- Likewise, three counsellors stated that they fully agreed on the claim, one counsellor agrees and the other one partially agrees,

    From this we conclude that games contribute to the process of learning mathematics and that they should have a central place in teaching mathematics, because with games students are more active, socialized and interested, above all they learn through games.

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DISTANCE LEARNING

Abstract: Challenges in education are present in everyday practice and they depend on several factors that directly affect its course. For more than two years, humanity has been facing a global pandemic that has accelerated the process of online learning, as well as the process of creating digital learning content. This paper is focused on the problems that have arisen and still arise from distance teaching, in primary and secondary education, but also the advantages that this type of teaching has. In the paper examples from the teachers will be illustrated and their observations on the teaching process during the lessons in which the Macedonian language is taught will be stated. Namely, the paper will show the way of connecting the most important elements

of the educational process, the student and the teacher, which takes place through the connection provided by the internet and all its forms, social networks, platforms. The paper briefly presents the guidelines given by the institutions as well as the realization of the program through the used sources and visibility as well as through the advantages and disadvantages of distance learning. The problems presented in the paper, which are the product of distance education, gave us a direction for conclusions and some proposed solutions that should be considered.

Keywords: Distance learning, Organization, Strategies and approaches, Interactivity

Introduction

In February 2020, life turned into a global crisis caused by COVID-19. The word crisis in this context is with multiple meanings, it includes a series of meanings for crisis situations, a crisis primarily in solving the health problems caused by the pandemic: drugs, vaccine, treatment and accommodation capacities, up to crises caused by the stagnation in industry, production, trade, tourism, traffic and of course not last, but one of the most affected branches of social life – education. Education has been completely changed, namely, in the first months after the declaration of the pandemic, teaching had going on at a distance, constantly, mediated by the Internet, platforms and tools created for mutual communication. The listed possibilities for conducting distance education existed before, but now they have acquired a completely new dimension. During the second year, some of the countries used combined models, but they also largely included distance learning. The challenges that required the will and perseverance, as well as the knowledge and commitment to solve them in the education sector, were big and unknown to most of the education systems. The term distance learning was not always associated with direct video conference connections, but now it all began to have more and more such a meaning, or only that meaning. A large number of articles were published where the distance learning was discussed by teachers, educators, educators and university professors and they have shown their satisfaction with the possibilities of networking and platforms as forms of mutual communication and learning. Whether the Macedonian teachers also practice this and whether they practiced it during the past school year spent in distance teaching, we will give our opinion and conclusion in accordance with the answers from the conducted survey with teachers who teach in primary and secondary education. At the same time, the paper will make a relation between the given directions and the implemented practices for distance education.

Distance Education

The interpretations of the term distance education are not unique, but what connects them is the fact that learning includes physical distance of students and teachers during the teaching process, that it represents learning with the help of electronic media, IT devices and the Internet. Several authors give different explanations for the term, and in the professional literature we find a number of terms that are often used as synonyms, for example: distance learning, distance education, digital teaching, electronic learning (e-learning) and electronic education (e -education). Electronic education is any curriculum that uses information and communication technology for the purposes of teaching, while distance learning is a narrower term because it is mainly limited to colleges and primary and secondary schools. According to Glušac (2012), "e-learning is instructional content or learning experiences delivered or enabled by electronic technology" (p.4).

She is giving a large citation on e- learning and m- learning from Brown, T. H. (2004)[1] and says: "Electronic learning has been present and functioning in practice for more than a decade

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[1]   (The Role of m-Learning in the Future of e-Learning in Africa? In Distance Education and Technology: Issues and Practice. Hong Kong)

as learning facilitated and enhanced by the use of information and communication technology. Such devices at this technological moment include the computer with additional devices, digital television, portable and pocket computers and mobile phones. Communication enables the use of the Internet, e-mail, discussion groups, and collaborative learning systems. E-learning includes learning at a distance, through an intranet network, and can be considered a component of flexible learning. When learning takes place exclusively over the network, then it is called on-line learning. When learning is distributed by mobile devices such as mobile phones, laptops and pocket computers, then learning is called m-learning. Mobile learning (m-learning) and online learning (on-line learning) are two subsets of electronic learning. All three of these sets belong to distance learning." (Glušac, 2012:6).

