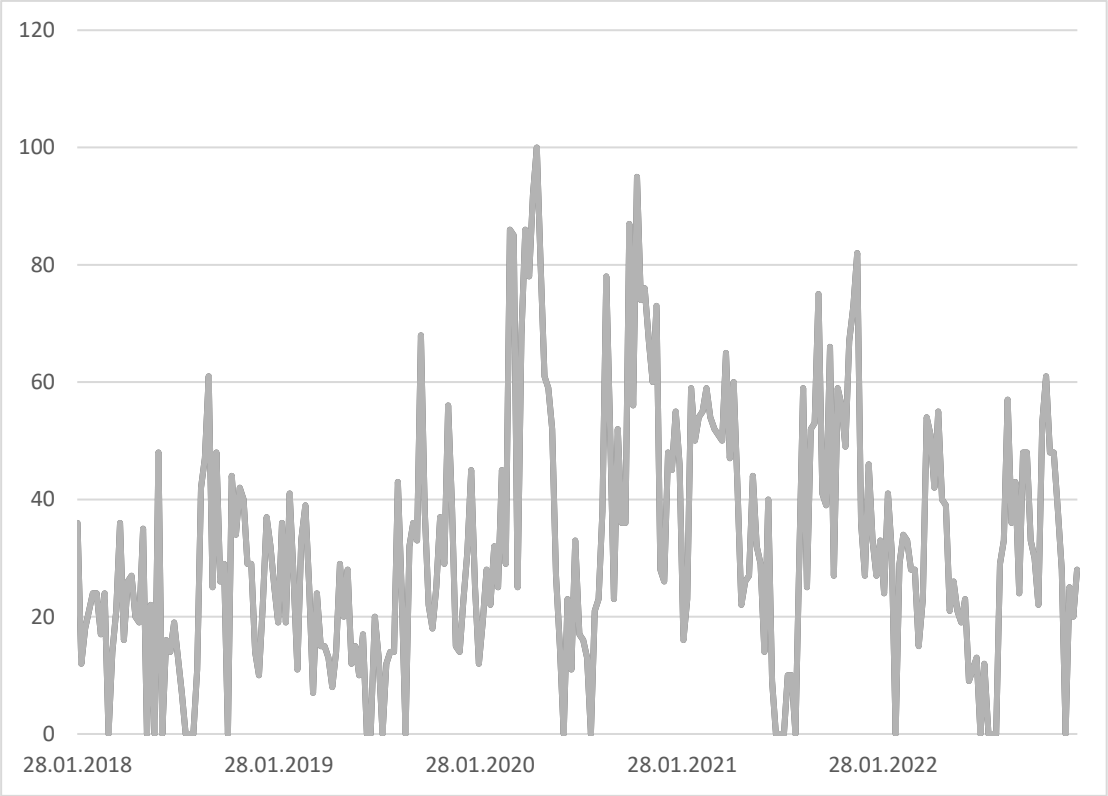
E-learning, also known as online learning or digital learning, is a form of education that utilizes electronic technologies to access educational curriculum outside of a traditional classroom. It is important to mention that the term “e-learning” is adopted internationally. E-learning can be delivered through a variety of platforms, including websites, mobile apps, and virtual reality environments, and can take various forms such as online courses, webinars, and digital textbooks.(99)

Just 8-10 years ago, e-learning was limited to simple testing on computers, reading e-books or watching videos. But information technology is constantly evolving, and e-learning has found more application scenarios today. Moreover, it received a greater response in the corporate segment than in schools and universities. The profitability of the company directly depends on the level of qualification of the staff - therefore, in business they try to use the most effective techniques.(100)

The following figure shows the popularity of e-learning in Hungary over the past five years:

Diagram 1.3.1.

“Interest in e-learning in Hungary”

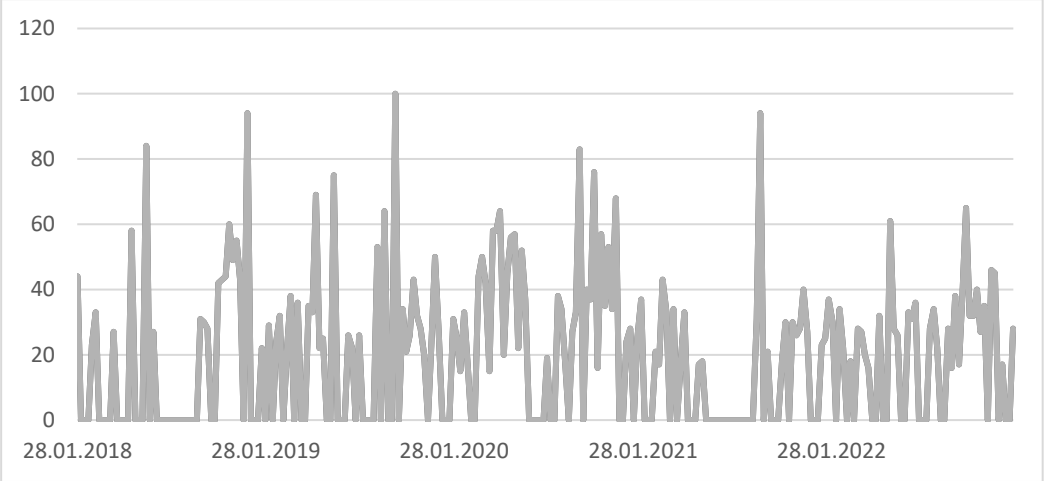


Based on the figure, the trend can be observed that the interest in e-learning is very low in some places, while in some places it is very high. This can be explained by the fact that a part of the world went through a pandemic, which can be seen in the years 2019-2022 in the figure. The pandemic meant that it was better to stay at home for safety and health reasons and our governments made living at home mandatory, so work and education occurred from home. That's when the home office trend broke into the world.(21)

Unfortunately, less data could be found on Ukraine. But the following figure shows the popularity of e-learning in Ukraine in the last five years.

Diagram 1.3.2.

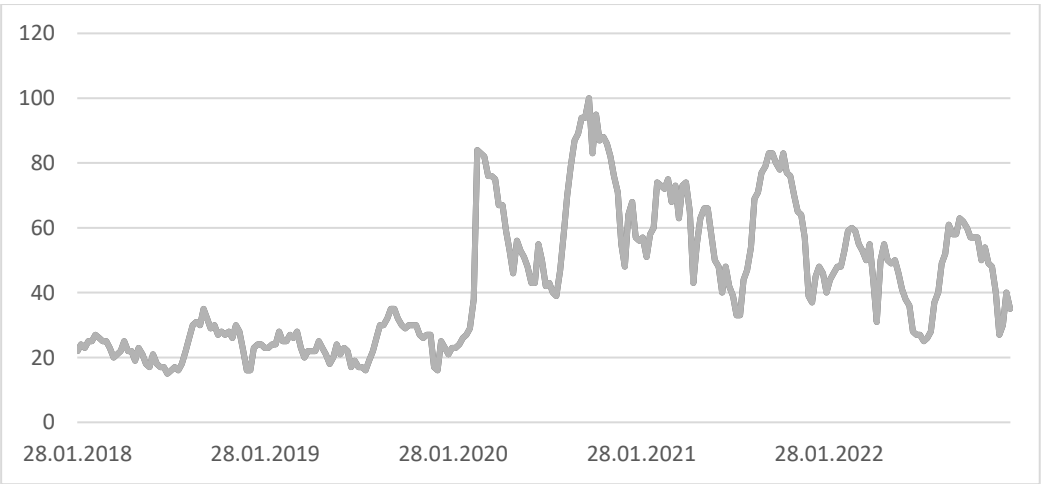
“Interest in e-learning in Ukraine”



It is interesting to note that while e-learning is quite popular in Hungary, this trend is not observed in Ukraine. In Ukraine, there is a tendency for the use of e-learning to be very time-limited. For example, as can be seen in the figure, there was a short period between 2018 and 2019 when the level of e-learning use was close to zero. This trend is also observed between 2021 and 2022. However, there are also noticeable spikes in the graph. This means that in some periods there is an exceptionally high value, which means that the interest in e-learning has increased in that period. (22)

Diagram 1.3.3.

“Interest in e-learning globally”



The following trend can be observed worldwide. As the diagram clearly shows, the pandemic has left its mark on the everyday use of the online space. E-learning came to fruition

during the pandemic and has been in use ever since, not only in Hungary or Ukraine, but also worldwide. Although it is currently showing a declining trend, they may easily return to the online space in terms of convenience and solvability.(20)

The decline in the use of e-learning can be due to several reasons. On the one hand, e-learning systems are often expensive and complex, which makes their use difficult for smaller institutions. On the other hand, e-learning systems often lack personal relationships and teacher feedback, which makes the learning process difficult for students. Third, e-learning systems often lack important motivational factors for learners, such as competition and community participation.

One of the key benefits of e-learning is its flexibility, as it allows students to access educational materials and attend classes at any time and from any location, as long as they have an internet connection. This makes it an ideal option for working professionals, who can continue their education while balancing their job and other responsibilities. E-learning also allows for personalized learning, as students can progress through material at their own pace and receive immediate feedback on their performance.

E-learning is also cost-effective, as it eliminates the need for physical classrooms and textbooks, and can reach numerous students at the same time. It also allows for the use of interactive multimedia, such as videos, animations, and simulations, which can enhance the learning experience and make it more engaging for students.

However, there are also some potential drawbacks to e-learning. One major concern is the lack of face-to-face interaction with instructors and classmates, which can be detrimental to socialization and the development of soft skills. Additionally, students may have difficulty staying motivated and engaged in an online learning environment, as they lack the structure and accountability of a traditional classroom.

Overall, e-learning is a rapidly growing field with many potential benefits for students, educators, and institutions. With the increasing availability of high-speed internet and mobile technologies, e-learning is becoming more accessible and convenient than ever before. It offers a flexible, cost-effective, and interactive way of learning that can be tailored to the needs of individual students. However, as with any form of education, it is important to consider the potential drawbacks and to ensure that the quality of education is not compromised.

Today, e-learning is used in various fields:

- In schools and universities, teachers can diversify the presentation of material or conduct a lesson remotely
- Online schools and learning centers host webinars and create online courses that allow you to expand your student base
- Company owners create corporate online courses: they record training programs and assign them to different employees. Thus, they simultaneously train geographically distributed workers and increase their professionalism.(89)

E-learning is often confused with distance learning. The two concepts have similar features, but their essence is different.

Distance learning is a form of education. There is no personal contact between the student and the teacher. The study is conducted at a distance, without the student visiting the educational institution. The teacher can transfer the learning materials to the student in various ways - send them by mail, give a link to a video lesson on the Internet. Various sources of information can be used for training - from standard textbooks to television and radio programs. The student may not even have access to the Internet - he receives education outside the walls of the educational institution.

E-education is a teaching method. E-learning implies the mandatory use of electronic means. E-learning is full-time and part-time. The direction towards the digitalization of education has led to the fact that e-learning in schools and universities has become commonplace. In the lessons, students are given tasks in electronic form, audio and video materials are E-learning education in full-time format.

In the academic community, there has not yet been a consensus on what e-learning is:

- some researchers believe that the concept of e-learning is wider than the concept of distance learning or online learning and suggest considering online and distance learning as part of e-learning;
- others use the concepts of distance learning and e-learning interchangeably.

Corporate learning practitioners, for example, are of the opinion that e-learning is not necessarily distance learning, it can also occur face-to-face in the classroom (this is any training using digital technologies), but distance learning in the future may merge with the concept of electronic - simply because that other formats, except for electronic, distance learning will not

remain. It is unlikely that anyone will study, as in the last century, exchanging written educational materials on paper by regular mail.(98)

E-learning systems are often used remotely as well, when a teacher:

- offers students video conferences to explain new topics and interactive communication;
- gives electronic tests;
- uses the Internet for feedback.

In this case, E-learning education is presented in a correspondence format.(99)

The main similarity between online learning and distance learning is the process of obtaining new knowledge and skills outside the classroom and in direct contact with teachers. The concept of "distance learning" indicates that there is a distance between the student and the teacher. And “online learning” means that this learning occurs with the help of an Internet connection and gadgets. Otherwise, they are almost completely identical and have the following advantages: individual pace of learning - you can study materials on your own schedule, without being tied to a group, time and place of class accessibility - you can study from any computer at a convenient time personal consultations with a tutor - effective feedback from teachers during the entire period of study, the course is in your “pocket” - you can review the lesson or the missed webinar in the recording at any time, download the training materials and submit the work for verification to the tutor.(97)

PART 2

THE IMPACT OF DLE ON TEACHING INSTITUTIONS

2.1. The concept and the role of place-based teaching

As we can read in the part above, the creation of the Digital Learning Environment is a long process that continues to this day. Development did not stop after the COVID period, on the contrary. The development is now so great that the existence of such online spaces also plays an important role in the economic world. In the following parts, the factors that can hinder the development of our educational system, be it in Ukraine or even on the other side of the world, will be presented.

In the last few years, education itself has gone through numerous changes. However, our schools and other educational organizations have not changed. Our schools and education systems have changed mostly around the edges. The foundational concept and features have remained the same. Fundamental changes have not been added to these systems in the last like two hundred years or even more.

The schools in the general education system are using Place-based education, also called the new localism. This is the “traditional” learning environment in use to this day. This is a relatively new term.

Place-based education can be seen as a way of a pedagogical approach that takes advantage of the power of the local community and environment to encourage learning and developing academic, social and civil skills. While using this model in schools, the environment, which children are put into, acts as an active partner and collaborator in the whole process of education. By using this model, children are able to deepen their understanding of core concepts in language arts, mathematics, social studies, science and other subjects across the curriculum.(47)

The main characteristic of this type of education are the hands-on, experiential and interdisciplinary learning experiences that connect academic content to real-world issues and challenges. Students are able to engage in different projects, field trips, service-learning, and other activities, which helps them with applying their knowledge and skills to authentic problems and opportunities in their community. (The Future of learning institutions in a digital age)

The first scholar to ever come up with the theory of place-based education was Aristotle. Although he did not write a thesis about it’s meaning and practice directly on the students, he

often referred to teaching and learning during his lifetime and in his numerous works. Even though he did not write an independent work, modern educators have initiated investigations into Aristotle's perspective on teaching and learning.

The next scholar who contributed to the concept of place-based education was John Amos Comenius. He was an early proposer of a universal education and it can be seen in his work in the Great Didactic. He also made a proposition regarding equity in educational accesses. Comenius also indicated his support for the idea that schooling should be an important part in not just in the rich peoples' lives but in poor people's lives as well.

Jean-Jacques Rousseau is also important to mention. He made rather predominant contributions to political theory, the social contract, and revolutionary thinking generally. He also had an interest in diversity of scholarly interests. Apart from his endowment to the studies mentioned above, he wrote Émile(62). The work represents an educational philosophy, in which he shows his dissatisfaction with the schooling in the mid-eighteenth century.

The most concise representation of the Swiss scholar's philosophy on teaching and learning was written by Johann Heinrich Pestalozzi. Early on Pestalozzi divulged his efforts to accrue effective educational practices originate as much from his own work and issues in practice as they did from his attempts as a scholar of pedagogy. His efforts to improve his own practice through experimentation is written in How Gertrude Teaches Her Children.(32)

The following key person in the place-based education theory is Friedrich Wilhelm August Froebel. He was Pestalozzi's student. He wrote The Education of Man, in which he voiced his own opinion regarding educational philosophy in 1826. He is well-know because of his contributions to the development of elementary education and the kindergarten.

Johann Friedrich Herbart was a contemporary of both Pestalozzi and Froebel. His ideas also deserve attention in a historical review of place-based educational theory. His work played a significant part in forming the educational system of the United States of America in the later decades of the nineteenth century. Moreover, Herbart's works shared some similarities with place-based education in the modern times.

Colonel Francis Wayland Parker, also known as the Father of Progressive Education, became a leading figure in educational circles in the late 1900s. After the war he spent two years in Germany studying at university and among his subjects was pedagogics. After returning from Germany he revolutionized the traditional practice of schooling. Parker's

contribution to educational history, particularly his focus on the local environment and the characteristics of the learners, aligns with the principles of place-based education. This approach echoes certain forms of progressive educational theory and practice. Therefore, Parker's work holds significance as a historical precedent to the contemporary field of school reform.

John Dewey was one of the best representatives of educational progressiveness. His work has a great impact on today's modern education philosophy. He put an emphasis on localized instructions, in means that it would develop the character of the learner. Dewey also stated that school as an institution played an important role in meeting the community's and social needs.(11)

Place-based learning is based on real experiences with real people in the real world, as it is explained above. These kinds of qualities of learning have a great impact on those who are studying foreign languages. This kind of studying provides rich and authentic language and cultural contexts for those who are willing to take them in for their development.(49) This teaching method highlights the meaning of the place in which one studies. This place does not narrow down to just one physical space, but it includes geography, which provides politically, socially, and ethically engaged perspectives on teaching and learning. These particles are presented as the four dimensions of PBE:

1) the biophysical, which describes the basic physical context of a certain environment;

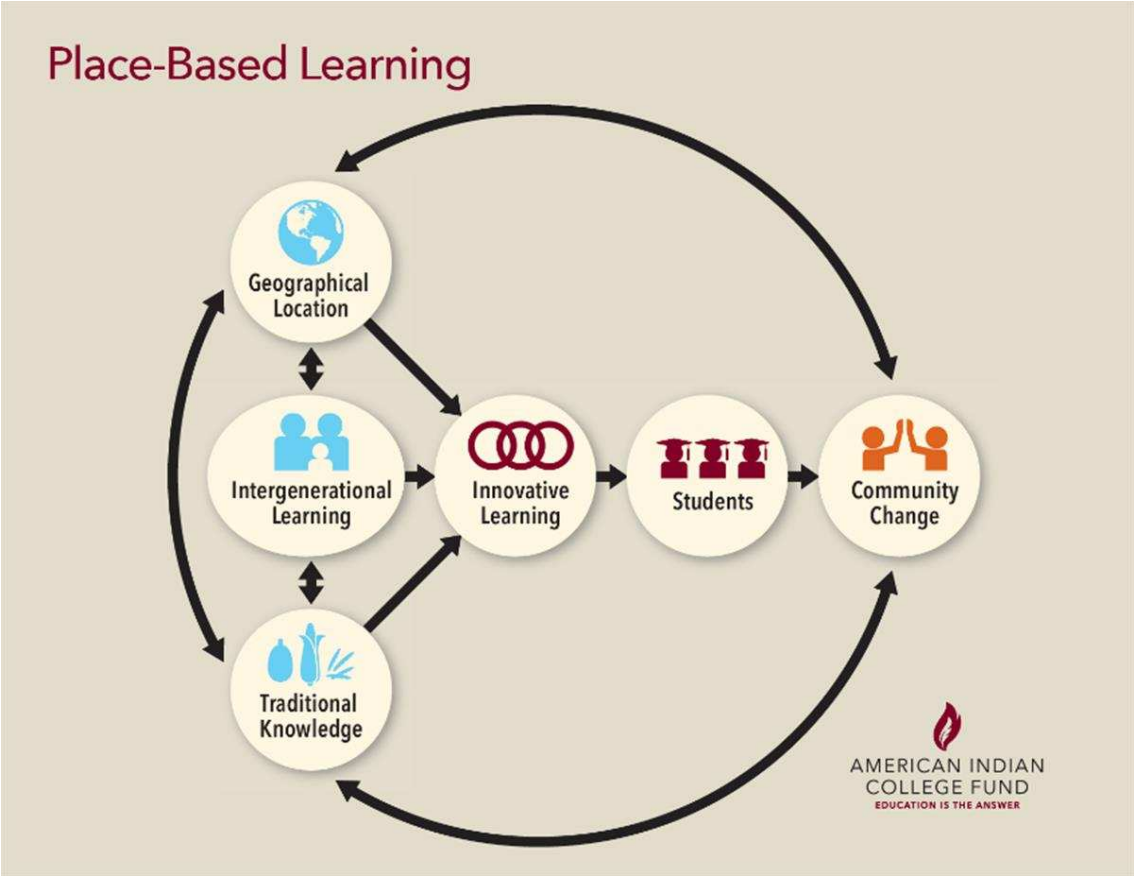
2) the psychological, which refers to the unique experience of each student within the physical place;

3) the socio-cultural, which defines a person, in our situation the students, as part of a certain society and culture that develops and maintains a relationship with the given space;

4) the political-economic, which means the political and economic processes that shape the place and people's attitude to it.

Picture 2.1.1.

“Place-based Learning cycle”



These were the four dimensions created between the years of 2006-2012 made by Nicole M. Ardoin and colleagues.

In 2021 Granit-Dgani gave definition to four new distinct dimensions.

