DIGITAL TRANSFORMATION OF THE BULGARIAN EDUCATIONAL SYSTEM – A CASE STUDY

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Abstract

Among the scientific society in Bulgaria, there has long been talking of the need to change the paradigm in Bulgarian education. All those involved in education and science are aware of the need to rethink pedagogical models in the digital age and move towards digital transformation.

During the COVID-19 lockdown, Bulgarian education must reconfigure itself from face-to-face learning to Remote Learning for 1 day. Although some schools had developed electronic platforms before most of the teachers encountered difficulties in performing their official duties. The Bulgarian teachers must react ad hoc to the situation and some of them were not ready for it.

This article presents the results of the research done by the author as part of the fundamental project "Digital Competencies and Media Education in Preschool and Primary School Age," Headed by Prof. Dr. Rumyana Papancheva and funded by the Bulgarian Research Fund. This part of the project calls "The link between reading and digital literacy in students up to 11 years old".

This case study based on the answers of Bulgarian teachers. The interviews are designed using pre-prepared questions connected with teachers' experience under Lockdown (In Bulgaria the Lockdown started on 13th March). The focus is on the Primary education (I-IV grade; 7-11 years old students). The main question is: Did digital transformation happen in Bulgarian education?

This study provides research findings about digital transformation in Bulgarian education based on some cases. The author tries to analyse the digital literacy of Bulgarian students up to eleven-years-old from the point of view of their teachers.

The author describes the context of the research – frameworks, and documents about digital competence. The paper also presents some good practices for digital transformation in the Bulgarian educational system.

Keywords: Digital transformation, Bulgarian education, teachers, case study.

1 INTRODUCTION

"The digital revolution is transforming Europe" [1] claimed the analyzers of McKinsey Global Institute in the report "Digital Europe: Realizing the continent's potential" in 2016. And their forecast was: The Digital Single Market could add €375 billion–415 billion per year to annual GDP by 2022, and by 2025, digitization of companies and industries could add €2.5 trillion to European GDP" [1]. This report is connected with Industry Digitization Index and with a digital transformation at all. The crisis resulted from pandemic of COVID 19 and the lockdown in almost worldwide has had an impact on the processes of digital transformation but it is still too early to assess the effect.

The digital transformation is the effect of the digitization (the technical conversion) and digitalization of the business process. "Digital transformation is the integration of digital technology into all areas of a business, fundamentally changing how you operate and deliver value to customers. It's also a cultural change that requires organizations to continually challenge the status quo, experiment, and get comfortable with failure." [2].

One aspect of digital transformation is the concept of 'going paperless' – converting documents and other papers into digital form (digitization). Other is the use of cloud computing. There are expected new types of innovation and creativity, rather than simply enhancing and supporting traditional methods.

When it was declared the lockdown in Bulgaria (13 March 2020) the Minister of Education and Science encouraged the schools and the education at all to use new technologies and to make a digitization of the educational process. During the COVID-19 lockdown, Bulgarian education must reconfigure itself from face-to-face learning to Remote Learning for 1 day. Since 16th of March 2020

the online education has entered the homes of nearly 670,000 Bulgarian families (according to some media). Although some schools had developed electronic platforms before most of the teachers encountered difficulties in performing their official duties. The Bulgarian teachers must react ad hoc to the situation and some of them were not ready for it. And since the approach in different schools is different: in some schools it is held asynchronously learning through distance platforms, and in others – collaboration of teachers and students in real time in an online environment, for the sake of correctness, in this article the education in this period should be called 'distance learning'. In the period March-June 2020 Bulgarian schools were at this regime.

Among the scientific society in Bulgaria, there has long been talking of the need to change the paradigm in Bulgarian education. All those involved in education and science are aware of the need to rethink pedagogical models in the digital age and move towards digital transformation. The force majeure circumstances imposed by the pandemic are forcing this reform in Bulgarian education. One-two months after the state of emergency (April) and distance learning, the media and experts are extremely excited and positive about online education. The positive sides are mostly sought, the negatives are rarely reported in these publications. "In a few days, a transformation of the learning process was carried out, which in other conditions would take months. The Bulgarian school has made a big step towards the implementation of a learning process entirely in an electronic environment" [3]. "This educational evolution quickly turned into a revolution - In a day we have grown by a year in digital education" [4].

Although the crisis management in the education system during the pandemic received high marks, it is still too early to talk about a digital transformation in Bulgarian education. The purpose of this report is to present the experience of Bulgarian school education during lock down through the eyes of some teachers and through a meta-analysis of publications on the topic, focusing on opportunities for digital transformation and looking for some trends to serve as a good practices.

2 METHODOLOGY

In this article the qualitative method 'Case study' is used, which examines individual or multiple examples that are sufficiently representative and allow to trace the development of a problem, to refute a statement, to present a phenomenon, to capture a trend. Case study allows for flexibility and heuristics in field work, in the study of real cases. "This method is more relevant to changes over time in organizational and management processes, for example through the double description of the state and process of the system." [5].