Distance education can be realized in accordance with the conditions and its qualities depend on the established infrastructure, according to the law and legal documents and technical infrastructure. During the pandemic due to the absence of legal regulation of distance education/distance learning, it was organized according to documents that were prepared by the Government of RSM and dealing only with the technical aspect in the implementation of distance education. There are various examples of different approaches and organization of distance education, which, in some neighboring countries at the beginning of the pandemic in 2020, was organized through special or already existing channels of national TV services. Such an approach allowed equality in availability considering that in some countries and regions the television as a source and medium is more accessible than Internet access/network. But despite the TV lessons, there was still a need for a permanent, for each grade and class, a specially prepared lesson that would contain the basic features: appropriate length and good structure of the lesson, which would be well illustrated, that is, followed by graphic displays, video projections, photos and animations that will be in its function. Of course, interactivity appears most and above all. Online teaching cannot be imagined as a clone of classroom teaching, but it can therefore be designed conceptually differently, even multidisciplinary, if we want to set other views on teaching and other expectations from it – activating the research spirit among students that will develop and independence in work and responsibility. In the 2020/2021 academic year, distance learning took a more appropriate form, which was implemented in several educational systems through selected platforms and accurate schedules.

Distance Education in the Republic of North Macedonia

Distance education in the Republic of North Macedonia was especially specific to organize, given that there was neither a reality that practiced this kind of education, nor final documents that planned and defined it. The Strategy for Education and Action Plan for the period 2018-2025 says: "Most of the schools are inadequately equipped with teaching aids, but also with additional ICT equipment (e.g. LCD projectors, smart boards etc.). Modern teaching methods and techniques are not sufficiently applied in practice. There is no e-learning platform yet. (Section 5.2.2 Challenges, point 10, p.37). Students and teachers acquire the necessary digital skills. (Section Priorities and expected outcomes, Priorities and outcomes, p. 68).

The pandemic organization of distance learning had two periods: a) teaching that was organized in the second half of the academic year 2019/2020, from February to June 2020, and b) teaching that was organized for the academic year 2020/2021. The teaching that was organized in the second semester of the academic year 2019/2020 depended on the organization of the school and its readiness to accept the new reality and to conduct teaching both synchronously and asynchronously through platforms (which were also used by the work organizations within the "work from home" principle"), as well as using social media for explanation, consultation and exchange of materials. The organized part, the support that was provided institutionally, through

the Ministry of Education and Science and the Bureau for Education Development, had two projects: the TV-classroom project and the EDUINO e-platform. Both projects involved teachers with their own attempts to creatively prepare teaching units in forms, more or less, suitable for live broadcasts on the TV channels of the national radio and television service. This period was really confusing for the students because of the sudden transformation as well as because of the unpreparedness for systematic arrangement of teaching. Sharing presentations, written materials, or useful links on a specific topic through a medium or program that involves mutual communication is not considered distance teaching or distance learning due to the fact that it omits interactivity in the educational process. However, despite the isolated good practices of some of the teachers and in some schools, the general impression of teaching in the first months of the pandemic is: no established sequence, no order that allowed the consistency of the process with appropriate approaches.