1. “learning in place” (the topic in discussion), is a dimension where teaching and learning are being held in an open space, not in a classroom.
2. “study of the place”, refers to the study of the environment surrounding us and the processes that are going through it while staying in that chosen environment.
3. “learning from the place”, is based on an environment and its elements which play a unique educational role for educators and learners.
4. “learning for the sake of the place”, which aims to be able to change in the given place based on the other three dimensions. (44)

2.2. From offline institutions to virtual learning institutions

Prior to the early 1900s, the concept of learning was largely synonymous with teaching and was often viewed as a unidirectional process of imparting knowledge and experience from a teacher to a student. However, as pedagogical theories and practices evolved, the definition of learning expanded to encompass a more collaborative and interactive approach that involves both teaching and the active acquisition and application of knowledge by the learner. This two-way process recognizes that effective learning occurs when the teacher and student engage in joint activities that promote the development of critical thinking, problem-solving skills, and other essential competencies. In this sense, learning is no longer solely focused on the dissemination of information but rather on the cultivation of a rich and dynamic learning environment that empowers learners to take an active role in their own education.(https://ktonanovenkogo.ru/voprosy-i-otvety/obuchenie-chto-ehto-takoe.html#obuc)

The faculty of our institution recognizes the immense importance of school-based learning as an integral component of teacher education. This is because an introduction to the realities of the classroom is a critical aspect of effective professional training. It not only prepares student teachers for the practicalities of teaching, but also provides them with a valuable opportunity to assess whether teaching is the appropriate career path for them.

The overarching goal of school-based learning experiences is to provide student teachers with a platform to integrate theoretical concepts with practical applications, fostering a deep understanding of the pedagogical process. By working collaboratively with experienced teachers, student teachers are afforded a unique opportunity to acquire hands-on experience, refine their teaching skills, and develop their own teaching philosophies.

Moreover, through this collaborative process, student teachers learn valuable lessons about the nuances of classroom management, effective communication, and the importance of building positive relationships with students. These experiences are invaluable in shaping the student teacher's understanding of the realities of the classroom and the expectations placed on them as future educators.

In short, school-based learning experiences are an essential component of teacher education, as they offer student teachers a meaningful opportunity to develop their teaching skills and to determine whether teaching is the right career path for them. By working collaboratively with experienced teachers and integrating theory with practice, student teachers

can acquire a deep understanding of the pedagogical process and prepare themselves for a successful career in education.

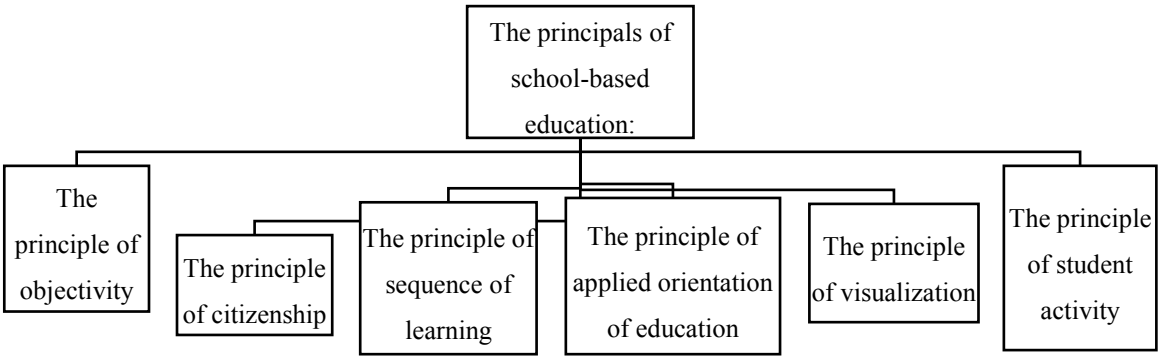
Student teachers play a crucial role in their own development as future educators by observing subject teachers in action, learning from their skills, strategies, and classroom achievements. This observation process allows student teachers to acquire valuable insights into the daily operations of the classroom and the various challenges and opportunities that arise.

In addition to observation, student teachers engage in a variety of activities designed to help them evaluate their own teaching experiences. These activities may include conferencing with teachers and lecturers, self-reflection exercises, and the implementation of different teaching approaches, strategies, and skills. Through these experiences, student teachers are able to acquire a deeper understanding of the teaching process and to develop their own unique teaching style and personality.(52)

By providing opportunities for hands-on practice and real-world feedback, school-based education enables student teachers to hone their skills and identify their strengths and weaknesses as educators. This process of self-reflection and self-discovery is essential for the development of a personalized teaching style and philosophy that is aligned with the principles of schooling. As student teachers acquire a deeper understanding of the principles that underpin effective teaching and learning, they are better equipped to design and implement classroom activities that promote critical thinking, collaboration, and creativity. Ultimately, this helps to create a more dynamic and engaging learning environment that supports the growth and development of all students.

Figure 2.2.1.

“The principals of school-based education”



The principals of school-based education, as the figure above demonstrates, are:

The principle of citizenship, directly related to the formation of civic consciousness, reflects the essence of the humanistic orientation of education. This means that the modern education system seeks to meet the social and personal needs of students, taking into account their psychological and individual characteristics when choosing teaching methods. The educational process should occur at the optimal level of difficulty, taking into account the interests and life experience of the students. A subparagraph of this principle can be called the principle of accessibility, the creation of equal learning conditions for all students, the rejection of intellectual and emotional overload and the inclusion of students with special needs.

The principle of objectivity, also known as the principle of scientific character, presupposes that the content of educational programs corresponds to the achievements of modern science. These provisions are officially fixed in standards (for example, GEF) and textbooks. According to this principle, students should be able to distinguish between true and false. At the same time, it is taken into account that the knowledge offered to students is not absolute, but relative, that is, it contains not only objective information, but also subjective ideas of scientists. The principle of objectivity also considers on an equal footing all forms of comprehension of the world - scientific, artistic and religious, thereby showing its general democratic, tolerant structure.

The principle of applied orientation of education implies that students receive both practical and theoretical knowledge, which go inseparably from each other. All hypotheses must be tested in practice, and all knowledge offered to students should not be divorced from reality. According to this principle, students must clearly understand the goals of their learning. Ideally, all elements of the educational B process should be tested by the requirements of life, but this is not always the case in the modern education system.

The principle of sequence of learning is designed to ensure a systematic, consistent, logical and rational acquisition of knowledge by students. This means that the educational material must be clearly structured and offered for study in a strictly routine order: from simpler tasks to more complex ones, from general knowledge to more specific ones. For example, history is studied in chronological order so that students can form a correct idea of the development of human civilization.

The principle of visualization, also known as the “golden rule of learning”, involves the involvement of all human senses in learning. Knowledge should be given through different

channels of perception: sight, smell, hearing, touch. For successful learning, it is necessary to combine different types of information presentation.

Research has proven that visual vision is the most effective of the senses. We perceive more than 80% of all surrounding reality. Especially in the second decade of the 21st century, when people (especially children) develop a clip thinking. However, one should not overestimate the role of images and impressions, forgetting that the true task of education is the formation of concepts and categories, developing into a system of knowledge through reason and logic to make learning visual. You can use:

- Images,
- video,
- audio
- laboratory and practical work,
- experiments,
- layouts.
- cards,
- formulas, etc.

The principle of student activity requires direct involvement in the educational process not only for the teacher, but also for the student. Learning is active action, full mobilization of the intellectual and spiritual resources of the student. Pedagogical practice is aware of attempts at learning that do not include participation learners and not being successful. For quality assimilation of the material, students should be interested in knowledge and involved in the process of obtaining it. Activity can be reproductive (memorizing and reproducing information) and creative. To increase the activity of their students, teachers can use such means as games, excursions, competitions, etc. According to the principle of the strength of knowledge acquisition, the content of the educational course should be fixed in the minds of students for a long time. This result is achieved only if all the above principles are observed: the activity of the student, systematic training, etc. The increase in the strength of the assimilation of knowledge contributes to control over knowledge verification work, tests, etc.(86)

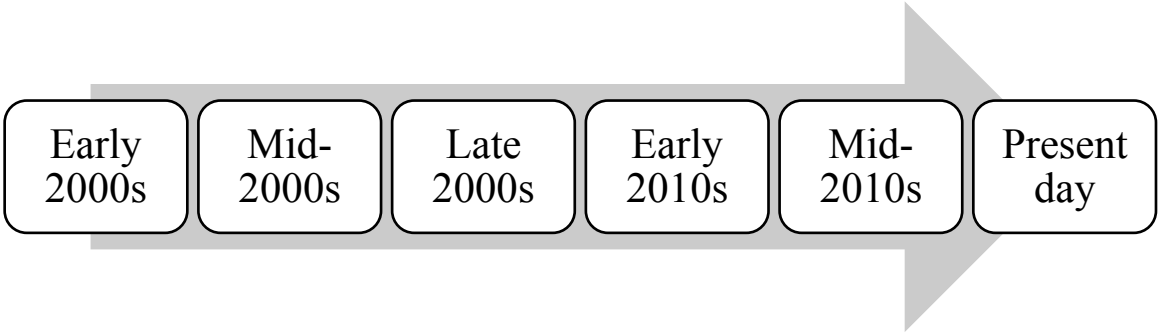
Schools play an important role in the lives of children and young people as they act not only as places of learning but also as centers of socialization, community involvement, and personal development. From the moment they step into the classroom, children begin to form important social and emotional connections with their peers, teachers and the wider school

community. These connections provide a sense of belonging and support that are essential for overall well-being and success.

Schools not only provide a sense of belonging but also provide access to a variety of resources and opportunities that help children enrich their lives and broaden their horizons. Through participation in sports, music, arts, or other extracurricular activities, the school provides children with a platform to explore their interests and talents, develop new skills, and build confidence and self-esteem.

Figure 2.2.2.

"The Timeline of the Development of Online Education"



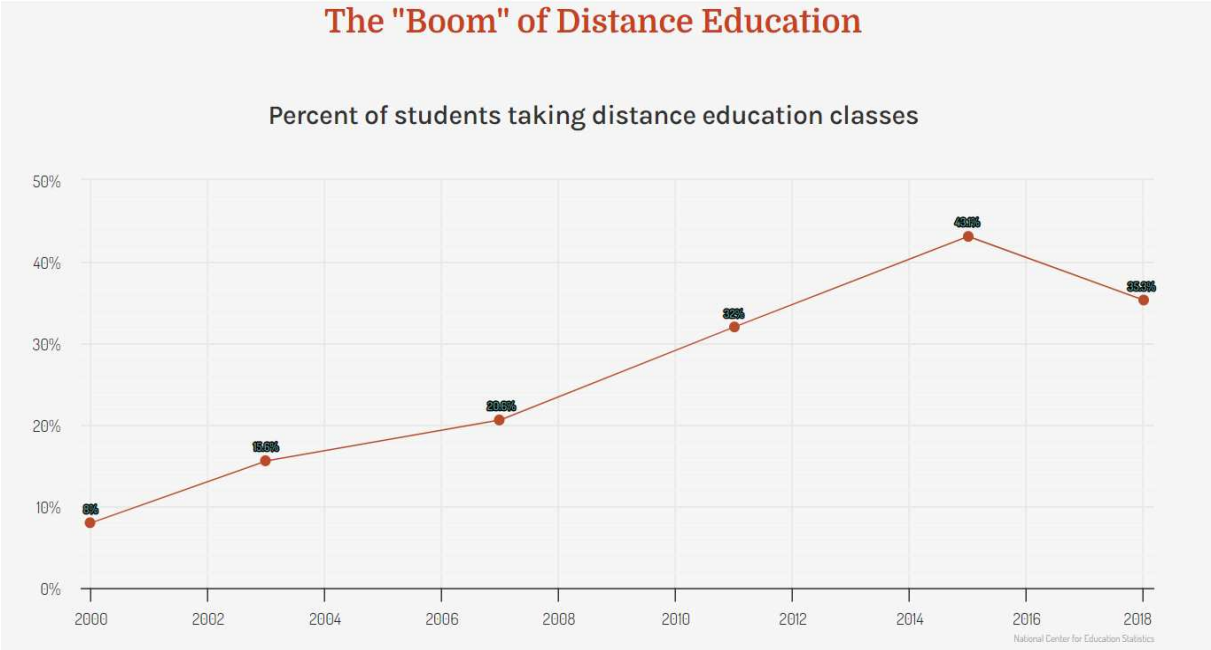
The overall transformation of institution-based education began in the early 2000s, when the first online courses were introduced (as it can be seen on the timeline above).

Online learning and teaching began to get considerably typical due to the easily understandable and comfortable structure it had. It gave teachers and students greater options. However, the content material that was transferred via textual content or scanned documents greatly impacted the students' studying. The majority of the teachers had always been used to be able to have a conversation with their students. Yet these conversations were changed to one-way verbal exchange on-line dialogues.

Another component that passed off in the 2000s was when e-learning was introduced to the business sector as well. E-learning in that sector was mostly used to train their employees. At that time, the personnel have been supplied with new and thrilling possibilities to make enhancements in their fields' understanding and to enlarge their ability sets.(10)

Picture 2.2.1.

The „Boom" of Distance Education



As it can be seen in the figure above, online education has become an important part of everyday life. From the year 2000, online education has become increasingly popular and quite preferred. On this figure, the peak of online education was reached in the year of 2015. The next rise of online education was between 2019 and 2022.(24)

As in the timeline above, the next milestone in changing the institution-based education was the Mid-2000s. Online learning in the mid-2000s was once nevertheless an industry, which spread rapidly. It even had its fair share of resistance throughout several institutions which were in favour of teaching offline. These years have carried several challenges with them. Slower structures and bad browser skills have been additionally noted as some of the challenges.

Despite the hindrances, there was once a surge in on-line structures and instructional web sites that supplied multimedia solutions. The tutorial world included PDF, audio, and video documents. Language-learning facilities additionally made use of phone instructions and voice consciousness tools.

Web-based studying additionally made a number strides via introducing digital studying materials, podcasts, email, dialogue forums, and chat rooms. There was once additionally a developing vogue in the shape of shared social spaces. This consists of blogs, wikis, and collaborative edited documents.

While the early levels by and large count on laptop labs, the subsequent few years witnessed the increase of cell computers. Laptops have become a staple in college students' lives, making it simpler to implement distance learning.

The emergence of high-speed Internet contributed extensively to each synchronous and asynchronous online learning. Education can definitely occur, each time and anywhere. Self-paced on-line studying had considerably improved, too. Even better, there was once an ease of get right of entry to sources of expertise barring the bodily limitations. Interactions between the distance-learning pupil and their instructors have increased, enabling instantaneous comments and a supportive on-line acquiring knowledge of the environment.(39)

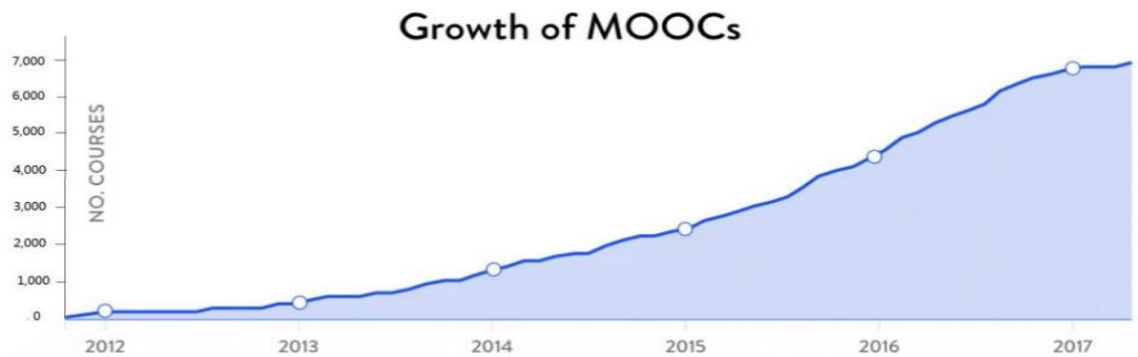
The next big step was the late 2000s. These were the years that hybrid learning and working were introduced to schools and the working sector. (28)

Hybrid learning is a teaching method that blends traditional face-to-face instruction with computer-mediated learning. While the specifics of how it's implemented can vary, educators generally agree that hybrid learning involves students learning in a supervised physical location, such as a classroom, as well as online from home or another location. This approach gives students some control over their learning experience, including when and where they learn, the path they take through the material, and the pace at which they progress.(27)

The next change in education was introduced in the early 2010s and mid-2010s. These years can be characterized by the same online teaching concept. This is a period of significant development. A new online “school” was introduced, called MOOCs. It stands for Massive Open Online Courses made by David Cornier. The whole concept was based on free courses. It helped with broadening higher education on a global level.

Picture 2.2.2

“The Growth of MOOcs”



After its rapid development, the MOOCs concept was divided into two subcategories. The first category was called cMOOCs. It was based on a connectivist pedagogy. This type of principle indicated that materials that were being taught should be aggregated rather than pre-selected. The concepts of instructional design attempted to connect students to each other to answer questions and do projects together.

The other category was called xMOOCs. This concept had more traditional course structures. The aim of these courses was to obtain certain knowledge certification of the subject matter. They specified syllabus with recorded lectures.(33)

The last milestone on the timeline is the present day. In today's world, online learning is quite widespread in almost all fields of education. This was achieved, unfortunately, with the help of the COVID-19 Pandemic. In the years of pandemic, many global firms have developed their own apps or sites where online teaching and studying was possible. During this time, institutional based learning has completely stopped. Classrooms were changed into Zoom or Skype calls and assignments were uploaded into the Google Classroom.

2.3. A Teacher's Place in the Digital Learning Environment

The teaching profession is one of (or even the most) ancient. After all, all other professions are mastered only in the course of specially organized purposeful pedagogical activities! The need to transfer social experience to new generations, to prepare these generations for life and work, led to the fact that education and training became an independent social function very early on.

Gradually, from these observations and in the process of building cities and hydrotechnical structures, the experience of socially useful activities related to the use of scientific knowledge about the surrounding world was accumulated, the rudiments of sciences appeared - arithmetic, geometry, astronomy, medicine. All this information was inaccessible to the vast majority of the population and was kept a great secret by the priests, passed down from generation to generation only to a small circle of persons destined for future priestly activities. In the caste of priests, knowledge was passed from parents to children, but there were also priestly schools at temples and large cities. Thus, in the countries of the ancient East, teachers were mainly priests, members of a privileged caste.(77)

In the ancient world - Ancient Greece and Ancient Rome – a three-stage education system developed - from elementary, which included teaching writing, reading, counting, to higher, aimed at preparing for a political career. It was from ancient Greece that the words

“school” and “teacher” came to us. True, their meaning was somewhat different. The word “school” meant “leisure”, since only a free person could have free time and devote it to the sciences or physical exercises, and a teacher was a slave who looked after the child and took him to school. In the Roman Empire, teachers became civil servants - they were paid an annual fee and were entitled to a number of benefits and privileges. The attitude towards teaching in the ancient world was ambiguous: if only artisans were seen in those who taught children the basics of literacy, then numerous teachers of oratory, philosophy and law were widely known and honoured.(75)

During the Middle Ages in Western and Central Europe, there was a sharp rejection of the ancient heritage and complete subordination of the teaching process to Christian doctrine. This led to a significant decrease in the general educational level. The reason for this phenomenon is that teaching fell on the shoulders of monks who did not have any pedagogical experience. In those years, there was no such thing as a lesson, and children learned everything at once — some students memorized letters, others - syllables, others learned to count, etc.

Gradually, society began to understand that such a system "doesn't work" and education must reach another level. That is why guild schools began to open in the cities, and in the XII-XIII centuries. the first universities appeared, in which teaching was conducted by famous scientists of that time. This, in turn, led to a shortage of teachers. There was a need to introduce a class-lesson system in schools, and a lecture-seminar system in universities. This innovation ensured a more rational use of the teacher's time and led to a significant increase in the quality of education.(78)

The Middle Ages is the time of the emergence of the first schools in Rus'. After the adoption of Christianity as the state religion, Prince Vladimir ordered "to collect children from the best people and send them to book education." Over time, education spread more and more among the Russian people. In Ancient Rus', the work of teachers, or, as they were then called, literacy masters, was treated with respect. “Respect the teacher as a parent,” says a Russian proverb.(83)

In the era of capitalism, in connection with the development of the school business, the teaching profession becomes mass. Teachers hold full-time positions in numerous schools and colleges of various types. Along with this, in the 18th and 19th centuries, the education and primary education of children with the help of home tutors, home teachers (governors) became widespread in noble and bourgeois families. Initially, the persons who performed teaching

duties did not have any special training. With the emergence and development of pedagogical education (in Russia at the end of the 18th century), state requirements for the professional training of teachers are determined, and their legal status depending on education is legislated.

In 1779, a teacher's seminary was opened at the Moscow University - a pedagogical educational institution that trained teachers for primary schools; she trained a small number of teachers for Moscow to Kazan gymnasiums and some boarding schools. In 1803, a teacher's gymnasium was opened in St. Petersburg, which trained teachers for city schools. In 1804 the institution was transformed into a pedagogical institute. At the beginning of the 19th century, the first teachers' institutes were created in Russia, which trained teachers for middle classes of secondary schools.