This article presents the results of the research done by the author as part of the fundamental project "Digital Competencies and Media Education in Preschool and Primary School Age," Headed by Prof. Dr. Rumyana Papancheva and funded by the Bulgarian Research Fund. The focus is on the Primary education (I-IV grade; 7-11 years old students).

This case study based on the semi-structured interviews with some Bulgarian teachers about their 'online teaching experience' under Lockdown. It is also used analysis of some documents, publications and describes the results of surveys made during the pandemic period from different educational organizations.

3 RESULTS

3.1 Documents connected with digital competency and digital literacy of Bulgarian students

The key competencies are reflected in the state educational standard for general education. In the Bulgarian Law on preschool and school education the digital competence is one of the main key competences that students must acquire through mainstream schools education [6]. According to Ordinance № 5 of 30.11.2015 on general education /Prom. - SG, no. 95 of 08.12.2015, in force since 08.12.2015/ the subjects of informatics, information technologies and computer modelling is fundamental to acquisition of digital competence. The Ministry of Education and Science creates manuals for teachers, which clarify basic concepts such as digital competence, competence approach, etc. [7, 8]. Digital literacy is a term adapted to the digital competencies that children and adults need to acquire through digital technologies. Digital competence includes not only digital skills but also social and emotional skills and attitudes in a specific context [9]. Digital competence includes proper

understanding and knowledge of the nature, role and capabilities of information society technologies and their confident and critical use in everyday context – in private and public life, as well as work. It has found a place in the state educational standard for general education in computer modelling (III - IV class) and in information technology (V - X class), through the curricula are proposed educational activities for its integration into other curricula items [7].

The area of focus on competencies is defining the skills, knowledge, contributions and behavior that successful people possess. Competencies are a collection of knowledge, skills and characteristics that allow you to perform various activities [10]. The competence approach is based on interactive methods and new learning technologies that contribute to the development of independence, initiative, creativity, critical thinking in students and them orient to the specific effective result [8]. Transition from acquiring encyclopaedic knowledge to the formation of problem-solving skills in various areas of life. An important prerequisite is the application of a competency-based approach in education. The leading emphasis is on the development of learning tasks that stimulate critical thinking, teamwork, creativity, entrepreneurship, emotional intelligence, decision-making and other skills important for personal success [11].

Although the documents declare good intentions to change the teaching model, there are still no real results from these reforms in education. The classroom-lections system is still dominant.

3.2   Situation in the Bulgarian schools during the pandemic

The necessary prerequisites for the implementation of a quality distance learning process are in the first place the presence of a computer/laptop/tablet; providing access to relatively fast internet, suitable conditions for learning at home (quiet corner for learning), for young students – a parent or relative who is with the child while the learning process is taking place. And many others. According to data from the National Statistical Institute of Bulgaria, in 2019 75% of households had access to fixed and mobile broadband connection in Bulgaria [12]. Unfortunately about 11% of children did not participate effectively in e-learning during the state of emergency, and 1-2% were not covered by it at all [13].

Parents play an important role in providing their children with opportunities to access and use digital devices at home that affect their digital learning [14]. The author's survey with 637 students from the ages of 10 and 11 – the age that children complete the initial stage of primary education conducted in 2018 shows that almost all of responded children use TV-sets, smartphones, tablets (86% have smartphones; 70% – tablets; 66% – laptops) [15]. That means that there is no technical issues with distance learning.

The main problem is that the teachers should work with their own laptops/PCs if they have. The lack of technical collateralisation of most of teachers; the lack of digital skills of the teachers are big issues in this situation.

3.3   Educational platforms and materials

A National Electronic Library of Teachers has been established, in which pedagogues can share author's materials for teaching in an electronic environment. Many educational platforms provide free access to their resources during a state of emergency (for example: ucha.se, Publishing House "Arts"). DOX.bg is used as a platform to share lessons. Also: My Teams, Google Meet, ZOOM, etc. Bulgarian e-mail ABV turns out to be one of the main means of communication for students from primary schools. "Shkolo" is an established platform for students' electronic logbooks. There are also use Chromebooks and Google G Suite. The experience gained from the implementation of cloud platforms in some Bulgarian schools is a good example for digitization of educational process.

3.4   Surveys

3.4.1   National Inspectorate of Education's Survey

In connection with the survey of parents' opinion and satisfaction with the education, assessment and support for personal development of students in the electronic environment through communication and information technologies, the National Inspectorate of Education conducted a survey among 6991 parents. The survey was disseminated through the official website of the organization, through sharing in social groups on Facebook and among school principals. Parents of students from first to twelfth grade are covered. The survey covers closed and open questions ('What is your opinion about distance learning?', 'What do you think could be improved?') [16]. The majority of parents of primary

and lower secondary school students define distance learning as an alternative to traditional learning in specific conditions, but indicate that children need to communicate with teachers and classmates.