The classes in the 2020/2021 started one month later, on October 1 and were held on Teams, one of Microsoft's tools. For this, the teachers received a short training, and they worked, mainly on their own devices. For the needs of this type of teaching, the document Guidelines for the methodology of distance teaching in primary and secondary education was prepared by the Bureau for Education Development, as well as the document Didactic guidelines for conducting distance teaching. The first-mentioned document has guidelines for lesson planning (planning is not expected, according to the document, to change, but to be adapted to the conditions), where it is emphasized that the lesson provides basic information, mentoring and guidance in the process of acquiring knowledge, skills and competencies among students (Guidelines, 2020:4). It is particularly important that the document states that the teacher should take time to familiarize himself with the relevant functionalities of the tools of the platform being used and have prepared alternatives if a tool does not work, as well as that the way of sharing the material to the students will affect the desire for learning and student involvement within the distance learning process. This suggests the conclusion that teachers are expected to prepare guidelines for students and provide appropriate learning materials, create them or provide appropriate resources that will point them as appropriate sources for learning. Teachers are recommended to share the material ahead of time in order to have time in class for discussion, examples and application, that is, for explanation and conclusions. The material for the class should be illustrative, with pictures applicatively appropriate for the content, and at the same time, the content should have good examples of case studies, setting up problem discussions, video projections, animations and gamifications. This, on the other hand, leads to the conclusion that teaching, in addition to its synchronicity, which means direct involvement, will also be realized asynchronously, which will mean sending educational games, checked videos, questions for thinking and research – with indicated links for searching, material for a certain topic/content. Asynchronous activities stimulate students' work and cause interest and engagement in the class itself. Also, homework is indicated to be creative and stimulating, to develop higher competencies, and not just to reproduce facts or examples by analogy. The three dimensions of the ideal learning environment that include greater student engagement, social interaction and appropriate use of technology should be presented: – instruction with interactivity, engagement and collaboration; social interaction for the development of the social context, – the socio-cultural and sociocognitive environment and – technology that encourages opportunities for upgrading and expanding knowledge (Guidelines, 2020 :16). The guidelines for the implementation of distance learning also include recommendations for methods and techniques, some of which are already known to teachers, such as the Barometer of Attitudes, the Spider's Web, debate, gamification, (incorporating games into the learning process), digitized classic games, as a crossword puzzle with emphasis on level learning as well as a problem solving method.

Conditions and Reactions

Teachers and the public, above all parents as a stakeholder in the teaching process, have on many occasions and using different media, shown their views regarding distance learning. Most of them related to the following questions:

- technical (pre)conditions for organizing distance teaching (technical readiness of schools and teachers and technical readiness of students with devices on which teaching can take place as well as internet powerful enough to support daily teaching);
- digital skills of teachers and students;
- program readiness for the implementation of teaching (e-programs)
- organized and permanent system support of the teaching process from the relevant and competent institutions.

Methodology

In order to obtain concrete data, attitudes and thoughts from teachers about the past school years during the time of COVID-19, a Survey was made regarding: the application of the tools from the platform, visibility and application of the use of alternative learning sources, interactive teaching, students' evaluation, self-evaluation of the past process by teachers. The survey was conducted on 45 teachers who teach Macedonian language in primary and secondary schools in RSM. The data was obtained during April 2022.

Results from the Survey for Primary Education Teachers

Preparing for Classes and Using the Tools from the Learning Platform

From the data provided in the survey, it is evident that the teachers used the tools of the platform they worked on, but that there is a good part that used them partially. The survey showed that 60.7% of the teachers declared that they used the tools from the platform, 35.7% declared that they partially used the tools, and 3.6% used only verbal interactivity. In secondary education 76.92% of teachers used the tools from the platform and 23.07% partially used the tools.

Attendance at Classes by Students

On the second question, we asked for an answer about the attendance of the students in the classes as well as their engagement. For the most part, it was answered that they were regularly present and that they fulfilled their duties, but the number of answers that the students are present and active in teaching in most of the lessons is also not small. The attendance of the students in the classes is directly dependent on the ways of interaction and the ways of presenting the material. In primary schools, 60.7% of students attended classes regularly, 35.7% mostly attended classes and did homework. 3.6% were occasionally involved in teaching. In secondary education, the results are: 76.9% of students attended classes almost every and sent their homework, 7.7% attended classes every day, 7.7% were on the classes very often, but didn't sent the homework, 7.7% also attended classes occasionally and they did what was necessary for a positive evaluation.

Visual, Audio and Other Aids to Classes

The teachers shared that they mostly created their learning materials independently, 78.55% although they also used materials from the Internet. A small part of the teachers, 17.85%, declared that they made materials independently, and only 3.6% that they used traditional forms of teaching, meaning they realized the distance lessons without the types of materials that are recommended to be used. As other visualizations used by the teachers, they added: electronic puzzles, reading materials, directions with the order of activities in the lesson, online quiz, online

questionnaire, video lesson from EDUINO, video calls from experts related to the teaching unit. In secondary education, teachers used presentations in 100%, less they were using video materials, meaning 76.9%, but they used the school textbooks in 53.84% and only 7.7% used animations.

Learning Online Resources and Other Resources

The teachers also stated that 78.5% of them mostly used the materials they created themselves, but that they also downloaded materials from the Internet, 17.5% of the teachers independently created learning materials as the main sources, while 3.6% stated that they had given classical lectures. In secondary schools 76.9% were using materials which they created by themselves but 23% made their sources.