In general, in pre-revolutionary Russia, teacher training for primary school prevailed. The main type of teacher training for primary school were teacher seminaries with a 4-year term of study under the Ministry of Public Education. At the beginning of 1917, there were 171 teachers' seminaries in Russia. The seminaries taught the law of God, Russian and Church Slavonic languages, literature, mathematics with elementary knowledge of algebra and geometry, natural science, physics, history, geography, drawing, singing, as well as pedagogy, methods of elementary teaching of the Russian language and arithmetic. At the choice of the seminary council, the students learned trades. Primary school teachers were also trained by pedagogical classes of 913 female gymnasiums, 50 female diocesan schools and the Female Pedagogical Institute in St. Petersburg. In the 19th century, teachers were prepared for church-parochial schools by church teachers' schools, as well as second-class teachers' schools, subordinate to the Synod. Numerous teachers, especially in the outskirts of Russia, did not have a pedagogical education and received the title of teacher after passing special exams.(77)

At the beginning of the 19th century in Russia and sub-Russian Ukraine, the first teachers' institutes were created, which trained teachers for middle classes of secondary schools. Teachers for public elementary schools were trained in teachers' seminaries before.

In general, in pre-revolutionary Russia, teacher training for primary school prevailed. After 1917, the search for a new system of pedagogical education began, new types of higher and secondary professional educational institutions were created. Until the 30s of the 20th century, a network of pedagogical institutes was formed in the USSR as a whole. During this period, evening, extramural, secondary and higher pedagogical education began to develop

widely. Since the mid-1980s, various additional specialisations have been widely introduced in pedagogical educational institutions.

To date, some of the pedagogical institutes in Ukraine have been transformed into pedagogical universities, new types of pedagogical educational institutions have appeared. All this is accompanied by qualitative changes in the training of teaching staff. The range of specialties for training future specialists in higher pedagogical educational institutions is expanding.

Thus, the ancient profession of a teacher is currently undergoing a new development that reflects the needs of a modern school on the way to its humanisation and democratisation.(83) The traditional teaching was usually a combination of information transfer and child care. It also included sorting out the children according to their academic talents. Teachers were usually told where, when and how to teach their students. It was a requirement towards them to teach each student the same way and were not responsible when many failed to learn. The teachers were required to use the old methods of teaching. This meant that teachers would stand in front of the classroom and deliver the same lessons every year.(50)

The role of teachers began to change when the field of psychology began to grow in the 20th century. After that, the whole concept of what it means to be a teacher became more sophisticated. The role of the teacher was not only standing in front of the class and transferring the same information year after year. The role was to understand the psychology of learners, different pedagogical theories and strategies.(61)

However, since then, the role of teachers has changed significantly since the adaptation of schools to the Digital Learning Environment. A learning environment that has been technologically more advanced has been beneficial in changing teaching styles and applying new teaching strategies. It was an advantage for the teachers in the organisation and management of learning and made the lesson more enjoyable for the students. In many cases, they can also help students to access useful sources of information when they need it to solve a particular task. Moving along with the development of modern technology, it is useful to create a smart learning environment in which students can become smart students with the help of smart rooms and smart pedagogy equipment. In addition, mobile devices and technologies can be used to extend learning space and time, objects and opportunities for students to enhance their cognition, engagement and interaction.(36)

However, the new demands on the education system and its teachers, has challenged some of the traditional model interactions between a teacher and a student. As the internet and gadgets have become more deeply integrated into everyday school life, teachers must adapt their teaching methods to incorporate these technologies, while still being able to give the high-quality education they deserve.

This rapid shift from being able to teach the children in face-to-face from to the need to teach online has taken its toll on the teachers. Teachers are required to be more technologically savvy, incorporating new tools and resources into their lessons to create a more memorable and interactive experience for the students.(90)

In the 21st century, school teachers have to take on the following roles:

1. The Controller

In this particular role the teacher has to take control of the whole class. It means teachers should know what students do, what they say , when they say and how they say it. This role is important when teaching a new language, and accurate reproduction and drilling techniques are needed.

2. The Prompter

The teacher takes on the role of a motivator. The teacher encourages children to participate in activities and make suggestions about the next one. The teachers' help is only “allowed” when it is needed.

3. The Resource

The Resource role’s aim is to be a kind of walking resource center for the children to request help. Teachers provide learners with whatever language they lack when performing activities which require communication skills. They guide the students to use available and reliable resources for their works.

4. The Assessor

The aim of this role is to be able to give valid feedback and correction if needed. The teachers observe the students to see how well each of them is performing. The students after that are graded by the teachers.

5. The Organizer

Good organisation is required to have successful activities. It is very important to be able to tell the students exactly what they are supposed to do. Being able to give instructions is a vital part of this role. The Organizer also serves as a demonstrator. This role also allows the teachers to get involved in students activities.

6. The Participant

In this role, teachers are able to participate in certain activities with their students. However, they should be aware of their advantages as they can easily dominate the activity. If the teacher is able to stand back and not become the center of attention, it can be a great way to help the students understand activities.

7. The Tutor

This role helps the teacher to individually pay attention to their students. The teacher provides the students with advice and guidance in projects or self-study. It also allows the teacher to prepare classes and activities fit for a given student group.(59)

Naturally, with the change of role, the teacher will have a number of new professional functions. However, the most basic of them have long been familiar to numerous teachers – for example, helping a student find their strengths and weaknesses, discuss the unknown, create an educational environment that will allow students to reveal their potential.

The content of the teacher's activity is also changing: the planning process begins to play an important role in it. Even now, teachers are well aware of the concept of planned educational outcomes - for a lesson, for a week, for a semester or academic year. The main thing is to make sure that the planned results are measurable and transparent.

Another topical activity for the teacher is design. For example, to design any training session, you need to go through three stages: determine the planned educational outcomes, think over the learning objectives, problem situations that you will immerse yourself in with the students, and finally, select the learning tools.

Any resources can play their role - chalk and blackboard, or a digital laboratory, or a feeder outside the window, or a scientific organization website, etc. Finally, all teachers have one more task “for growth”: to find an opportunity to actively engage in the activities of professional learning communities - just do not confuse them with methodological associations. The task of professional communities is to organize the exchange of experience in an interdisciplinary environment.(84)

PART 3

EXPERIMENTAL RESEARCH

The experimental research was conducted with the help of a primary information source, called survey. The questionnaire is based on the previous experiences teachers, parents and students have regarding the online education during the Pandemic. The reason why this particular period was chosen, is because online education and the Digital Learning Environment had the most significant impact on teaching, studying and the whole school system.

3.1.Research questions and aims.

The questionnaire itself can be found later in the annexes to this thesis.

The questionnaire, which was completed, can be divided into four sections. Each of the four sections has a different database of information, which is different for each of the fillers. In addition, the questionnaire could be attempted in two languages: English and Hungarian.

One of the aims of the questionnaire is to present the various experiences teachers, students and parents had during the Pandemic while teaching, learning and working using online education. The second aim is to show the drawbacks and positive aspects of online education and to be able to understand how can the Digital Learning Environment be improved.

The first section is divided into two more parts: an introductory section and a section on demographic issues.

In the introductory section, the author of the thesis and the editor of the questionnaire are introduced, and the purpose of the questionnaire.

In the demographic questions section, participants could answer questions such as their age, gender, education, etc. Answering these questions helped to extract more up-to-date data from the other information provided.

There are three key questions at the end of the first section. These three questions ask you about how you spent your education during the pandemic. There were three options to choose from: teacher, parent or student. Once the option was chosen, the participant could only continue with one of the remaining sections.

Only those who selected the "Parents" option in the last questions of the first stage were allowed to answer the questions in the second section. The first the parents saw was a short

description, which was the following: “The questions in this section are addressed to parents and relatives who actively participated in their children’s learning during the period of online education”.

Those who chose the "Student" option were placed in the third section. The first thing that greeted them when they continued with the survey was the following text: “The questions in this section are addressed to students who have participated in online education”.

And the last one, the fourth section, was for teachers. Persons who selected the "Teacher" option could read the following text: "The questions in this section are aimed at people who have participated in online education as teachers and educators”.

3.2. Data collection

Data collection for the survey could have been conducted in several ways. The first way it could have been performed is the interview method. The second method, which is also used here, is to fill in an online questionnaire. The third method is to complete the questionnaire in person.

The first method would have been very difficult to implement. This follows from the fact that:

1. Interviews can be anxiety-inducing for many individuals.
2. The feeling of being overwhelmed by the expectation to impress the interviewer and may worry about their ability to effectively communicate their skills and qualifications.
3. The pressure to perform well and not to speak nonsense.
4. It can be time-consuming to conduct an interview and analyze the qualitative data.
5. Limited number of people willing to respond

The third method was also not considered appropriate. The following difficulties can be encountered in its implementation:

1. Printing and distributing paper surveys can be expensive.
2. Paper-based surveys require manual data collection and entry, which can be time-consuming and prone to errors.
3. Limiting the possibility of changes.
4. Analyzing data from paper surveys can be more labor-intensive.

For the reasons mentioned above, the second option was chosen, i.e. the questionnaire was completed digitally by the participants. Completing digital questionnaires was the perfect choice because of the following aspects:

1. Anonymity despite the demographic information
2. Ease of screening participants and allowing only the targeted demographics to participate
3. Answers are submitted immediately to the survey platform
4. Convenience to participants
5. Potential for better results
6. Faster results analysis

3.3. Discussion of results

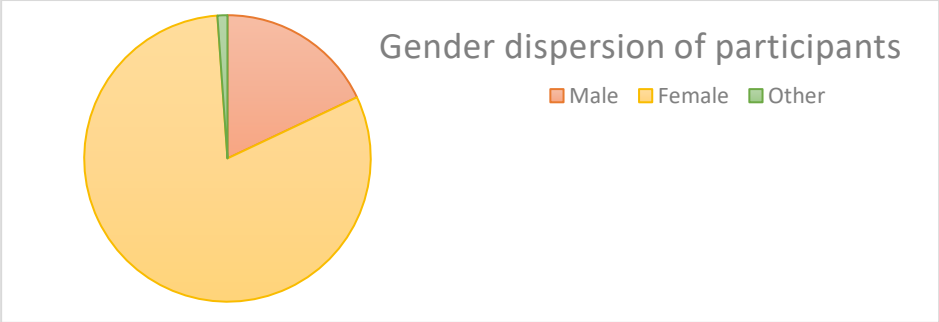
3.3.1. First section of the questionnaire

The number of respondents to the questionnaire is exactly 60. Among the respondents were women and men of different ages, with different qualifications and residences. The majority of respondents are from Hungary.

The first question to be answered was the question of gender. This question was answered with three choices: female, male and other. Of the 60 people who completed the questionnaire, 27% chose the "Male" option, which means that 16 men/boys completed the questionnaire. Furthermore, 43 women/girls completed the questionnaire, which means that they account for 72% of the total number of respondents. Also, one person chose the other category, which represents 1%. These data are shown in the diagram below.

Diagram 3.3.1.1

"Gender dispersion of participants"

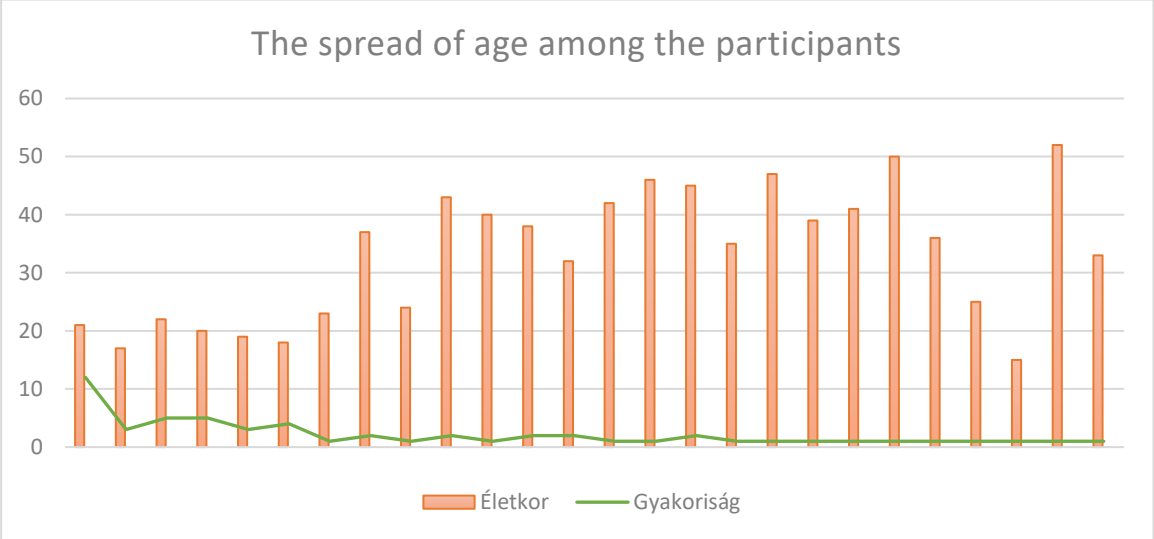


The next question is about the age of the respondents. There are no options for answering this question, but respondents could enter this as a short answer. The responses received are

varied. Based on the responses, it can be concluded that the most common age is 21, which means that 12 people were 21 years old. The second and third most common ages are 20, written by 5 people, and 22, also written by 5 people. The next striking implication is that the lowest age that occurs among the responses is 15 and the oldest is 52, both numbers corresponding to 1 person. These claims are supported by the diagram, which can be observed below.

Diagram 3.3.1.2.

"The spread of age among the participants"



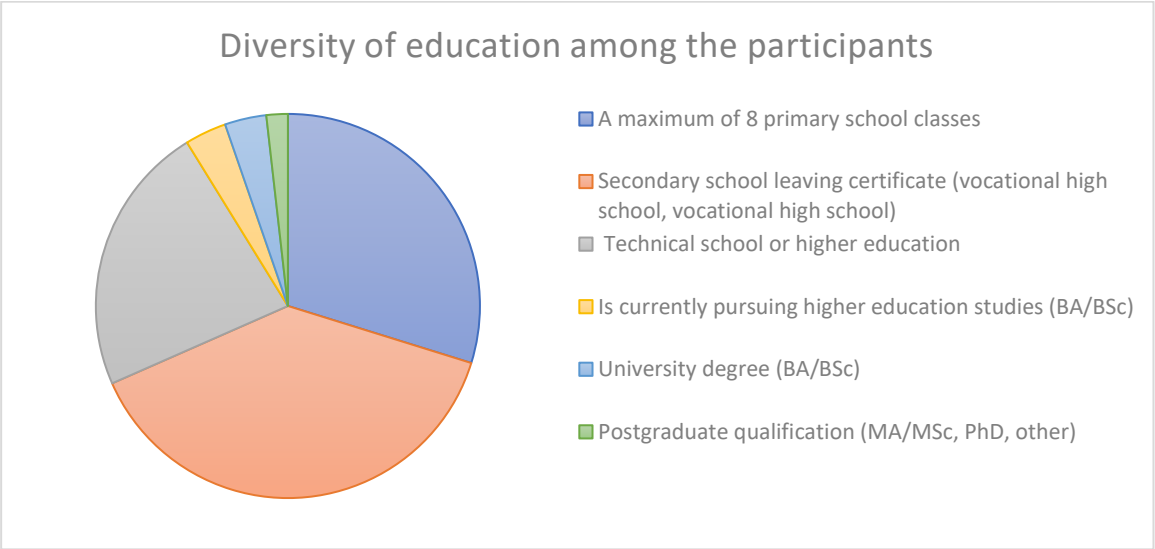
The participants were asked about their educational attainment in the next question. There were six options to choose from, which were the following:

- A maximum of 8 primary school classes was chosen by two people, which is 3,5% of the whole;
- Secondary school leaving certificate (vocational high school, vocational high school), which was chosen by thirteen people, which means it 22,8% from the whole;
- Technical school or higher education, which was chosen by two people, which means it 3,5% from the whole;
- Is currently pursuing higher education studies (BA/BSc), which was chosen by twenty-two people, which means it 38,6% from the whole;
- University degree (BA/BSc), which was chosen by seventeen people, which means it 29,8% from the whole;
- Postgraduate qualification (MA/MSc, PhD, other), which was chosen by one person, which means it 1,8% from the whole.

The following diagram demonstrates the variety of responses received.

Diagram 3.3.1.3.

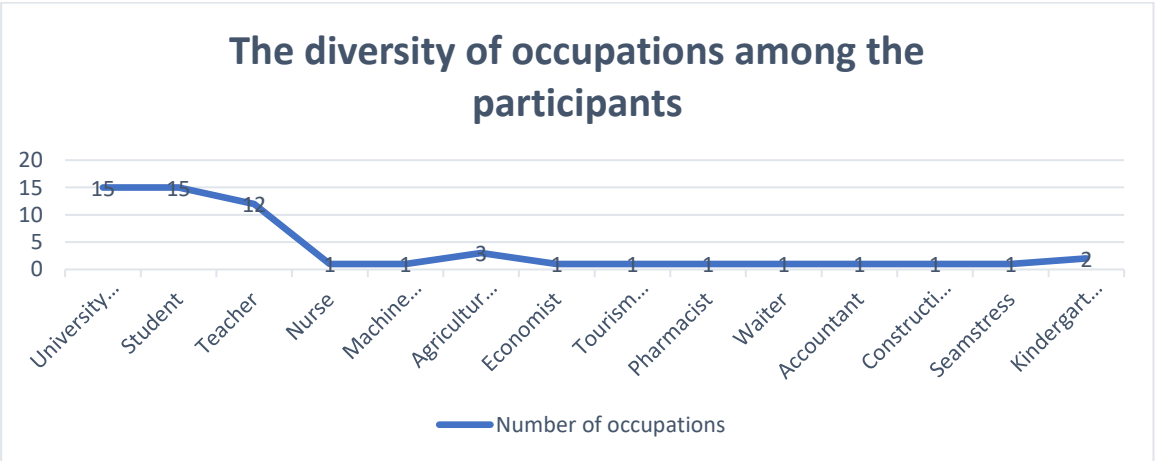
"Diversity of education among the participants"



The next question looked at the issue of occupation. In general, the majority of respondents were students or university students. The ratio of students to undergraduates is the same, which means that 15 students and 15 undergraduates completed the questionnaire. The next highest number of occupations chosen is teacher. Here, numerous types of teaching professions appear, such as mathematics teacher, English teacher, etc. Other occupations will also appear, such as seamstress, farmer, software developer, etc. The following diagram shows the proportions of these occupations.

Diagram 3.3.1.4.

"Diversity of occupation among the participants"



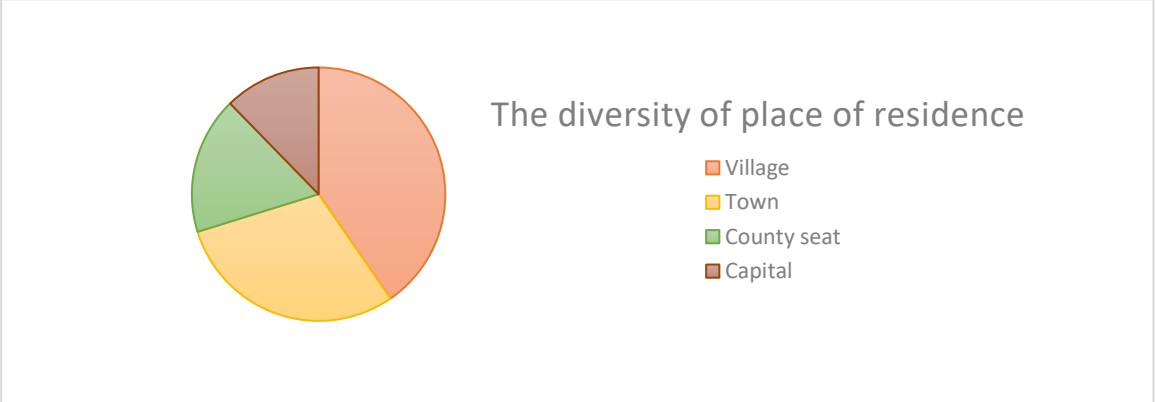
The next question asked about the place of residence. The answers to the question were given in advance, so you just had to choose from the options. The options were the following:

- Village
- Town
- County seat
- Capital

Of the options, 23 people chose the village. The town was selected by 17 people. The county seat was chosen by 10 people. The capital was chosen by 7 people. The proportion of options chosen is presented in the following diagram.

Diagram 3.3.1.5.