On the issue of learning difficulties, about one third of the parents of first graders describe distance learning as unsuccessful for their children [16].

3.4.2 Regional management of education – Sofia-city

Another survey was conducted by the capital's Regional Department of Education among all 273 schools in Sofia. 26% of the parents think that with this kind of education their children may obtain digital skills.

3.4.3 Survey on attitudes and how to provide of online educational services and the overall activity of its organization in Sofia University "Dimcho Debelyanov" Varna

Parents from primary, lower secondary and upper secondary school were included in the study stage. The analysis of the results of the survey is based on the information collected through responses to an online form from a total of 363 surveyed parents whose children are online educated. 25,6% of responded parents assessed the level of distance learning as excellent.

3.5 Results of own interviews with teachers

The interviews were conducted after the completion of distance learning (after June 2020) with three teachers from schools in the country. More educators were invited, but the opportunity to speak in front of a microphone and be recorded definitely turned them down. In this volatile environment, when there are no clear criteria for conducting distance learning, teachers are reluctant to share their experiences so as not to be criticized. In the situation in which the Bulgarian teachers were subjected to instability and completely unknown to them - they are very vulnerable. Constant monitoring by management on the one hand, and by parents on the other, brings additional stress.

3.5.1 Respondent A – teacher of initial stage of education

The first teacher is from the capital with 30 years professional experience. The distance learning in the second grade took place through a viber group with the children's parents and sending materials by mail. The teacher said that distance learning took her a lot of time, because in addition to preparing the study materials, selecting appropriate video content to illustrate the lessons, her afternoons were engaged with checking homework and answering each student individually.

According to the requirements of the school management, children are not allowed to spend time in front of a screen without the presence of a parent. This absolutely commits at least one adult to attend the training on a regular basis.

The teacher's observation is that the children who fell behind definitely improved their performance - probably because they were constantly under parental supervision.

The assessment of the conducted training is that this was a good option to end the school year. But both the teacher, as well as the children, prefer to study face-to-face.

3.5.2 Respondent B – teacher in secondary education

The lessons are conducted through the ZOOM platform in active dialogue with the parents - very active and engaged. The teacher enjoys exceptional cooperation. Conducts project-oriented training, looking for opportunities for innovative and playful approaches. For example, in one of the classes - the student gives a lesson. And this class uses viber. The homeworks are being sent to the viber group. Online lessons are only three times a week in ZOOM, and lessons are recorded and thus children who could not join can see the material later. The teacher uses animated dramatizations. "We celebrated all the holidays online, and we even had a festive online concert." – said the teacher.

3.5.3 Respondent C – teacher of initial stage of education

She teaches in the sixth grade in Bulgarian language and literature. Chooses to work in Google Meet and Google classroom. Checking homework is the most difficult for the teacher - the photo of the text, reading and correcting mistakes. The days were very busy.

Very stressful – from 8 am to 10 pm In the evening on a computer. Students are twice as busy – almost everything is done in writing.

"We managed to keep that part of communication allowing the students to share and be honest – to be calmer."

"It cannot be said that a digital transformation has taken place in Bulgarian education. This is too much to say that! It was hard for many of my colleagues."

4   CONCLUSIONS

4.1   Positives of distance learning during the pandemic

The teacher-parent-child relationship is improving and becoming much stronger. Teachers, students and parents started learning how to work in a team and use technology in real life.

Families are starting to spend a lot more time together.

It is provided the opportunity for project-based training that gives to students more flexibility and freedom. This stimulates an active role of the student in the learning process.

A good opportunity for children to get into technology and their future way of communication. The sense of responsibility and self-discipline in students have increased.

"The distance form is a way to learn a little more respect and delicacy." [17]

4.2   Negatives and problems of distance learning during the pandemic

Many teachers choose asynchronous learning. And while for a primary school this is more of a rule and is in line with the requirements for children not to stay in front of the screen for a long time, for the upper grades it is not justified to send them presentations by e-mail.

Children sit in front of the screen a lot.

Some families do not have enough training devices - they do not have a computer at home and / or internet connection; insufficient qualification and skills of teachers for effective use of ICT in the learning process, as well as lack of adequate electronic educational resources.

The students do not receive adapted online content in the environment that is most familiar to them. It is a need to create a response readiness model that is clearly communicated [18].

4.3   Conclusions

The potential and opportunities that technologies have for the implementation of the educational process are not yet known and used fully and effectively enough. The teachers need to adapt themselves to the digital environment by adapting the curriculum as well. "The modern educational system entering the Bulgarian schools requires a change in the traditional educational environment, change towards dialogue, meaningful communication between the participants, cooperation and general solving of the tasks in the educational process." [19].

It is necessary to integrate a single learning platform with access from teachers, students and parents.

The information and communication technologies are means by which lessons, lectures and exercises can be made more suitable for understanding for Z and Alpha generations. The distance learning it cannot completely replace traditional education but it is an option and a step to digital transformation of Bulgarian education.

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