Evaluation of Students

The teachers declared that they evaluated the students in all the listed ways: tests, short assignments, oral presentations, presentations, homework essays, projects. Or, 75% used all of that, 14.26% used oral answers and evaluated the class activity. 7.14% declared that they used presentations and homework as assessment instruments, and only 3.6% used only tests for assessment. In secondary education teacher declared that they were using everything: tests, short assignments, oral presentations, presentations, homework essays, projects in 92.30%.

Advantages of Distance Learning

As advantages teachers named:
- the possibility to use modern interactive tools through digital technology, which is not possible in classrooms every day;
- the possibility to use the resources from the Internet pages without additionally needing a projector (which is a handicap in everyday teaching because there are not enough in schools);
- the possibility of using more visibility in classes because the Internet is an excellent opportunity to implement teaching with digital tools;
- biger motivation among students due to the visualization of the contents;
- with the help of interactive presentations, students learn the material much more easily, and learning from home among students with less self-confidence has proven to be more successful, as well as regularity in bringing (handing in) homework and interest in being involved in projects;
- distance teaching can be held and scheduled in additional time in order not to lose classes during absences of students or teachers because of various reasons;
- direct access to the homework and working materials performed by the students and the possibility of having a permanent online portfolio open so the student and the teacher, can see the achievements and progress;
- quick automatic checking of the results of e-tests and quizzes.

Disadvantages of Distance Learning

- lack of internet connection and devices for monitoring teaching by both, students and teachers;
- not all students have Internet and their own properly updated computer, some of the students rely on only one smartphone that they have in the family;
- teachers do not have enough technical support, they manage with electronic platforms and tools according to their own material possibilities and abilities;
- students have lost the usual course of learning, and the teacher does not have sufficient control over what has been understood and learned;

- lack of meetings with being in the classroom that cannot be replaced even by the best presentation, animation or electronic aid, that is, nothing can replace live contact and energy exchange with the teacher;
- too much help from parents when tests were online and preparing presentations;
- bad handwriting, use of slangs in the language and internationalisms that become domesticated too quickly;
- a longer period of time for the preparation of the teacher with daily production of teaching contents.

How to Get to a Successful Realization of the Teaching

In accordance with the advantages and disadvantages, in the questionnaire, it was requested to indicate the three most important things, secondary opinion and experience, which are needed as a basis for the successful implementation of distance learning, and the following was indicated:
- good internet connection, appropriate computer equipment and training for the use of appropriate tools for both teachers and students;
- appropriate educational platform;
- motivation to learn something new in the profession.

The questions that were answered lead to the conclusion that the need for trainings in which teachers will have the opportunity to learn the tools in a wider range, as well as the need to solve the problem with the Internet, show a connection with the answers to the first questions, as well as the issue of the implementation of visualization in teaching as a key and important factor in distance learning. Adequate technological equipment of the teacher and the student (a good electronic device and good Internet connection), appropriate skills and competences of the teacher for the realization of distance teaching, a selection of already existing created digital contents in the subject of Macedonian language and literature, according to the teachers, is a basis for good teaching. At the same time, in these answers, it is requested to legally regulate the concept of distance education as well as the ways and forms in which it can be realized.

The list of at least three forms of distance learning activities, which can be used in combination with the usual form of carrying out the educational process, was given by the teachers in the following way: quiz, virtual class (video material temporarily created by the teacher or student), interactive presentation, preparation of presentations, sharing of various links with content useful for the topic, exercises and materials for repetition and determination of acquired knowledge, tests, etc. with application web tools, crosswords, virtual visits to certain institutions, memorial rooms, museums, institutes, etc. in the context of teaching, research activities, additional and additional teaching, extracurricular activities, projects.

Distance Learning in Non-Pandemic Conditions, Yes or No?

Regarding the question whether teaching should not be practiced in non-pandemic conditions and that it should not be constantly present as a combined form of teaching with classis in school, the teachers had divided answers, namely some of them believe that this type of teaching – distance teaching should not be practiced in general when we are in non-pandemic conditions. 42.87% go for each of these opinions, and even 14.26% of the teachers did not answer this question at all. In secondary school answered the same, half of the teacher were for distance learning, but the other half was against.