“Diversity of place of residence among the participants”

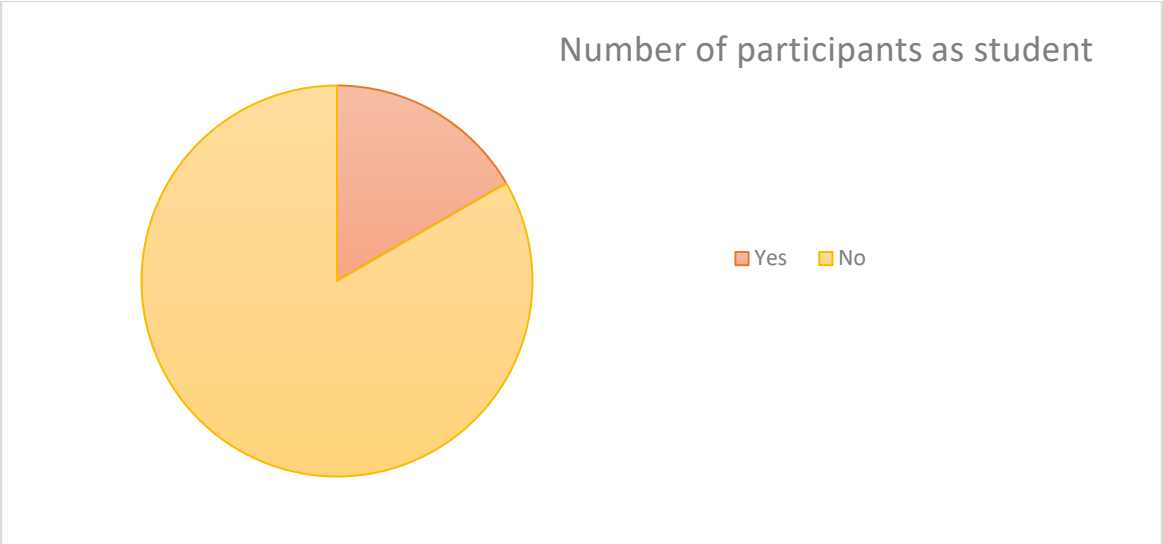


The last three questions were related to the form in which the respondents were present during the online training period. The three questions had two options, indicating yes or no. The questions were "Were you a parent/teacher/student during the pandemic?"

The first question, to which the answer was yes or no, was: " Were you a teacher/educator during the pandemic?” The following diagram shows the response rates to this question.

Diagram 3.3.1.6.

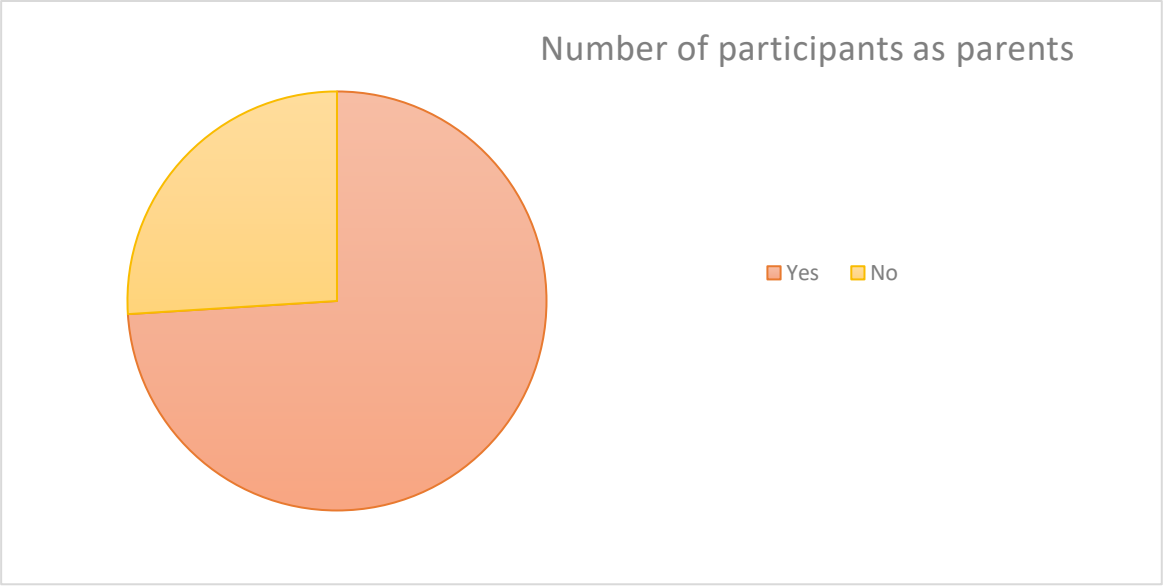
“Number of participants as student”



The next question was addressed to the students. The question was about whether you were present as a student during the pandemic. The following diagram shows the answers.

Diagram 3.3.1.7.

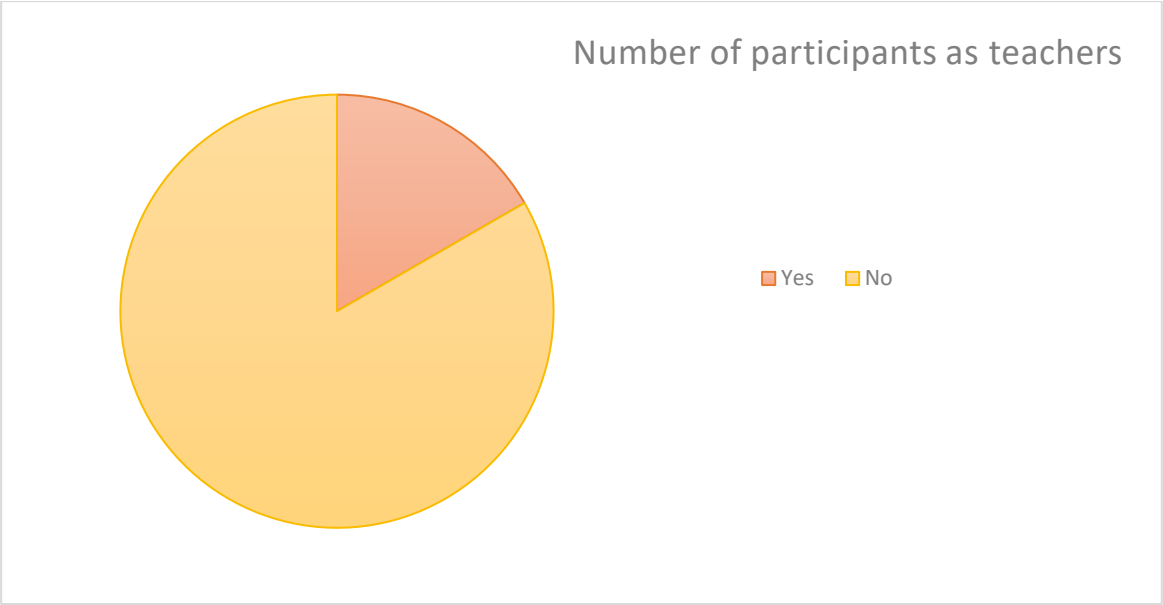
“Number of participants as parents”



The last question was addressed to the parents. Which also has yes or no options. The diagram below shows how respondents answered this question.

Diagram 3.3.1.8.

“Number of participants as teachers”



After answering these three questions, the questionnaire takes the participant to 3 other sections. If they answer "Yes" to the question "Were you a teacher/educator during the pandemic?", the participant continues in the fourth section.

If they answer "Yes" to the question "Were you a student during the pandemic?", the participant will continue in the third section.

If the answer to the question: "Were you a parent/relative during the pandemic?" is "Yes", the participant will continue in the first section.

3.3.2. Second section of the questionnaire

At this section, the number of respondents reduced from 60 to 10. The focus at this stage is on the parents' experience. The section starts with a short information note explaining that this section is specifically designed for parents and relatives. However, it should be noted that some questions are repeated in each section.

The first question focuses on internet access. There are three options for this question:

- Yes
- Limited
- No

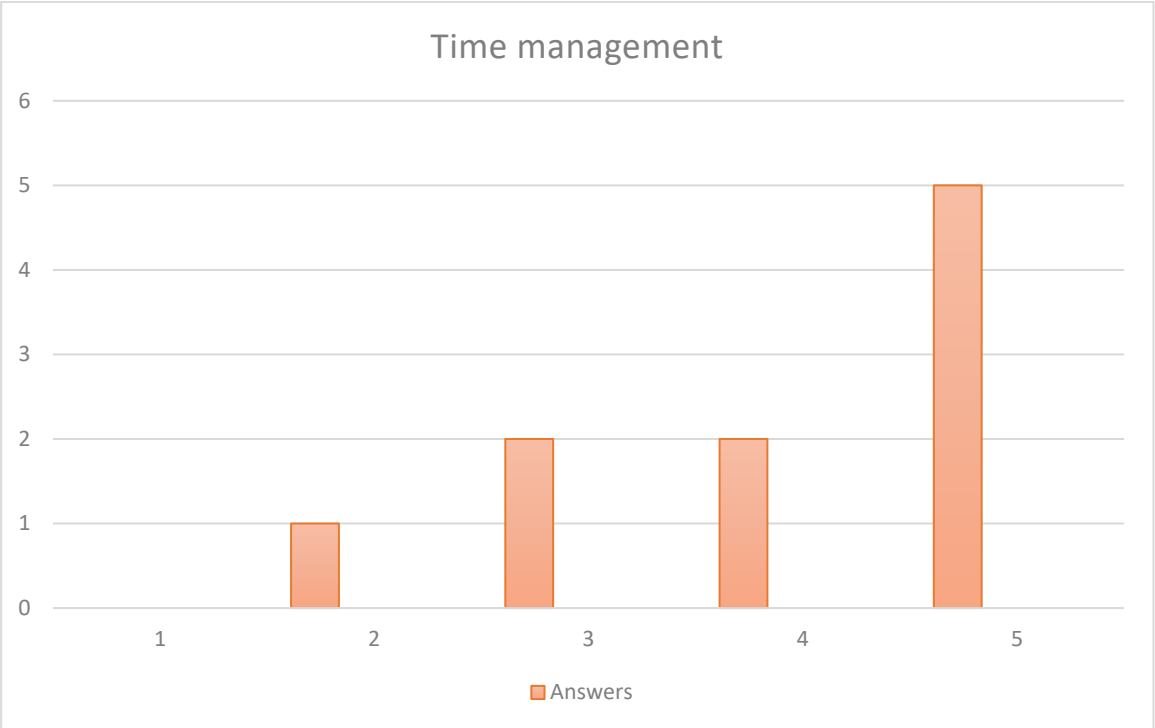
All parents and relatives who filled in the questionnaire, i.e. 100% of respondents, said that they had no restrictions on internet access during the pandemic.

So the next question, which was to explain why internet access was limited, became meaningless since 100% of parents and/or relatives answered that internet access was not limited.

The following question uses a scale of 1 to 5 to answer the question. The question is: "How well could you manage time while learning remotely?" A 1 meant not at all and a 5 meant very well. The following diagram shows the answers.

Diagram 3.3.2.1.

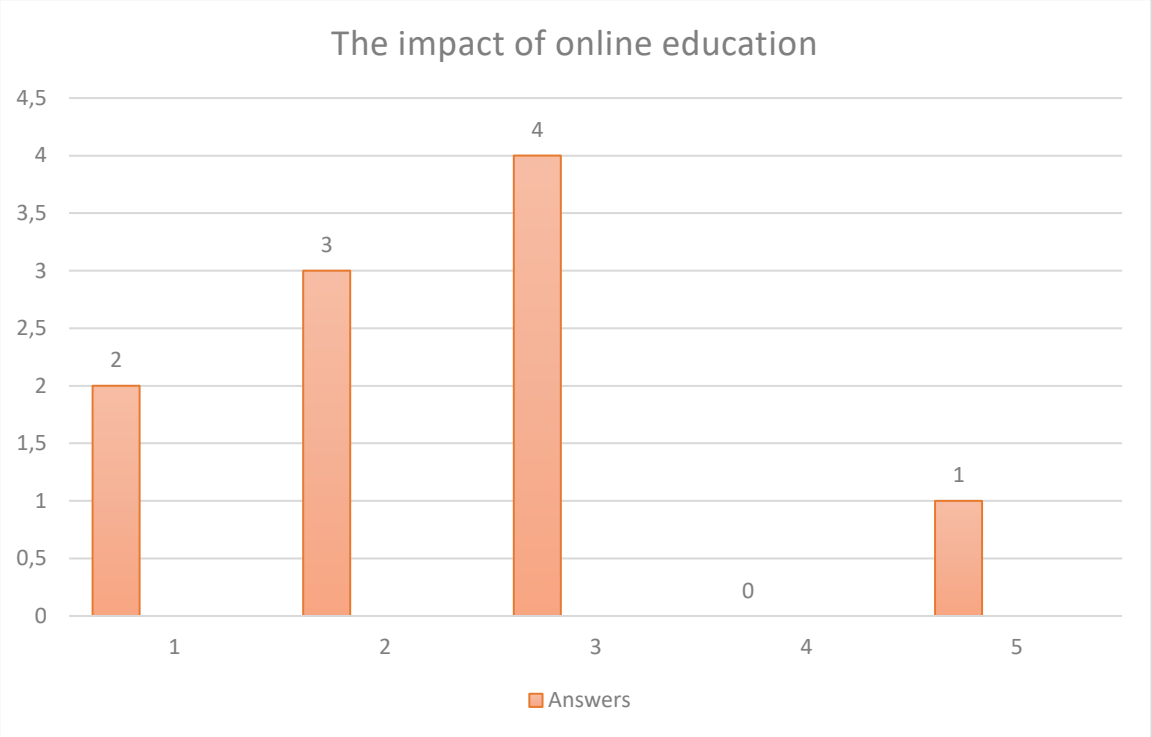
“Time management during online education”



The next question is also similar to an evaluation system. To answer this question, it was necessary for the respondent to choose between 1 and 5 of the options. Number 1 indicated that the online training was not effective at all and number 5 indicated that the online training was effective. From what has been described so far, it can be concluded that the question relates to the impact of online education.

Diagram 3.3.2.2.

“The impact of online education on the participants”

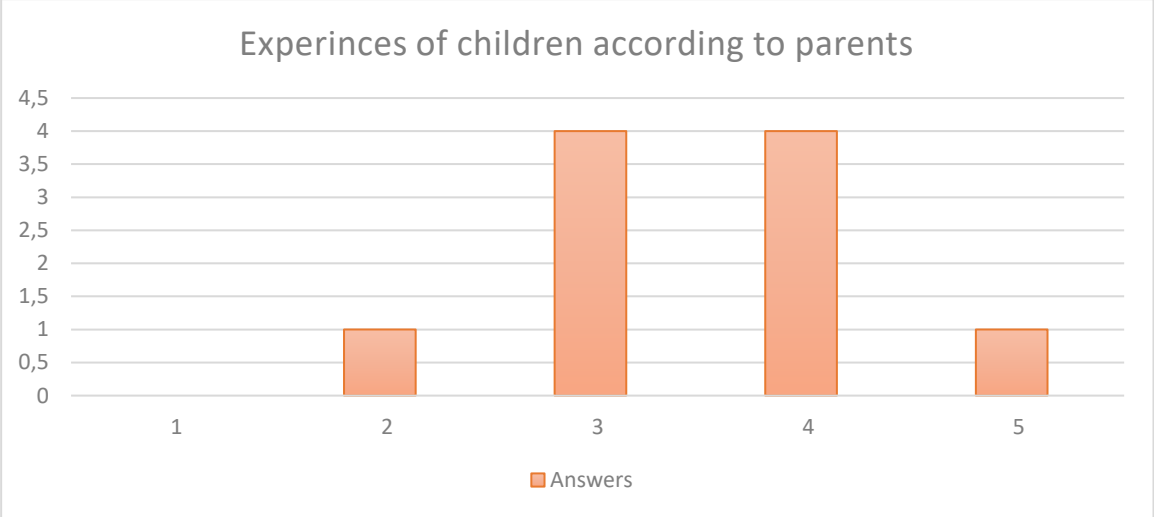


This question was followed by a short answer option question. The question was: "How has online education affected your child's learning?" The answers to this question were unanimous. The majority of parents said that their children showed the signs of laziness and neglect towards their studies, as well as being unable to understand much of the curriculum. In addition to this, online education has led parents to believe that their children have become disengaged from traditional education and communication.

The next question is "How much did your child enjoy online education?" Again, the answering of this question was similar to a rating system, which meant that they had to rate their answers on a scale of 1 to 5. The response rates are shown in the following chart.

Diagram 3.3.2.3.

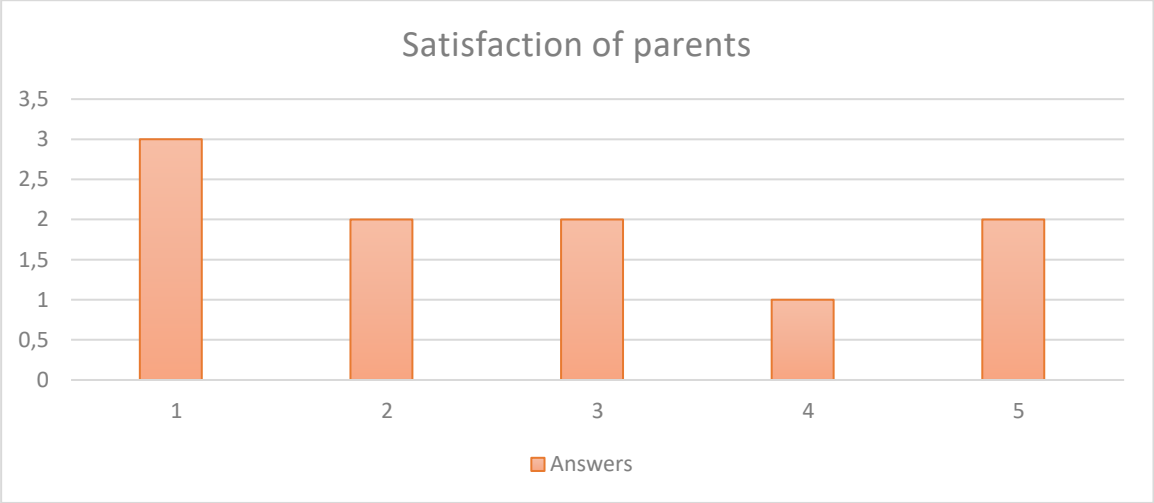
“Child's experience of online education according to parents”



The next question focused on parents' satisfaction with online education. We can conclude from the answers that the majority of parents were not satisfied with the quality of online education, as shown in the following diagram.

Diagram 3.3.2.4.

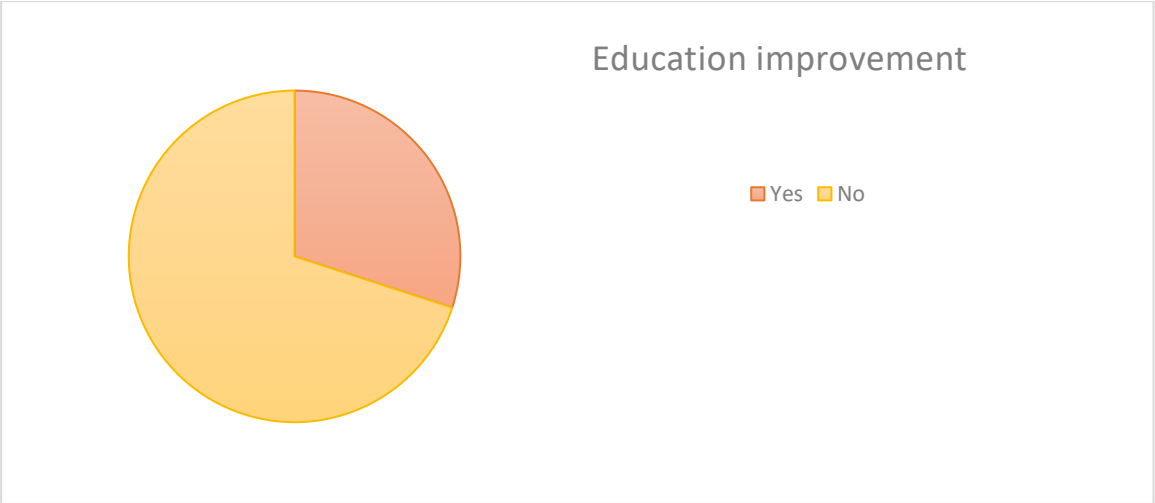
“Parents' satisfaction with online education”



The next two questions are inferences of each other. The first question shows that parents do not think that the quality of education has improved, although some do think it has improved during the period of online education. However, the majority chose "No" when answering this question. This is illustrated in the following diagram.

Diagram 3.3.2.5.

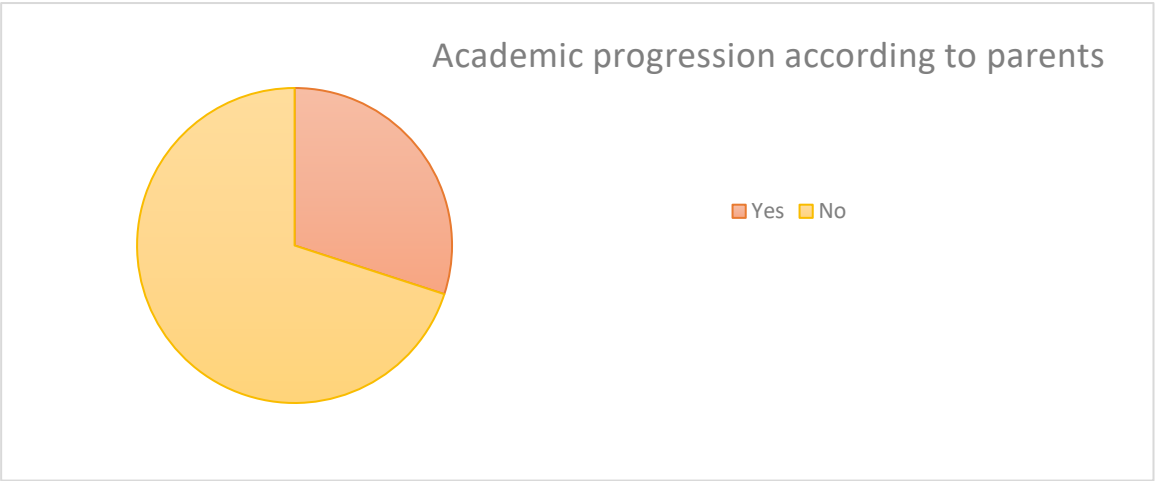
“The improvement of education from parents’ experience”



The next question is: "Are you confident your child will make adequate academic progress through remote learning?" The answer to this question was also yes or no. As you can see on the diagram, the majority of parents voted no. The reason for the negative opinion of parents is revealed by the following question. It reads: "Please provide a brief explanation of your answer." According to the answers, parents felt that the material delivered online was not learned by the children. However, this was not necessarily the fault of the child or the teacher, but rather the quality of the material delivered.

Diagram 3.3.2.6.

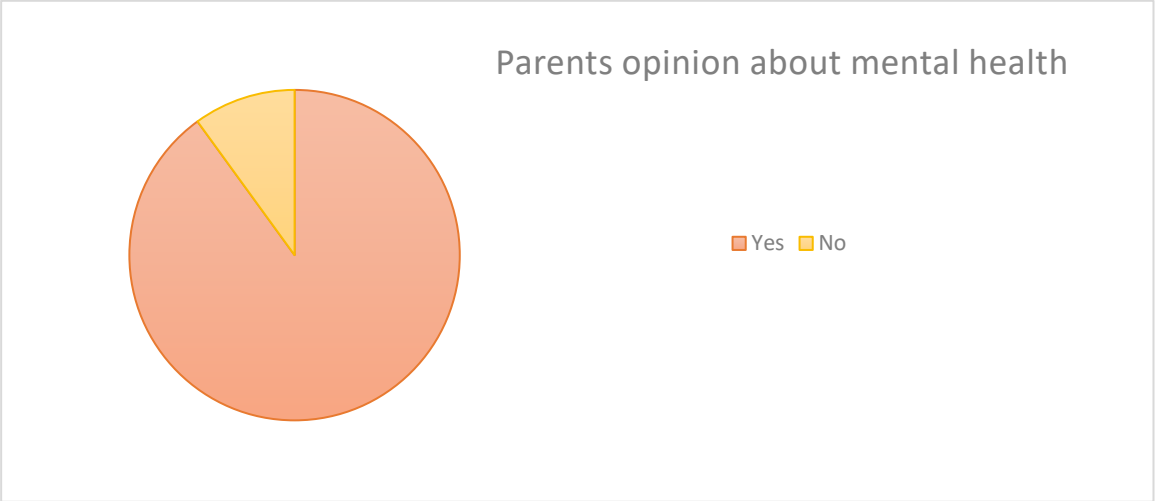
“Academic progress during the period of online education according to parents”



The next two questions explain each other. The first requires the parent's opinion on whether they are concerned about their child's mental health during the period of online education. While the question that follows asks about the reasons. From the answers given to the first question, it is evident that parents are concerned about their children's mental health, as depicted in the diagram. The majority of parents noticed that when this period came, their children enjoyed it. However, later they missed their friends and teachers.

Diagram 3.3.2.7.

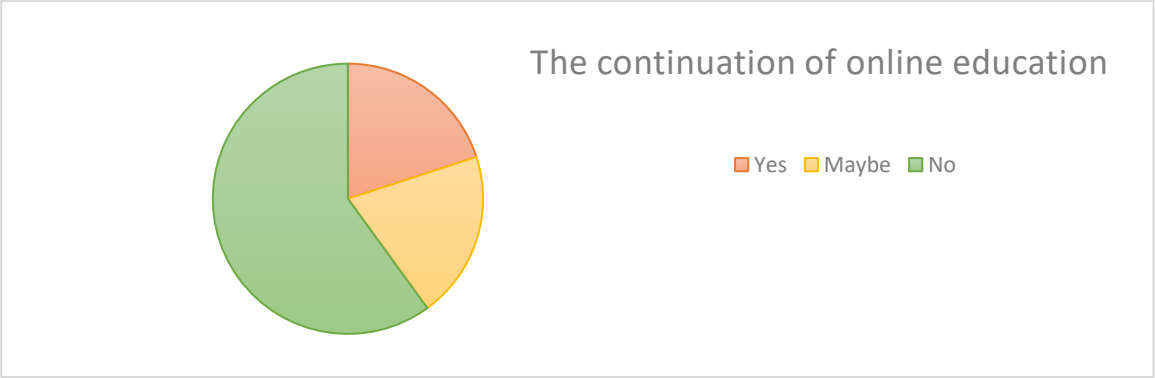
"The children's mental health status according to the parents"



In what follows, we also face two questions whose answers explain to each other. The first question asks whether or not the parent would like their child to continue to study online. The majority of parents answered no, which can be seen in the diagram.

Diagram 3.3.2.8.

"Should children continue online education?"



The justification for the above question was different, with the following answers:

- "On the one hand, it is easier for the parent to have their child study from home because they don't have to waste time on the bus ride in the morning, etc. during the time the student is preparing for class at home online, the student and teacher can understand each other."
- “Physical presence in the school, personal contact between teacher and student.”
- “I don't think it's mentally progressive for a child to stare at a monitor all day.”
- “I don't think online education will change much, but I could see that being all alone is not good.”
- “They weren't learning anything so I think it was a waste of time, if the lessons had been taught.”

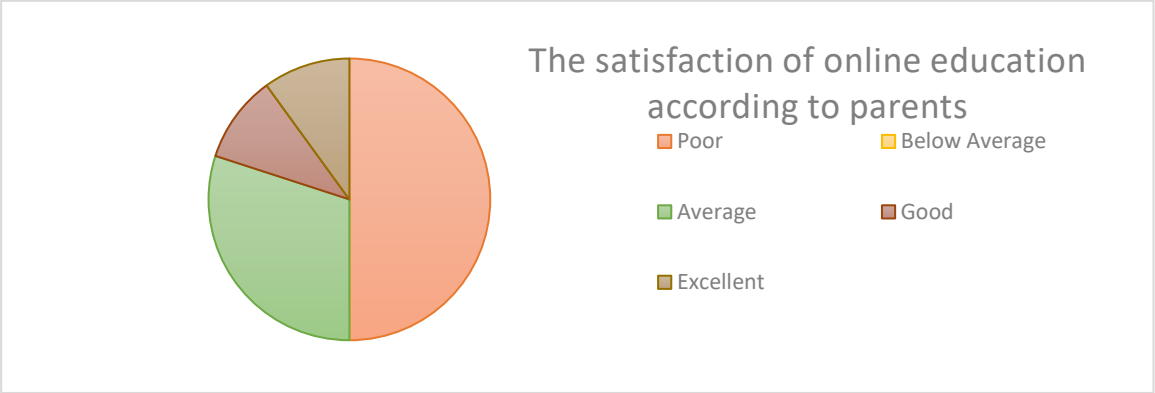
The last question in the first section is a summative question to determine what parents think about distance learning itself. The number of answer sheets is 5:

- Poor
- Below Average
- Average
- Good
- Excellent

These responses can be seen in the chart below.

Diagram 3.3.2.9.

“The satisfaction of online education according to parents”



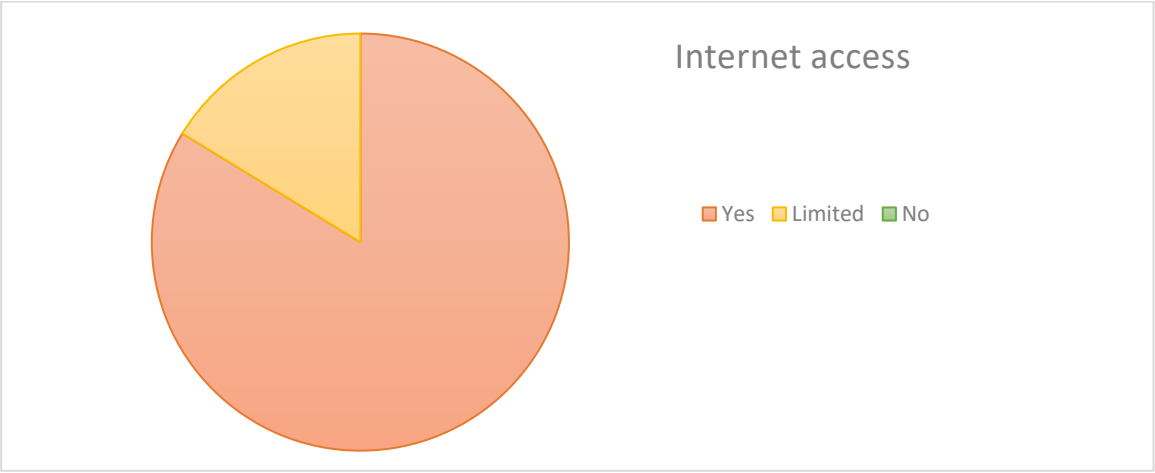
3.3.3. Third section of the questionnaire

At this section, the number of respondents reduced from 60 to 40. The focus of this section is on the students' and university students' experience. The section starts with a short information note explaining that this section is specifically designed for high school students and university student.

As already mentioned above, the first and second bids are the same in all sections. The first question is the following: "Do you have proper Internet access at home? *Here proper internet access refers to access through digital subscriber line (DSL, ADSL, VDSL, and DSL), cable internet access or fiber to the home?" 92% of respondents answered yes and the remaining 8% chose the limited option. The percentage of responses is shown in the following chart.

Diagram 3.3.3.1.

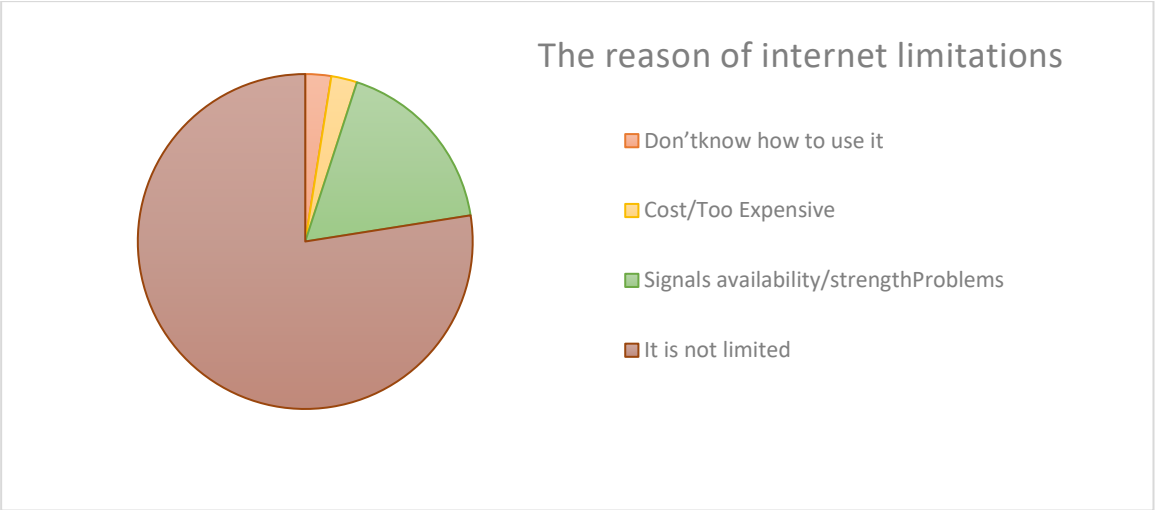
"Internet access"



The reasons for the question in the first question can be found in this question. It asked the respondent to identify the reasons why their internet access was limited. If it was not limited, then they could select the option "Not limited". The following can be seen on the diagram below.

Diagram 3.3.3.2.

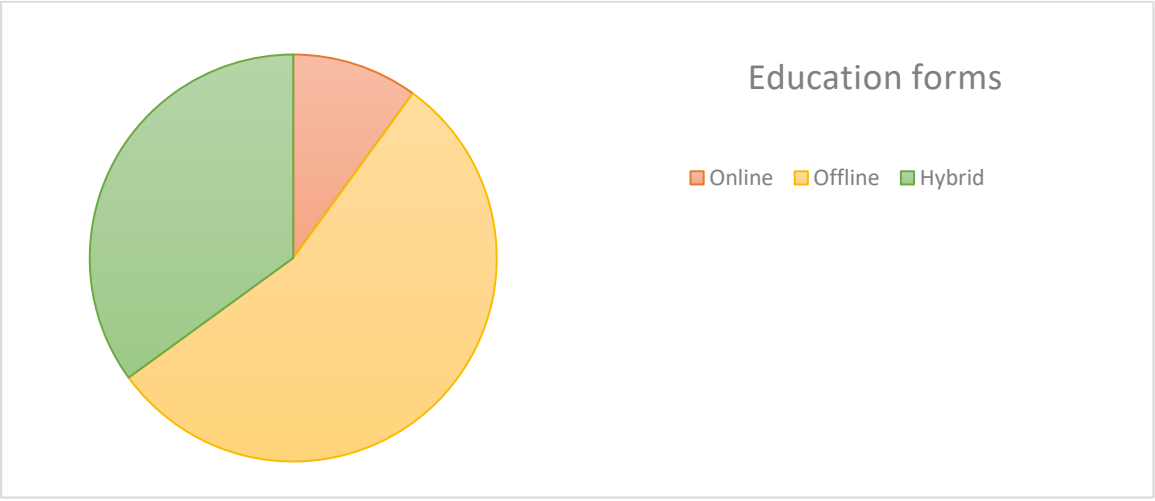
“The reason of internet limitations”



The next question asked was whether the university students and students would like to continue learning online. A fairly diverse range of responses was received, with 4 respondents wishing to continue their education online, 12 wishing to continue with hybrid education, and the remaining 22 wishing to continue offline. These answers can be seen on the diagram below.

Diagram 3.3.3.3.

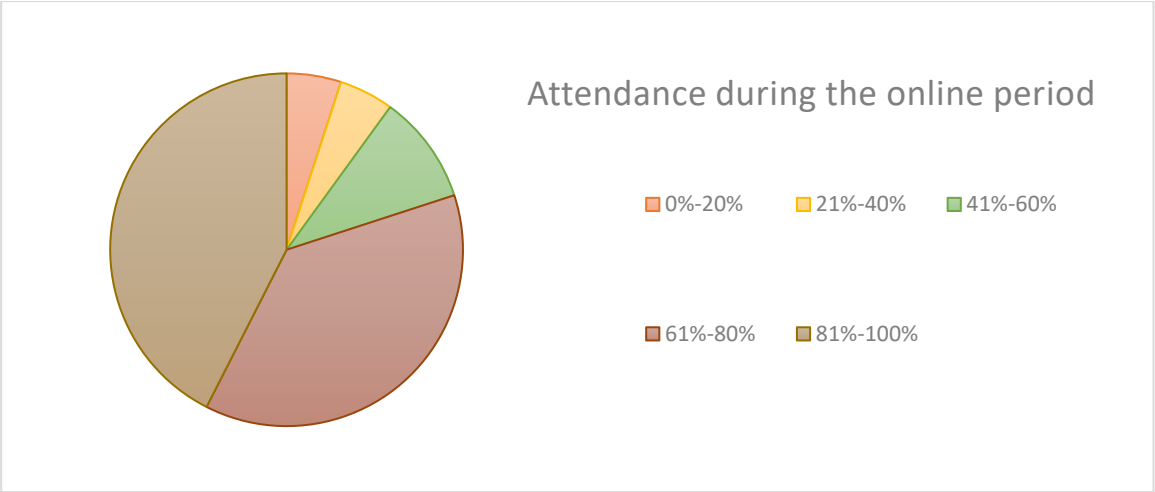
“The ways of continuing education”



The next question relates to attendance during the online period. There were 5 options available to each respondent, which were given in percentage form, staggered into intervals. The following diagram demonstrates this.

Diagram 3.3.3.4.

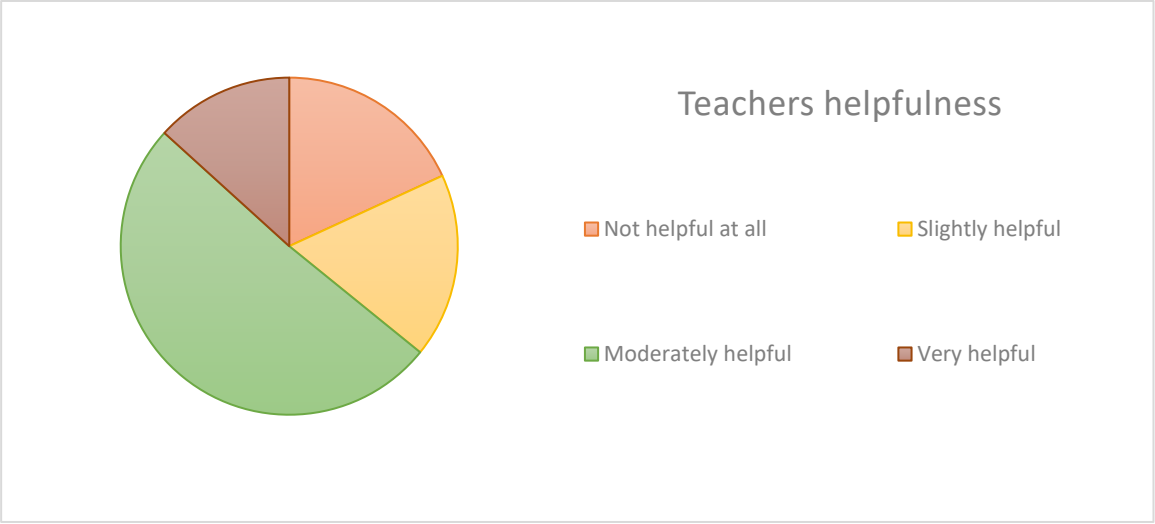
“Attendance during the online period”



The next question is about teachers and how helpful they were to students and university students. As can be seen in the chart, the helpfulness of teachers was quite variable.

Diagram 3.3.3.5.

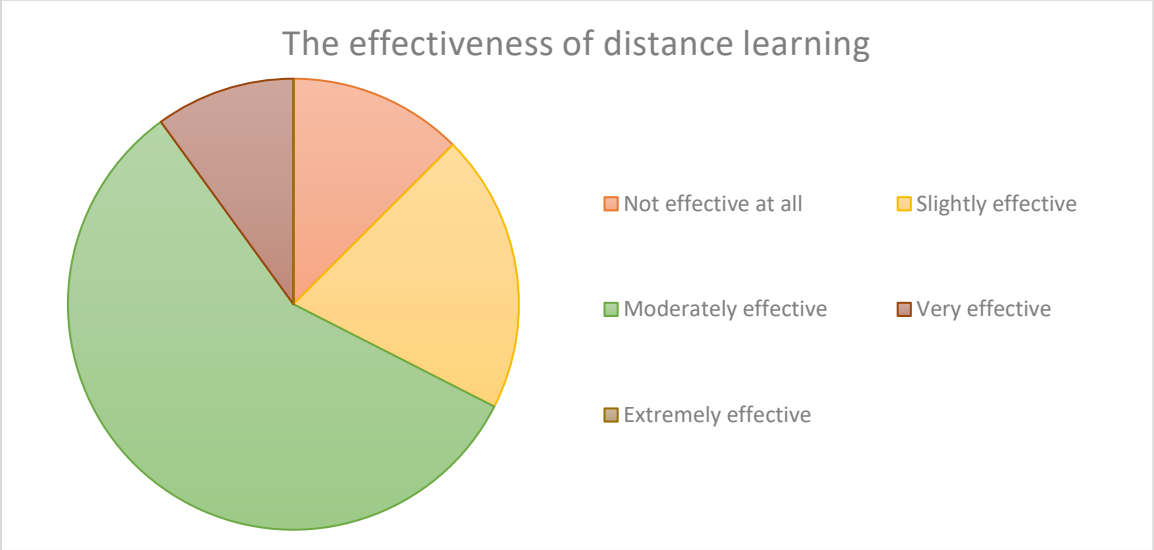
“Teachers helpfulness during online period”



The next question that was asked about the effectiveness of distance learning. To answer, the respondent was required to score the effectiveness of online education on a scale of 1 to 5 based on the student's tapestry. The diagram below is intended to illustrate this. As you can see the "Extremely effective" answer option was not selected by anyone.

Diagram 3.3.3.6.