Possibility of Combined Teaching

The teachers who think that the teaching is good to be carried out in a combined manner stated reasons why they would like to practice distance teaching continuously, namely:

- maintenance of additional teaching and free student activities that would be scheduled in free terms when it suits all students
- students are more careful and the cooperation with their teachers is better;
- at any time and from any place, students can go back to the elaboration of the teaching content that was covered in the lessons.

Self-evaluation of Teachers

The teachers evaluated their work on the scale from 1 to 10.

57.18% of the teacher evaluated with a score of 8, 14.26% were evaluated with grade 7 and grade 9; 10.7% were rated with 10; and 3.6% rated themselves with 5. In secondary schools 23.07 % evaluated themselves with 9, but 46.15% rated themselves with 8, 15.38% evaluated with 7, but with 5 were rated 7.7%. Only 7.7% evaluated themselves with 3.

Conclusions

The conclusion is imposed as a synthesis of the analyzed results and we present it as possible solutions for some unstable points of distance teaching and as possible proposal for its qualitative upgrading: - development of curriculum sub-programs for distance learning, in accordance with the existing curricula and the available digital capacities, which will contain a designed and measured amount of content and lessons, as well as appropriate forms of teaching activities for the lessons and for homework;

- inclusion of theoretical and practical content for distance learning in the Methodology subject programs of all faculties in the country where the future teaching staff for the Macedonian language/Macedonian language and literature subject has to be created;
- organizing regular and various forms of lifelong learning for teachers, aimed at acquiring higher, but also basic knowledge and skills for the implementation of distance learning;
- permanent and inviolable informational education and re-education of future and existing teachers, emphasizing the importance and advantages of the Internet as the most widespread and easily accessible resource;
- permanent and inviolable information support for teachers and students in schools, primarily in the form of technical equipment, but also through various forms of counseling and training, as well as specific instructions and directions online or by phone;
- involvement of parents in the planning and realization of online teaching, as well as the use of their professional and professional opportunities in the direction of bringing this type of teaching closer to the students and to the parents themselves;
- subtle, unobtrusive, thoughtful and functional implementation of distance learning in regular, non-pandemic teaching, through various forms that facilitate teaching in the classroom in schools, which should not be understood only as communication via the Internet, but also through other means of communication – letters and other physical shipments by mail, telephone, radio, television, etc.;
- creation of data banks for distance education, in which the contents will be subject to constant quality control, and the authors will be recruited according to verified benefits in the respective scientific and professional fields;
- involving students in designing and facilitating distance learning, through various forms of technical and intellectual assistance, but also through ideas and proposals for specific teaching activities, etc. These and many other assumed and existing forms for improving and enriching the complete "infrastructure" of distance education do not at all represent distant and inaccessible possibilities in our educational theory and practice. On the contrary, they are present in our educational everyday life in all the forms we mentioned above. We just need

to slightly improve the way of connecting them into a functional whole and create conditions for their permanence – first in the consciousness of each individual, and then in the collective conviction.

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EFFECTS OF INNOVATIVE TANDEM HOURS ON PHYSICAL EDUCATION ON MOTOR CAPACITY OF CHILDREN IN ELEMENTARY SCHOOL LEVEL

Abstract: The main goal of the research is to determine the effects of traditional and innovative (tandem) classes on physical education of the body composition and motor skills in young school-aged children. The research was conducted in five primary schools in the city of Skopje. Ten classes were chosen at random, two from each school, with five classes in the experimental group and five in the control group. The experimental group consisted of 115 subjects, while the control group consisted of 110 subjects. The following motor tests were used to realize the goals of the research: leaning in a sitting position, dynamometer in the palm of the hand, long jump, lying-sitting for 30 seconds, running 4 x 10 m and running 20 meters with progressive increase of speed. The components of the body composition are determined by the method of bioelectrical impedance with the help of which the body weight, the percentage of fat tissue, the percentage of muscle mass and BMI are measured. The effects of the applied treatment in the experimental and control group were determined on the basis of multivariate and univariate analysis of covariance. Based on the results, it can be concluded that at the end of the experimental treatment, the subjects from the experimental group achieved better results in motor tests: dynamometer