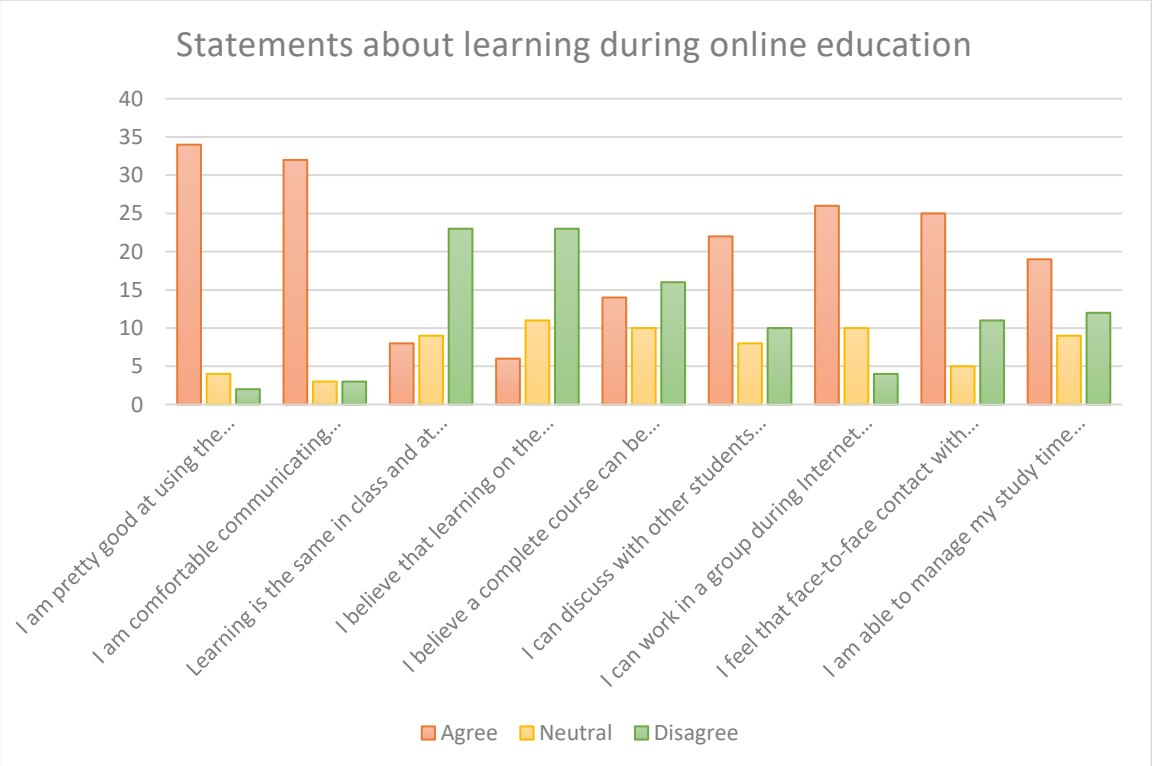
“The effectiveness of distance learning”



The next question consists of a table. The table is made up of statements and the option in the table was used to tick which statement the respondent agreed with. The table can be interpreted in the following diagrams.

Diagram 3.3.3.7.

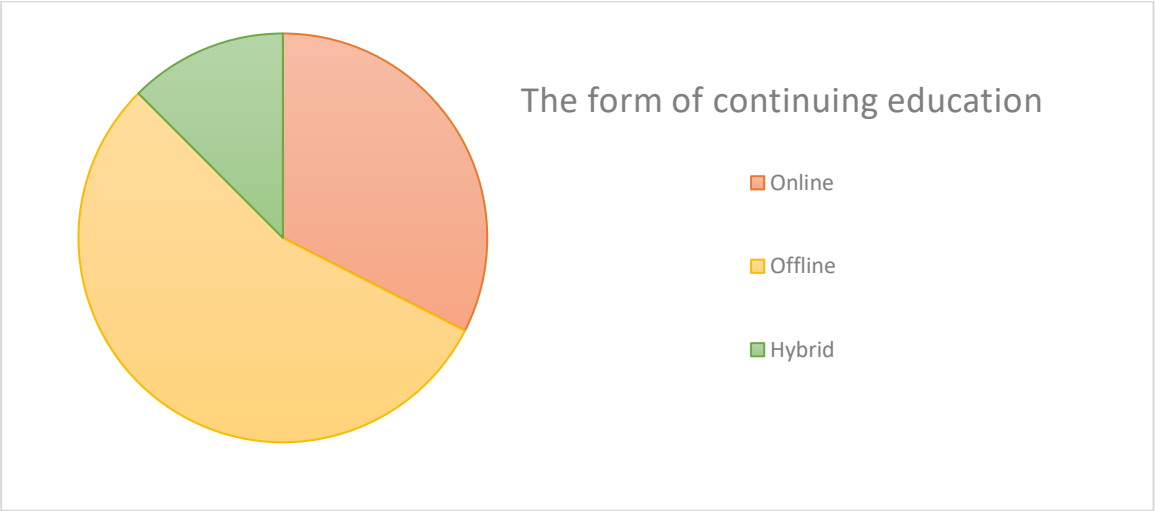
“Statements about learning during online education”



The next question asks students and learners how they would like to continue their education, i.e. in what form: online, offline or partly online and partly offline, which corresponds to hybrid education. The answers to this question are shown in the following diagram.

Diagram 3.3.3.8.

“The form of continuing education according to students”



In the next section, students are asked to justify their answers to the previous question, which are formulated as following:

- “More time for other things during online learning.”
- “I am not motivated”
- “I didn't have to spend an hour just to get to my classes. I had more time for myself.”
- “Online education can help you manage your time better”
- “Because in my opinion, there are subjects that are no longer necessary to study offline in high school (e.g. in 12th grade where computer science is in the foreground, there is one singing class a week)”
- “Some subjects cannot be taught online”
- “It is much easier to complete performance assessments online”
- “I think that the effectiveness of learning does not depend on whether one learns the material offline or online. Moreover, learning online from home is often more convenient and easier to schedule time to study.”
- “Because it's very convenient and lively”

- “Inefficient in my opinion”
- “Easier, but not better”
- “Not healthy to sit in front of a computer all day”
- “I still think the Hybrid solution is the best because it gives you a chance to reach the clock in difficult situations and at the same time it makes situations that require personal presence sufficiently.”
- “Yes, as I have managed my time much better”
- “My ideal way of studying is hybrid, with non-mandatory contact lessons.”
- “I find present learning more effective.”
- “Because I think that face-to-face attendance really improves the quality of a lesson and is much more effective”
- “Extreme example, but in science courses it is essential for the teacher to write by hand on the blackboard to deduce a material. Online, most of the time they just run through these.”
- “Not efficient enough”
- “For an extrovert, I found the whole online teaching thing a torture.”
- “Learning online gives me more time to do more things, but if I learn completely online, I run the risk of getting completely overwhelmed, procrastinating”
- “Some classes are back-to-back and it's almost impossible to catch both.”
- “Lectures are fine online but practical lessons are better in person.”
- “For some subjects, the online format is possible, but only rarely,”
- “In online teaching I like that I can manage my time how I want and study whenever I want.”
- “But sometimes I need help from teachers. Face to face communication and interaction is good too.”
- “For the easier subjects that don't require concrete practical training I think online teaching is viable.”
- “I did not really like online teaching.”
- “With online learning you can assume cheating in an exam, so it is not the best thing. One can prepare honestly and then be caught reading things from somewhere.”

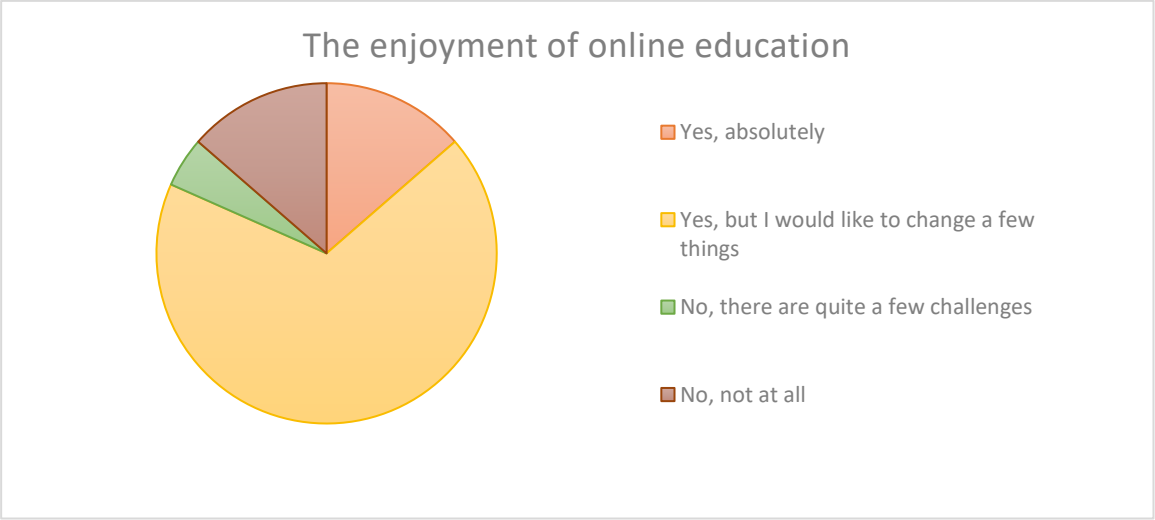
The next question discusses how much everyone enjoyed the online training. There were 4 options to answer this question:

- Yes, absolutely
- Yes, but I would like to change a few things
- No, there are quite a few challenges
- No, not at all

The following diagram shows the dispersion of these choices.

Diagram 3.3.3.9.

"The students and university students enjoyment towards the online education"

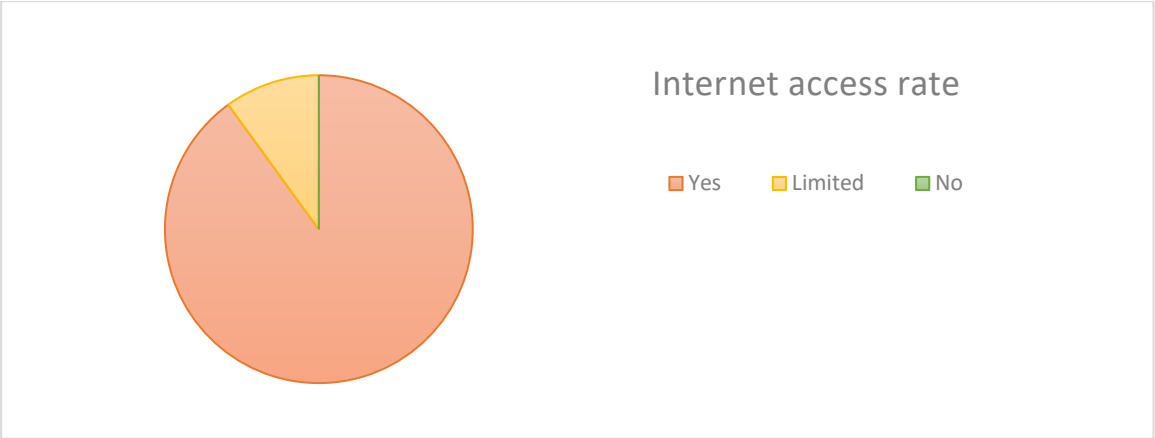


3.3.4. The fourth section of the questionnaire

The last session was for teachers. This session, like the previous two, began with a brief description of who the requests were addressed to. In this case, the number of respondents reached 10. The first question, as we have seen so far, is the same as the first two, which is to determine the internet access of the person filling in the questionnaire. The diagram below demonstrates the data.

Diagram 3.3.4.1.

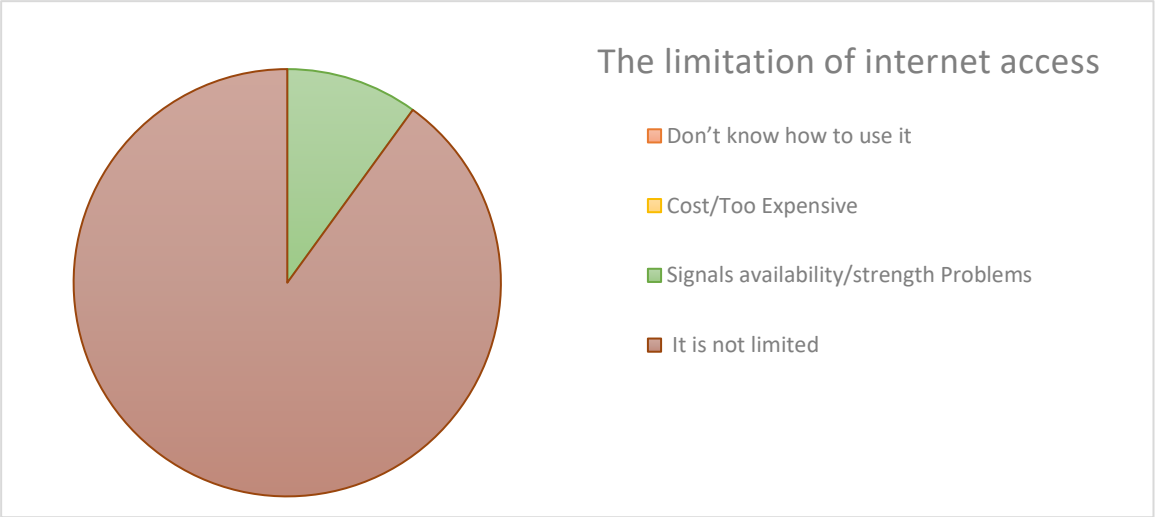
“Internet access rate”



The next question should be answered in more detail if the answer to the previous question was that internet access is limited. The following diagram shows the options and the answers.

Diagram 3.3.4.2.

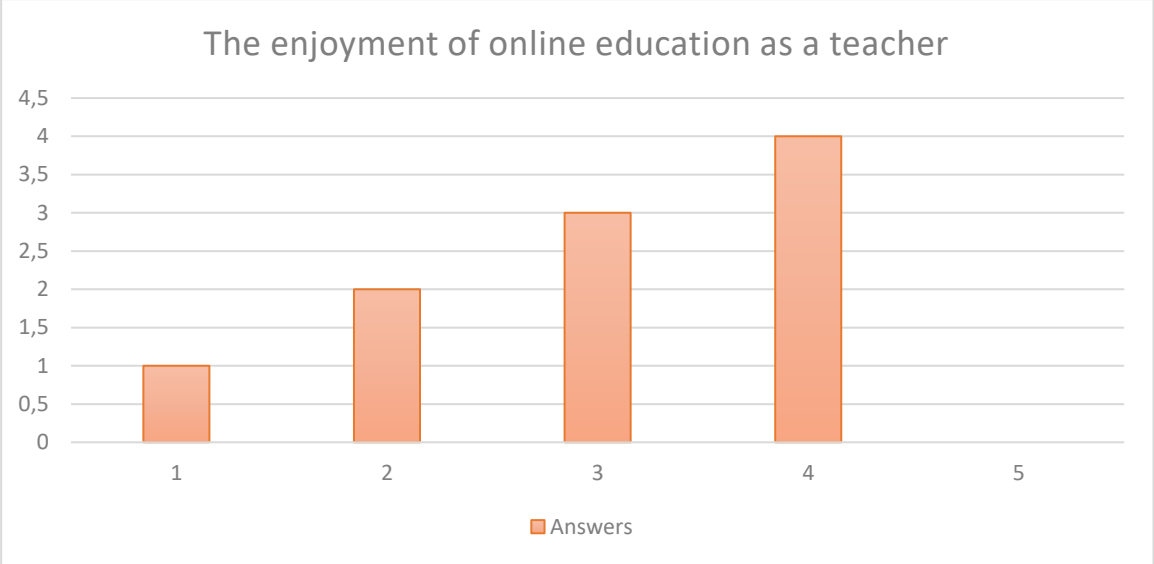
“The limitation of internet access”



The next question focuses on the enjoyment of online education as a teacher. In this question, they were asked to rate their enjoyment on a scale of 1 to 5, which is illustrated in the following diagram.

Diagram 3.3.4.3.

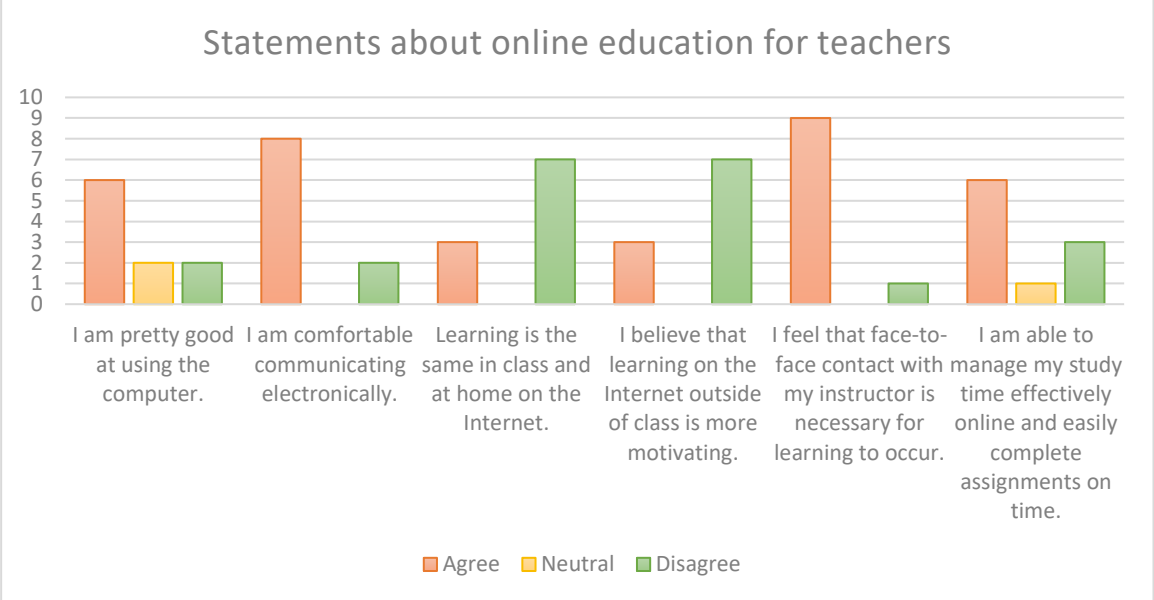
“The enjoyment of online education as a teacher”



The next question was implemented using a table. In this table, different statements were given that apply to the period of online education. Using three options, we had to select the statements we agree, disagree and disagree with. The following diagram represents the data extracted from the questionnaire.

Diagram 3.3.4.4.

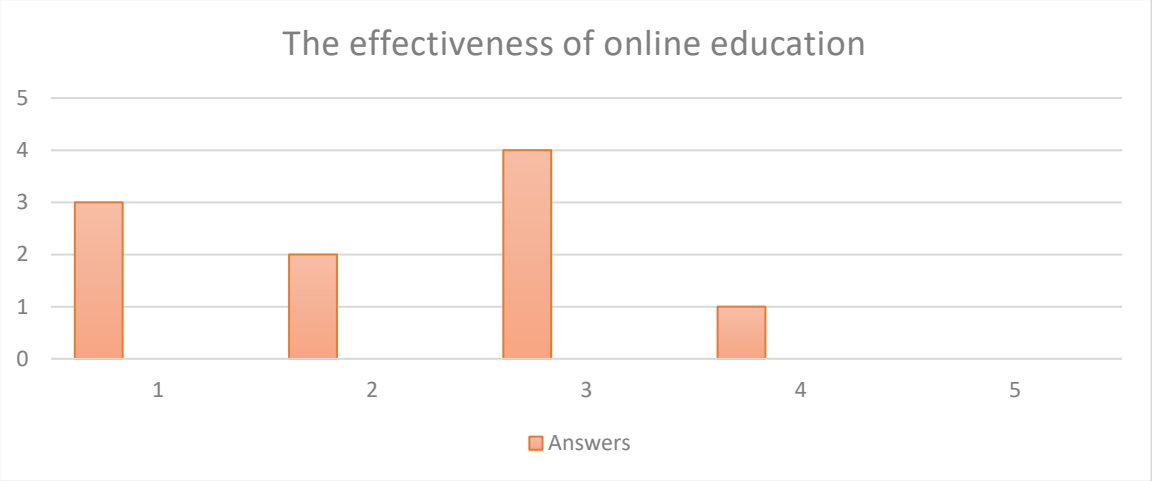
“Statements about online education for teachers”



The next question could be answered by selecting a number from a range of 1 to 5, from which you can choose. The question was "How effective do you think online education is?" The following diagram shows the answers to this question.

Diagram 3.3.4.5.

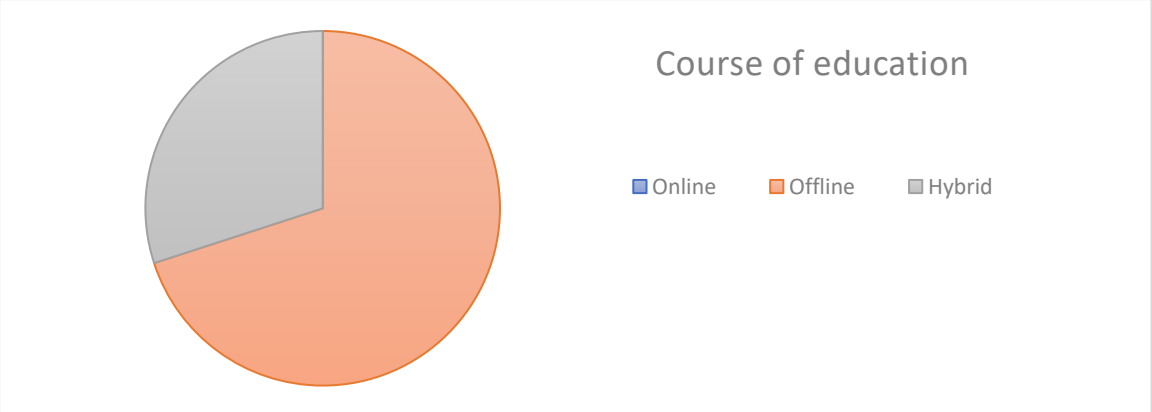
“The effectiveness of online education according to the teachers”



Next, the teachers were asked to choose the form they would most like to continue teaching in. There were three options to choose from: online, offline and hybrid. The following diagram shows how the responses to this question evolved.

Diagram 3.3.4.6.

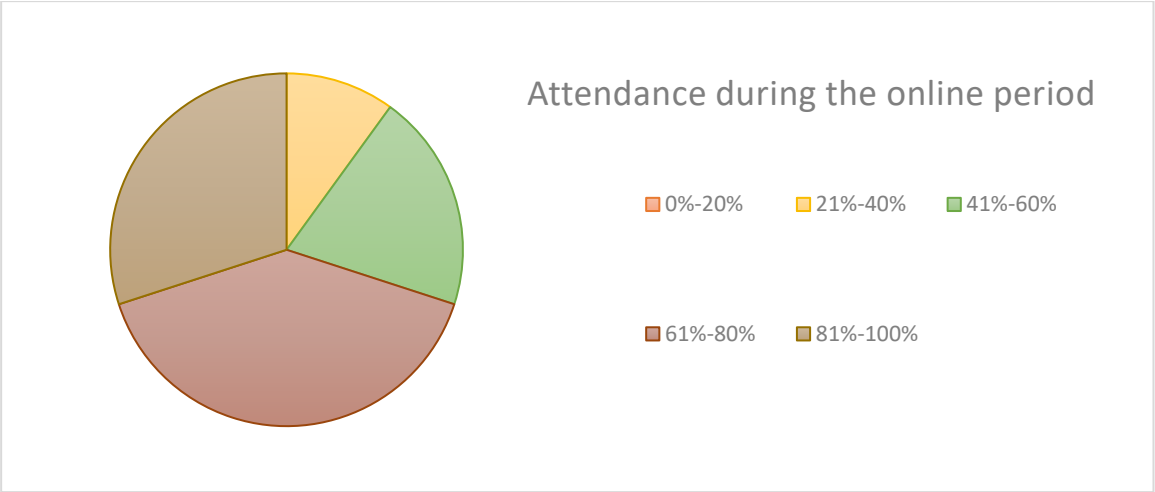
“The course of education in the future”



The next question is for teachers to ask their students about classroom visits. It was observed that the majority of teachers stated that their students attended their lessons, albeit poorly. The following chart shows teachers' experiences.

Diagram 3.3.4.7.

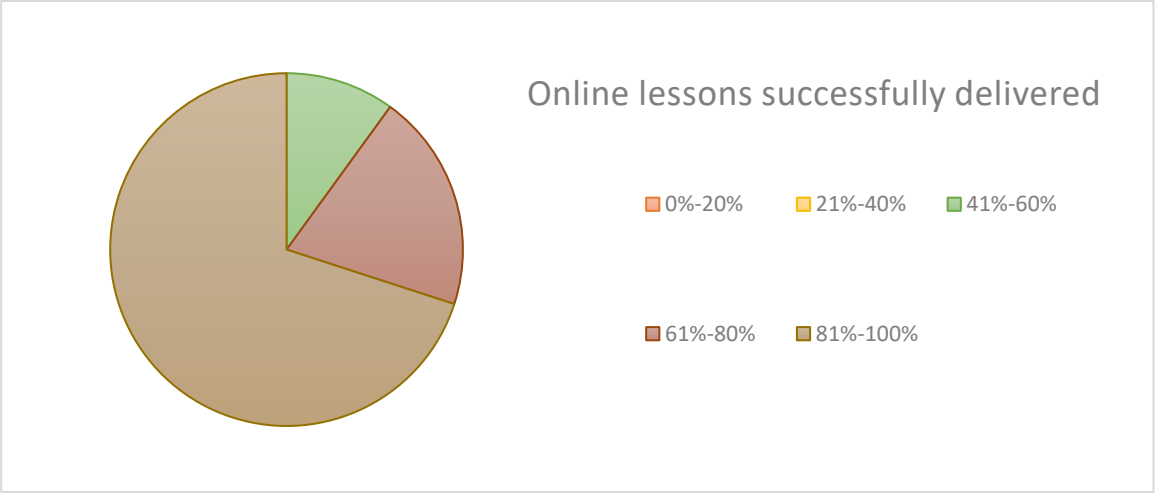
“Students’ attendance during online period from a teacher’s point of view”



Next, teachers will be asked to indicate what percentage of their lessons they have managed to keep online. The following chart illustrates this.

Diagram 3.3.4.8.

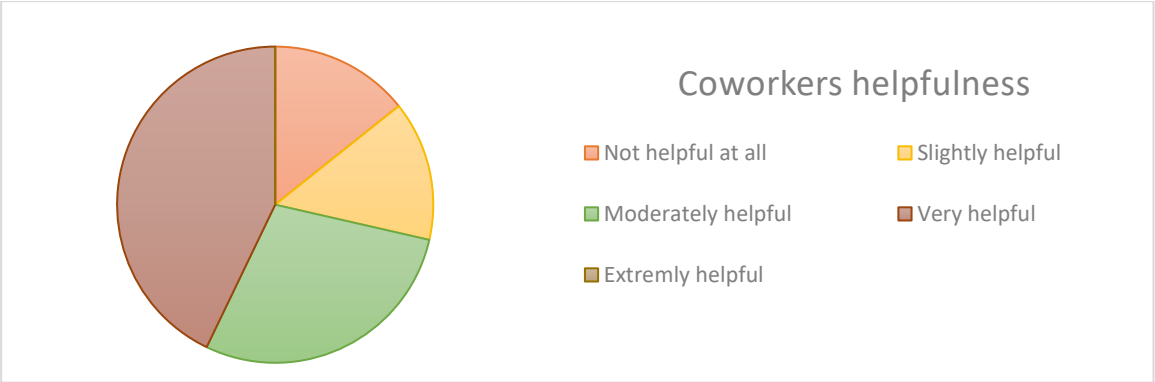
“Online lessons successfully delivered”



The next question assessed the teacher's relationship with the teachers and management of the educational institution in terms of their helpfulness. As can be seen from the slide, the helpfulness of teachers varies based on their experiences. And the diagram below illustrates this.

Diagram 3.3.4.9.

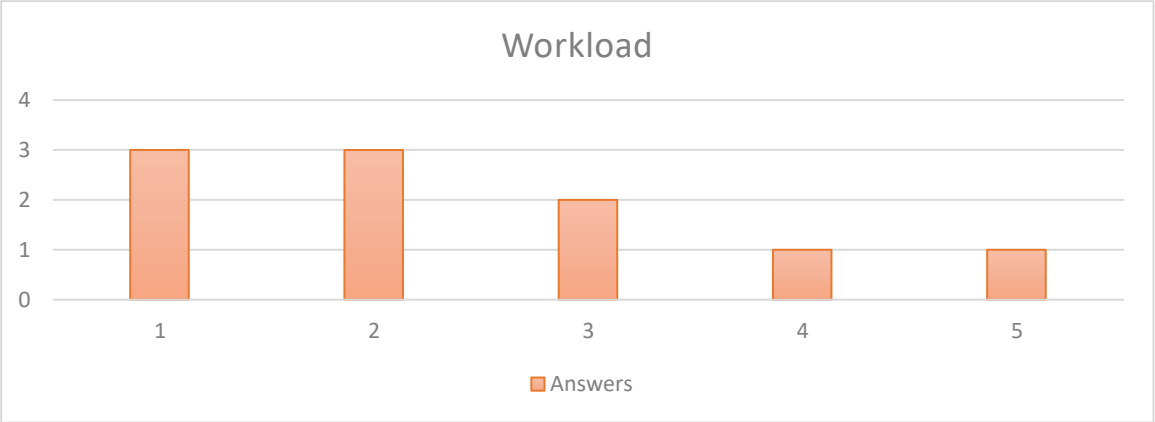
“The helpfulness of the institution and staff”



Online education has been demanding for teachers and students. The next question asked about teacher workload, which was rated on a scale of 1 to 5. The results are shown in the diagram.

Diagram 3.3.4.10.

“The workload on teachers during online education”



The next question asks about teachers' experiences with students, which had to be answered with a short description. The answers are:

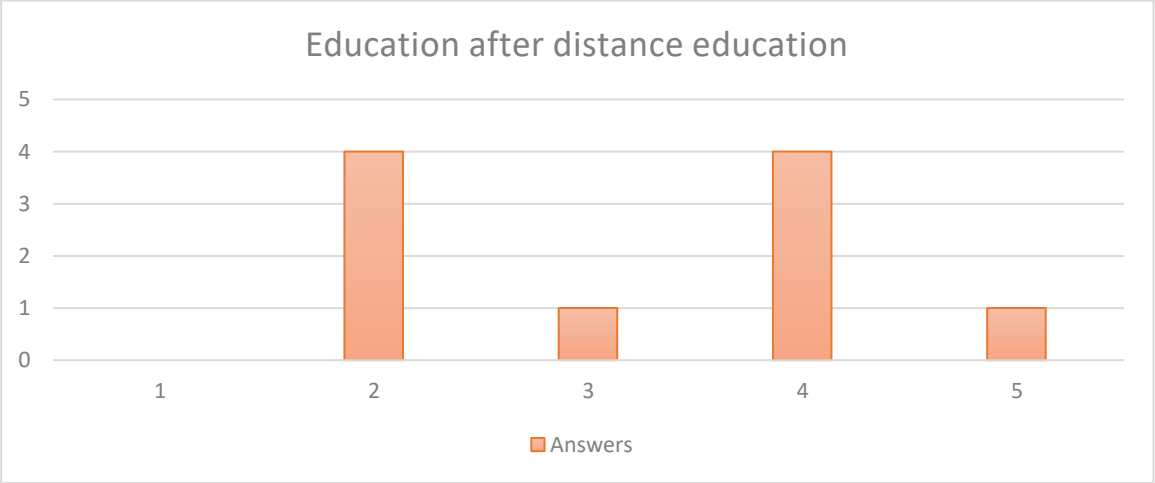
- “The students were not at all attentive and motivated. They found it very difficult to complete tasks”
- “Students took lessons and assignments half-heartedly.”
- “Turning in homework on time was difficult. They did not meet deadlines and did not want to cooperate well with the teacher”
- “Boring”

- “They were completely inattentive and made every lesson seem like a waste of time.”
- “My students really liked listening to my lessons in such a relaxed environment. I experienced nothing but good things compared to the school lessons.”
- “Since everyone joined the lessons from home, they were mostly doing something else besides listening to the lesson and so they didn't really pay attention to what I was saying.”
- “Everybody was just forced to attend the classes, which is completely understandable.”
- “Teaching a foreign language online is impossible, in my opinion.”
- “Everyone understood and did what I asked and said.”

Teachers and students had a very different experience of education during the online period. And for this question, we relied on the teachers' experiences to tell us how much their students are learning after distance learning. This was measured on a scale of 1 to 5.The chart below shows this.

Diagram 3.3.4.11.

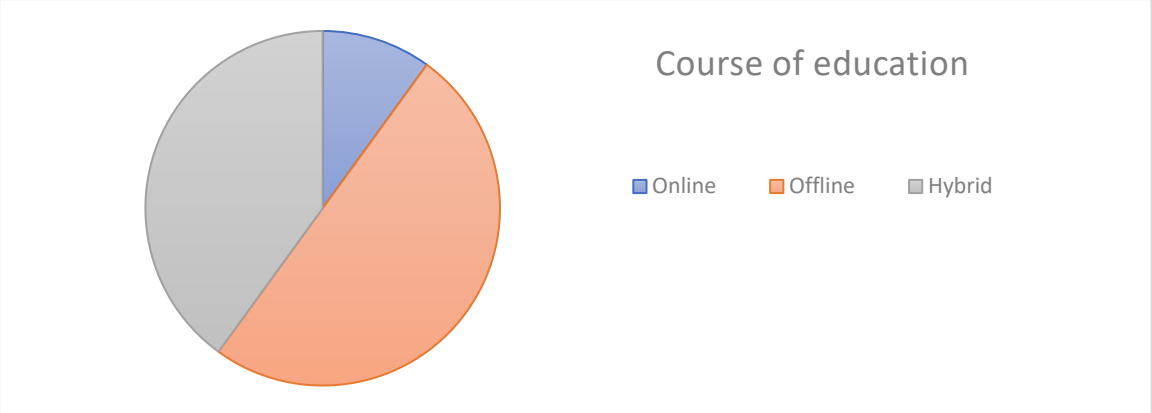
“Teachers' experiences on how much do the students learn after distance education”



As with parents and students, the question of whether they would like to continue teaching online was raised, so teachers were not left out. The majority of teachers answered no, which can be seen in the diagram.

Diagram 3.3.4.12.

“Course of education in the future according to teachers”



After answering the previous question, you had to write a short explanation of why you chose what you did. The following answers were given:

- “I think classroom education could give students more social and intellectual”
- “I could not dream of teaching online. It is impossible to deliver the material properly, and no one listens like in a regular classroom.”
- “I think it is much better for students to learn and listen to lessons in a relaxed environment at home, then face-to-face teaching and meeting school mates is an important part of a child's school years.”
- “I hated that no one listened to me during my lessons.”
- “I got used to the system of seeing children and being there to help and teach them.”
- “I would not want to go back. I didn't feel like I was moving forward with the kids.”
- “I liked the online instruction. I could be more creative with the software because of what I couldn't show in a classroom.”

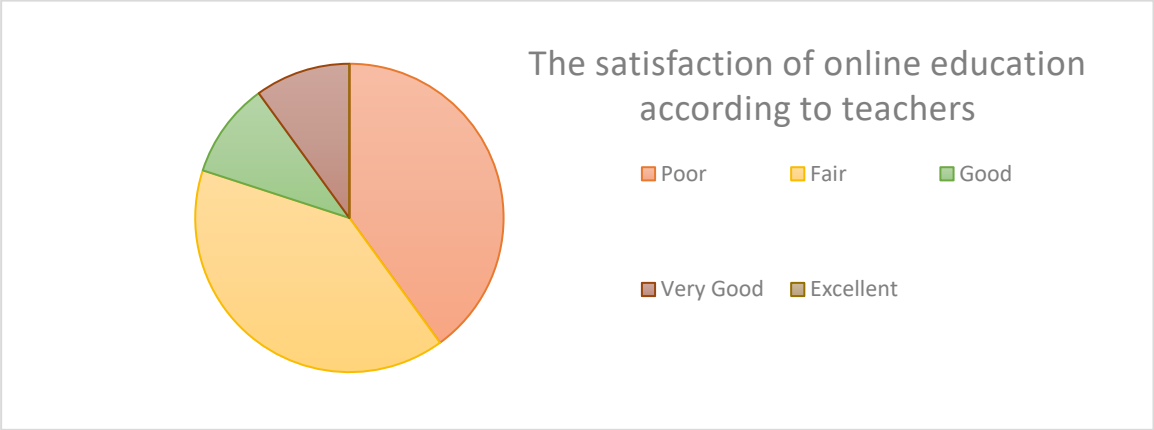
The next question requested a summary answer, which could be chosen from the following:

- Excellent
- Very good
- Good
- Fair
- Poor

The proportion of responses can be seen in the table.

Diagram 3.3.4.13.

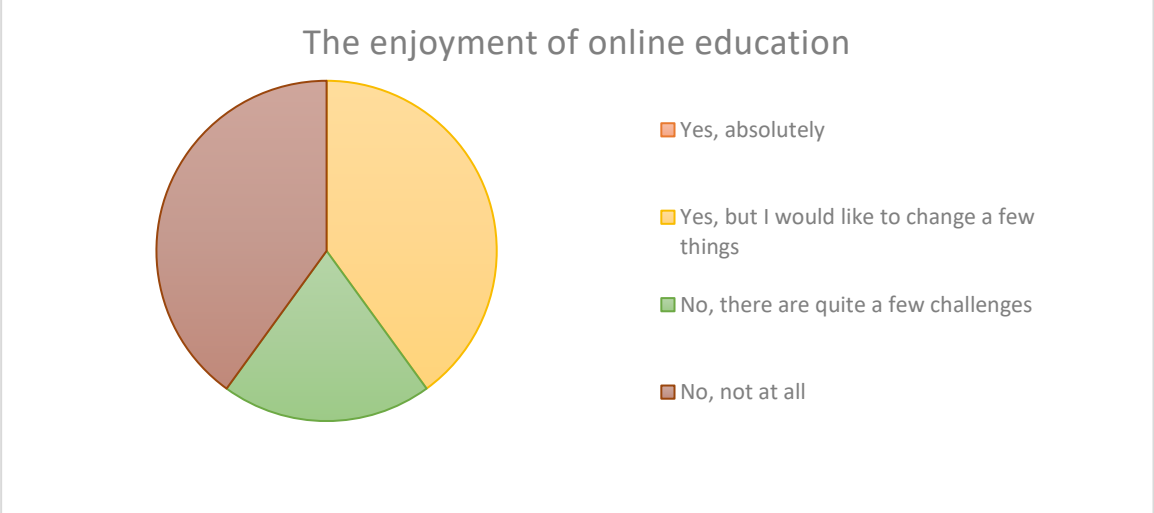
"The satisfaction of online education according to teachers"



The final question of the session focuses on how much teachers have enjoyed the period of online teaching. Data from this question can be seen in the following chart.

Diagram 3.3.4.14.

"The teachers enjoyment towards the online education"



3.4. The results of the questionnaire

Variations on the theme of online education based on different experiences are quite common. The diversity of the questions asked in the questionnaire and the variety of responses to these questions underscore this claim. In addition, the results, illustrated by diagrams, show a striking contrast between the responses.

One of the aims of the questionnaire was to present the various experiences teachers, students and parents had during the Pandemic while teaching, learning and working using online education. This part of the research was based on the differences between answers from teacher, students and parents, which shows that each of them had their own experience let it be positive or negative. The second aim was to show the drawbacks and positive aspects of online education. This part was shown during the when analyzing questions that explicitly asked about experiences that were negative and/or positive. The third aim was to be able to make the reader understand how can the Digital Learning Environment be improved. The different responses suggest that digital education has room for improvement in terms of clarity, accessibility and transparency. After all, an older teacher and/or parent will not be able to develop at the same speed as a teenage child.

GENERAL CONCLUSIONS

It is striking how the digital world is shaping reality, and education is no exception. Digitalisation has a major impact on the way educators teach, students learn, and schools operate. It is undeniable that digital development is the driving force of our world. It is changing and transforming education as we knew it centuries ago, or even 10 years ago.

The first part of the thesis contributes to accomplishment of the first and second tasks set out in the thesis. The first part of the thesis explains the history of DLE, which contributes to the reader's understanding of the importance and relevance of the topic. In the first part, all three subsections contribute to a better understanding of this topic by the reader. As we progress through the parts, countless inventors and developers are named who contributed to the creation of the modern Digital Learning Environment. The second subchapter highlights the definition and classification of the Digital Learning Environment. Furthermore, the subchapter provides an insight into the toolbox of the digital learning environment. The last subchapter focuses on a more modern concept that is called e-learning. This part describes the main differences between e-learning and DLE, which can make the navigation in the world of DLE easier.

The second part of the thesis contributes to the better understanding of the second, third and fourth tasks, which are formulated in the thesis. The second part approaches online education from several angles to help the reader understand it better. Firstly, it introduces what place-based education is. Secondly, the reader can read about online institutionalization. Here, readers can compare their experiences to those described in this section, as they have experienced it themselves. The last sub-chapter can be seen as a guide for teachers and students alike. It demonstrates the role of teachers in a modern educational space.

A number of conclusions can be drawn from the latter part of the research. The first conclusion is that teachers, parents and students experienced the period of online education differently. The responses to the questionnaire show that the majority were not fully satisfied with the online education, for a number of reasons, such as parents noticing that their children were becoming lazy, students missing their peers and teachers not feeling valued. For this reason, online tutoring would only be used again as a last resort, as all three groups require the use of face-to-face tutoring.

РЕЗЮМЕ

Вражає те, як цифровий світ формує реальність, і освіта не є винятком. Цифровізація має значний вплив на те, як викладачі викладають, студенти навчаються та як працюють школи. Не можна заперечувати, що цифровий розвиток є рушійною силою нашого світу. Він змінює і трансформує освіту, якою ми знали її століття тому, або навіть 10 років тому.

Перша частина дисертації сприяє виконанню першого та другого завдань, викладених у дисертації. У першій частині дисертації пояснюється історія розвитку ЕНК, що сприяє розумінню читачем важливості та актуальності теми. У першій частині всі три підрозділи сприяють кращому розумінню цієї теми читачем. У міру того, як ми просуваємося по частинах, згадуються незліченні винахідники і розробники, які зробили свій внесок у створення сучасного цифрового навчального середовища. Другий підрозділ висвітлює визначення та класифікацію цифрового навчального середовища. Крім того, підрозділ дає уявлення про інструментарій цифрового навчального середовища. Останній підрозділ присвячений більш сучасній концепції, яка називається електронним навчанням. У цій частині описуються основні відмінності між е-навчанням та ЕНК, які можуть полегшити навігацію у світі ЕНК.

Друга частина дипломної роботи сприяє кращому розумінню другого, третього і четвертого завдань, які сформульовані в дипломній роботі. Друга частина розглядає онлайн-освіту з декількох сторін, щоб допомогти читачеві краще зрозуміти її. По-перше, вона знайомить читача з тим, що таке освіта, заснована на місці. По-друге, читач може прочитати про інституціоналізацію онлайн-освіти. Тут читачі можуть порівняти свій досвід з тим, що описано в цьому розділі, оскільки вони самі його пережили. Останній підрозділ можна розглядати як посібник як для вчителів, так і для учнів. Він демонструє роль вчителя в сучасному освітньому просторі.

З останньої частини дослідження можна зробити кілька висновків. Перший висновок полягає в тому, що вчителі, батьки та учні по-різному пережили період онлайн-освіти. Відповіді на запитання анкети показують, що більшість не були повністю задоволені онлайн-освітою через низку причин: батьки помітили, що їхні діти стали лінивими, учні сумували за однолітками, а вчителі не відчували, що їхню роботу цінують. З цієї причини репетиторство онлайн буде використовуватися лише в крайньому випадку, оскільки всі три групи потребують особистого репетиторства.

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APPENDICES

Appendix A:

First section – Questions for Everyone

1. Az Ön neme/ Your gender:
   - Nő/Female
   - Férfi/Male
2. Az Ön életkora/ Your age: _____
3. Az Ön legmagasabb végzettsége/Your highest qualification:
   - Maximum 8 általános iskolai osztály/A maximum of 8 primary school classes
   - Középiskolai érettségi (gimnázium, szakközépiskola, szakgimnázium)/Secondary school leaving certificate (gymnasium, vocational high school, vocational high school)
   - Technikum, OKJ vagy felsőfokú végzettség/Technical school or higher education
   - Jelenleg is felsőoktatási tanulmányokat folytat (BA/BSc)/Is currently pursuing higher education studies (BA/BSc)
   - Egyetemi diploma (BA/BSc)/University degree (BA/BSc)
   - Posztgraduális végzettség (MA/MSc, PhD, egyéb)/Postgraduate qualification (MA/MSc, PhD, other)
4. Az Ön foglalkozása/Your occupation: _____
5. Az Ön lakóhelye/Your place of residence:
   - falu/village
   - város/town
   - megyeszékhely/county seat
   - főváros/capital
6. Ön tanár/oktató volt a pandémia alatt?/Were you a teacher/educator during the pandemic?
   - Igen/yes
   - Nem/no
7. Ön diák/hallgató volt a pandémia alatt?/Were you a student during the pandemic?

- Igen/yes
- Nem/no

8. Ön szülő/hozzátartozó volt a pandémia alatt?/Were you a parent/relative during the pandemic?

- Igen/yes
- Nem/no

Ezen három kérdés megválaszolása után a kérdőív 3 másik szakaszra vezeti a kitöltőt. Amennyiben igennel válaszolnak arra a kérdésre, hogy: „Ön tanár/oktató volt a pandémia alatt?/Were you a teacher/educator during the pandemic?", akkor a negyedik szekcióban folytatja tovább a résztvevő a kérdőív kitöltését.

Amennyiben igennel válaszolnak arra a kérdésre, hogy: „Ön diák/hallgató volt a pandémia alatt?/Were you a student during the pandemic?", akkor a harmadik szekcióban folytatja tovább a résztvevő a kérdőív kitöltését.

Amennyiben igennel válaszolnak arra a kérdésre, hogy: „Ön szülő/hozzátartozó volt a pandémia alatt?/Were you a parent/relative during the pandemic?", akkor az első szekcióban folytatja tovább a résztvevő a kérdőív kitöltését.

Second section – Questions for Parents (Relatives)

1. Rendelkezik otthon megfelelő internet-hozzáféréssel? *Itt a megfelelő internet-hozzáférés a digitális előfizetői vonalon (DSL, ADSL, VDSL és DSL), vezetékes internet- vagy üvegszálas otthoni hozzáférésre vonatkozik./ Do you have proper Internet access at home? *Here proper internet access refers to access through digital subscriber line (DSL, ADSL, SDSL, and VDSL), cable internet access or fiber to the home.

- Igen/Yes
- Korlátozott/Limited
- No

2. Mi a fő oka a korlátozott internet-hozzáférésnek?/What is the main reason you have limited Internet access?

- Nem tudom hogyan kell használni/Don't know how to use it
- Túl drága/Cost/Too Expensive
- A jelek elérhetősége/erőssége Problémák/ Signals availability/strength Problems

- Nem korlátozott/It is not limited
- Egyéb/Other

3. Mennyire tudta jól beosztani az időt távoli tanulás közben? (Tekintsük az 5-öst nagyon jól, az 1-est pedig az, hogy egyáltalán nem)/ How well could you manage time while learning remotely? (Consider 5 being extremely well and 1 being not at all)

1- 5

4. Ön szerint mennyire hatásos az online oktatás? (1 - egyáltalán nem volt hatásos, 5 - nagyon hatásos volt)/How effective do you think online education is? (1 - it was not effective at all, 5 - it was very effective)

5. Milyen hatással volt az online oktatás a gyermeke tanulására? (kérem rövid írja le tapasztalatait)/How has online education affected your child's learning? (please briefly describe your experience) _____

6. Mennyire élvezte gyermeke az online oktatást? (1 - egyáltalán nem, 5 - nagyon)/How much did your child enjoy online education? (1 - not at all, 5 - very much)

7. Ön mennyire volt megelégedve az online oktatással? (1 - egyáltalán nem voltam megelégedve, 5 - nagyon meg voltam vele elégedeve)/How satisfied were you with online education? (1 - I was not satisfied at all, 5 - I was very satisfied)

8. Ön szerint javult az oktatás színvonala online oktatás alatt?/Do you think the quality of education has improved during online education?

- Igen/Yes
- Nem/No

9. Biztos benne, hogy gyermeke megfelelő tanulmányi előrehaladást ér el a távoktatás révén?/Are you confident your child will make adequate academic progress through remote learning?

- Igen/Yes
- Nem/No

10. Kérem röviden indokolja meg válaszát röviden./Please provide a brief explanation of your answer.

11. Milyen gyakran segít gyermekének az iskolai munkában?/How frequently do you assist your child with their schoolwork?

- Naponta – Nagyon ritkán/On a daily basis - Rarely

12. Aggódik gyermeke/gyermekei szociális-érzelmi egészsége miatt az online tanulási időszak alatt?/Are worried you about your child/children’s social-emotional health during the online learning period?

- Igen/Yes
- Nem/No

13. Kérem röviden indokolja meg válaszát röviden./Please provide a brief explanation of your answer.

14. Ön, mint szülő (hozzátartozó) szeretné, hogy gyermeke folytassa a tanulást online?/Do you, as a parent (relative), want your child to continue learning online?

- Igen/Yes
- Nem/No
- Részben/Partly

15. Kérem röviden indokolja meg válaszát röviden./Please provide a brief explanation of your answer.

16. Ön, mint szülő/hozzátartozó, hogy gondolja a tanárok/oktatók tudják kellően motiválni a diákokat/hallgatókat az órák folyamán?/As a parent/relative, do you think the teachers/instructors can sufficiently motivate the students/students during the lessons?

- Igen/Yes
- Nem/No

17. Kérem röviden indokolja meg válaszát röviden. /Please provide a brief explanation of your answer.

18. Összességében hogyan vélekedik a távoktatásról?/How do you feel overall about distance education?

- Gyenge/Poor
- Átlagon aluli/Below Average
- Átlagos/Average
- Jó/Good
- Tökéletes/Excellent

Third section - Questions for High School and University Students.

1. Rendelkezik otthon megfelelő internet-hozzáféréssel? *Itt a megfelelő internet-hozzáférés a digitális előfizetői vonalon (DSL, ADSL, VDSL és DSL), vezetékes internet- vagy üvegszálas otthoni hozzáférésre vonatkozik./Do you have proper Internet access at home? *Here proper internet access refers to access through digital subscriber line (DSL, ADSL, VDSL, and DSL), cable internet access or fiber to the home.

- Igen/Yes
- Korlátozott/Limited

- Nem/No

2. Mi a fő oka a korlátozott internet-hozzáférésnek?/What is the main reason you have limited Internet access?

- Nem tudom hogyan kell használni/Don't know how to use it
- Túl drága/Cost/Too Expensive
- A jelek elérhetősége/erőssége Problémák/ Signals availability/strength
- Nem korlátozott/It is not limited
- Egyéb/Other_____

3. Ön hogyan szeretne tanulni?/How would you like to learn??

- Online
- Offline
- Hibrid/Hybrid

4. Mennyire tudtad jól beosztani az időt távoli tanulás közben? (Tekintsük az 5-öst nagyon jól, az 1-est pedig az, hogy egyáltalán nem)/How well could you manage time while learning remotely? (Consider 5 being extremely well and 1 being not at all)

5. Ön, mint hallgató/diák, milyen gyakran vett részt az online óráin?/As a student, how often did you attend your online classes?

- 0% - 20%
- 21% - 40%
- 41% - 60%
- 61% - 80%
- 81% - 100%

6. Mennyire segítőkészek voltak a tanárai az online tanulás során?/How helpful were your teachers while studying online?

- Egyáltalán nem voltak segítőkészek/Not at all helpful
- Kissé segítőkészek/Slightly helpful
- Közepesen segítőkész/Moderately helpful
- Nagyon segítőkészek/Very helpful/Very helpful

7. Mennyire volt hatékony számodra a távoktatás?/How effective has remote learning been for you?

- Egyáltalán nem hatékony/Not at all effective
- Kissé hatékony/Slightly effective
- Közepesen hatékony/Moderately effective

- Nagyon hatékony/Very effective
- Rendkívűl hatékony/Extremely effective

8. Melyik a legkedveltebb módszer a kétségek eloszlatására az online tanulás során?/What is your most preferred method for clearing doubts in online learning?

- Kérdezze meg a professzort egy online előadás közben/után/Ask the professor during/after an online lecture
- Tegye közzé a lekérdezést osztálya vitafórumában, és kérjen segítséget társaitól/Post the query in a discussion forum of your class and get help from your peers
- Elolvassa az online anyagot, amely további magyarázatot tartalmaz/Go through online material providing an additional explanation

9. Milyen eszközt használsz a távoktatáshoz?/What device do you use for distance learning?

- Laptop
- Asztali gép/Desktop
- Tablet
- Okostelefon/Smartphone
- Egyéb/Other:_____

10. A pandémia alatt milyen applikációkat/programokat használt a tanulásra?/What applications/programs did you use to study during the pandemic?

- skype
- webex
- zoom
- google classroom
- google meets
- teams
- discord
- egyéb/other:_____

11. Milyen gyakran hallasz tanáraidtól online tanulás közben?/How often do you hear from your teachers when learning remotely?

- Soha/Never
- Ritkán/Rarely
- Néha/Sometimes

- Gyakran/Often
- Mindig/Always

12. Ön mennyire volt megelégedve az online oktatással? (1 - egyáltalán nem voltam megelégedve, 5 - nagyon meg voltam vele elégedeve)/How satisfied were you with online education? (1 - I was completely not satisfied, 5 - I was very satisfied)

13. Ön szerint mennyire hatásos az online oktatás? (1 - egyáltalán nem volt hatásos, 5 - nagyon hatásos volt)/How effective do you think online education is? (1 - it was not effective at all, 5 - it was very effective)

14. Kérem válassza ki azon négyzeteket, amelyekkel egyetért./Please select the boxes you agree with.

	Egyetértek/Agree	Nincs véleményem/Neutral	Nem értek egyet/Disagree
Nagyon jól tudom használni a számítógépet./I am pretty good at using the computer.			
Jól tudok elektronikusan kommunikálni./I am comfortable communicating electronically.			
A tanulás ugyanaz az órán és otthon az interneten./Learning is the same in class and at home on the Internet.			
Úgy gondolom, hogy az órán kívüli internetes			

tanulás motiválóbb./I believe that learning on the Internet outside of class is more motivating.			
Úgy gondolom, hogy az interneten egy teljes tanfolyamot nehézség nélkül meg lehet adni./I believe a complete course can be given by the Internet without difficulty.			
Megbeszélhetem más tanulókkal az órán kívüli internetes tevékenységek során./I can discuss with other students during Internet activities outside of class.			
Tudok csoportban dolgozni órán kívüli internetes tevékenységek során./I can work in a group during Internet activities outside of class.			

Úgy érzem, hogy az oktatómmal való személyes kapcsolat szükséges a tanuláshoz./I feel that face-to-face contact with my instructor is necessary for learning to occur.			
Képes vagyok hatékonyan beosztani a tanulási időmet online, és könnyedén, időben elvégezni a feladatokat./I am able to manage my study time effectively online and easily complete assignments on time.			

15. Ön folytatná az tanulást online?/Would you like to continue studying online?

- Igen/Yes
- Nem/No
- RészbenPartly

16. Kérem röviden indokolja meg válaszát röviden. /Please provide a brief explanation of your answer.

17. Ön élvezte az online oktatást?/Did you enjoy learning remotely?

- Igen teljes mértékben/Yes, absolutely
- Igen, de szeretnék megváltoztatni néhány dolgot/Yes, but I would like to change a few things
- Nem, rengeteg a kihívás/No, there are quite a few challenges

- Nem egyáltalán nem/No, not at all

Fourth Section - Questions for Teachers

1. Rendelkezik otthon megfelelő internet-hozzáféréssel? *Itt a megfelelő internet-hozzáférés a digitális előfizetői vonalon (DSL, ADSL, VDSL és DSL), vezetékes internet- vagy üvegszálas otthoni hozzáférésre vonatkozik./Do you have proper Internet access at home? *Here proper internet access refers to access through digital subscriber line (DSL, ADSL, VDSL, and DSL), cable internet access or fiber to the home.

- Igen/Yes
- Korlátozoztt/Limited
- Nem/No

2. Mi a fő oka a korlátozott internet-hozzáférésnek?/What is the main reason you have limited Internet access?

- Nem tudom hogyan kell használni/Don't know how to use it
- Túl drága/Cost/Too Expensive
- A jelek elérhetősége/erőssége Problémák/ Signals availability/strength Problems/
- Nem korlátozott/It is not limited
- Egyéb/Other_____

3. Mennyire tudtad jól beosztani az időt távoli tanulás közben? (Tekintsük az 5-öst nagyon jól, az 1-est pedig az, hogy egyáltalán nem)/How well could you manage time while learning remotely? (Consider 5 being extremely well and 1 being not at all)

4. Ön mennyire volt megelégedve az online oktatással? (1 - egyáltalán nem voltam megelégedve, 5 - nagyon meg voltam vele elégedeve)/How satisfied were you with online education? (1 - I was not satisfied at all, 5 - I was very satisfied)

5. Kérem válassza ki azon négyzeteket, amelyekkel egyetért./Please select the boxes you agree with.

	Egyetértek/Agree	Nincs véleményem/Neutral	Nem értek egyet/Disagree
Nagyon jól tudom használni a számítógépet./I am			

pretty good at using the computer.			
Jól tudok elektronikusan kommunikálni./I am comfortable communicating electronically.			
A tanulás ugyanaz az órán és otthon az interneten./Learning is the same in class and at home on the Internet.			
Úgy gondolom, hogy az órán kívüli internetes tanulás motiválóbb./I believe that learning on the Internet outside of class is more motivating.			
Úgy gondolom, hogy az interneten egy teljes tanfolyamot nehézség nélkül meg lehet adni./I believe a complete course can be given by the			

Internet without difficulty.			
Úgy érzem, hogy az oktatómmal való személyes kapcsolat szükséges a tanuláshoz./I feel that face-to-face contact with my instructor is necessary for learning to occur.			
Képes vagyok hatékonyan beosztani a tanítáasi időmet online, és könnyedén, időben elvégezni a feladatokat./I am able to manage my study time effectively online and easily complete assignments on time.			

6. Ön szerint mennyire hatásos az online oktatás? (1 - egyáltalán nem volt hatásos, 5 - nagyon hatásos volt)/How effective do you think online education is? (1 - it was not effective at all, 5 - it was very effective)

7. Ön hogyan szeretne oktatni?/How do you want to teach?

- Online
- Offline
- Hibrid/Hybrid

8. Ön, mint tanár, hogyan tapasztalta a hallgatók/diákok online órai látogatást?/How did you, as a teacher, experience students visiting classes online?

- 0% - 20%
- 21% - 40%
- 41% - 60%
- 61% - 80%
- 81% - 100%

9. Az órái hány százalékát sikerült megtartani?/What percentage of your lessons did you manage to keep?

- 0% - 20%
- 21% - 40%
- 41% - 60%
- 61% - 80%
- 81% - 100%

10. Van hozzáférése eszköz(ek)hez az online tanításhoz?/Do you have access to a device(s) for teaching online?

- Igen/Yes, I do.
- Igen van de megosztom a családdal/Yes, I have, but I have to share them with my family.
- Nincs/No, I do not.

11. Elégedett az online oktatáshoz használt technológiával és szoftverrel?/Are you satisfied with the technology and software you are using for online teaching?

- Igen/Yes
- Nem/No

12. Mennyire segített az Ön iskolája vagy egyeteme az otthoni tanításhoz szükséges forrásokat felajánlani?/How helpful your School or University has been offering you the resources to teach from home?

- Egyáltalán nem hasznos/Not at all helpful
- Kissé hasznos/Slightly helpful
- Közepesen segítőkész/Moderately helpful
- Nagyon segítőkész/Very helpful
- Rendkívűl segítőkész/Extremely helpful

13. Mennyire voltak segítőkészek a munkatársai az otthoni tanítás során?/How helpful your co-workers have been while teaching from home?

- Egyáltalán nem hasznos/Not at all helpful

- Kissé hasznos/Slightly helpful
- Közepesen segítőkész/Moderately helpful
- Nagyon segítőkész/Very helpful
- Rendkívűl segítőkész/Extremely helpful

14. Mennyire érzi megterhelőnek a távoli tanítást a COVID-19 világjárvány idején?/How stressful do you find teaching remotely during the COVID-19 pandemic?

15. Milyen volt a tapasztalata a diákok otthonról történő tanításával az iskolai tanításhoz képest?/How was your experience teaching students from home as compared to teaching at school?_____

16. Mennyire békés az otthoni környezet tanítás közben?/How peaceful is the environment at home while teaching?

17. Milyen eszközt használsz a távoktatáshoz?/What device do you use for distance learning?

- Laptop
- Asztali gép/Desktop
- Tablet
- Okostelefon/Smartphone
- Egyéb/Other:_____

18. A pandémia alatt milyen applikációkat/programokat használt az oktatásra?/What applications/programs did you use for education during the pandemic?

- skype
- webex
- zoom
- google classroom
- google meets
- teams
- discord
- egyéb/other:_____

19. A diákjai most is annyit tanulnak, mint a távoktatásra való átállás előtt?/Are your students learning as much now as they were before switching to remote learning?

20. Ön folytatná az oktatást online?/Would you continue your education online?

- Igen/Yes
- Nem/No

- Részben/Partly

21. Kérem röviden indokolja meg válaszát röviden. /Please provide a brief explanation of your answer.

22. Összességében hogyan vélekedik a távoktatásról?/How do you feel overall about distance education?

- Rossz/Poor
- Átlagon aluli/Below Average
- Átlag/Average
- Jó/Good
- Tökéletes/Excellent

23. Mennyire volt hatékony számodra a távoktatás?/How effective has remote teaching been for you?

- Egyáltalán nem hasznos/Not at all effective
- Kissé hasznos/Slightly effective
- Közepesen hasznos/Moderately effective
- Nagyon hasznos/Very effective
- Rendkívűl hasznos/Extremely effective

24. Ön élvezte az online oktatást?/Did you enjoy teaching remotely?

- Igen teljes mértékben/Yes, absolutely
- Igen, de szeretnék megváltoztatni néhány dolgot/Yes, but I would like to change a few things
- Nem, rengeteg a kihívás/No, there are quite a few challenges
- Nem egyáltalán nem/No, not at all

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