DIGITALIZATION OF EDUCATION WITH COVID-19

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ABSTRACT
This article discusses the impact of COVID-19 on education system. Changes in education system have been interpreted this paper from both Turkey as well as the world in general. While education was shaped according to Covid-19, did it actually fulfill the necessity of the age of the 21st century? In fact, online education was an idea that many schools had designed, but it wasn't much studied on it. Thanks to COVID-19, the transition of education to online platforms could not be achieved step by step. Education underwent a mandatory change without sufficient study time. For such a radical change, it is necessary to proceed step by step, and this is a time-consuming process. There was no opportunity to see the shortcomings in the change process of education system. The world suddenly abandoned traditional education, education modernized in accordance with the age. Also, this sudden change in education system has brought many problems. With online education, it is estimated that there will be certain skill deficiencies in future students. This may affect the productivity in business life in the future. In this article, economic aspects of digitalization of education will be discussed. Well-managed issues, inadequacies and inequalities in the online education process will be emphasized in paper. As a result of different researches and surveys, online education has been addressed from different perspectives.

Keywords: COVID-19, education, online, digitalization, e-education, modernization

I. INTRODUCTION

COVID-19 was first seen in China on December 1, 2019. Since its infectious rate is higher than other viruses, it has spread uncontrollably all over the world. On March 11, 2020 as seen from the first case in Turkey was declared a pandemic by the World Health Organization. According to "Worldometer" data, the number of COVID-19 cases worldwide reached 43 million as of October 2020. With the awareness of COVID-19, social distance and a mask entered people's lives. Then all the daily work was taken care of by social distance rules. In this case, new regulations had to be introduced to education. In fact, online education was an education system considered by some countries. Adapting the classical education system to the 21st century and transitioning it to the modern education system was interpreted as a time-consuming process. However, with COVID-19, education was transferred directly to the online platform without any opportunity to progress. Education went from traditional method to modern method. Now instead of classes has left it to applications like Google Meet, Zoom, etc. According to Dr. Mishra, this is an opportunity for students to develop their curiosity because education will become a fully visual show. Thanks to visuals, students' inclination to lessons will increase and they can have different interests. New generation students are prone to technological developments and can immediately adapt to the e-education system. They may even like this situation! According to the "Digital 2019: Global Internet Usage" (2019) report; worldwide internet usage is 57%, active social media users 45% and mobile social media users 42%. These data are increasing every year. Especially the new generation is growing up in a complete technology age. According to Dr. Mishra, this online education is an education model that meets the demands of the 21st century. Who would have thought that education could keep up with the times on the occasion of COVID-19?

*Global Internet Usage 2019- Figure 1

Countries	Internet Usage	Active Social Media	Mobile Social Media
Worldwide	57%	45%	42%
Turkey	72%	63%	53%

While education underwent "compulsory" change compared to the 21st century, it brought some problems with it. How would the new model of education be adapted to everyone, especially when not all students around the world had equal opportunities? Certain pilot applications draw attention to countries' efforts to minimize this inequality. There has been a tough transition to online education across the world, and everyone is just now able to overcome this shock. It seems that the barriers to e-education will be overcome step by step over time. What is clear is that, no country has more fully adapted to distance education in the second quarter of COVID-19.

II. DISTANCE EDUCATION AROUND WORLD

The first school closure decision in the world began to be implemented in China, where the epidemic started, on February 17, 2020. The decision to close the school in China was constantly being extended, and other countries have begun to suspend education in schools. Only 1 month later, the number of countries that closed schools worldwide reached 112, and 790 thousand students, 45 percent of the total number of students, were excluded from the school. The peak in school closures was reached on April 1, 2020, and as of this date, education in schools in 193 countries around the world was completely suspended and 1 billion 597 million students were out of school. According to Unicef, this number made up 91.2 percent of individuals attending education worldwide. In the later period, with successful steps taken in combating the epidemic, schools began to reopen in different countries. As of 17 September 2020, schools are still completely closed in 53 countries around the world and more than 875 thousand students are away from schools. This number makes up about half of the total number of students.

Students, parents and teachers found themselves in a different situation. In a sense, with the start of the online education process, a digital transformation began. This sudden change in the education system brought some problems with it.

III. ONLINE EDUCATION DIFFICULTIES AND ESTIMATIONS

According to the Unesco report; thanks to distance education, education is interrupted. Students are deprived of the development and growth opportunities the school provides. With distance education, students are provided with limited education opportunities. This education model may be enough for a short time, but long-term students may be deprived of real education. According to Dr. Cem Akköse's research; there will be a 66 percent loss in literacy skills in the coming years. At the same time, a loss of 37-50 percent in math skills is predicted.

On the other hand, many financially inadequate students cannot even participate in distance education due to technology problems. According to Andreas Schleicher's research, 34% of students in Indonesia have sufficient technology for distance education. This situation causes inequality of opportunity for socio-economically inadequate students. At the same time, according to the OECD's Program in International Student Assessment (PISA) 2018 survey, an average of 9% of 15-year-old students worldwide do not have a quiet working environment.

Schools are centers of education and training for students as well as socialization centers for students. Thanks to home education, students stay away from their friends. Socialization is almost over. According to the Unesco report; as a result of this situation, it can lead to risky behaviors in the student; such as substance abuse, etc. At the same time, the rates of school dropout, young marriage and child labor may increase. Because, it can be difficult to get the child back to school thanks to the convenience of online education. Especially financially inadequate families can employ their children to work. According to the Unesco report, when schools close, early marriages increase, sexual abuse of girls and young women increases, young pregnancies become more common and child labor grows.

The nutrition of the students is also mentioned in the Unesco report. According to the report; many students had access to free or discounted meals through schools. These dishes are prepared healthy for children. Thanks to distance learning, students will be deprived of these healthy meals and their nutrition will be compromised. Serious responsibilities will be placed on families, and healthy eating can become a difficult situation, especially for students with working parents.

Distance education is a problem not only for students but also for teachers. Unesco report underlined that there was confusion among teachers due to the sudden closure of their schools. Teachers had some doubts about which platform to present, how the curriculum will work, exams and grading system. Teachers had to deal with this complex situation. At the same time, working parents are more likely to miss their jobs through distance learning. This situation causes wage loss and affects productivity in the workplace. Also, healthcare professionals with children may disrupt their work due to their childcare obligations. It may cause difficulties in the health sector, especially during the pandemic period.

*Online Education Challenges 2020- Figure 2

Online Education Challenges	didn't response	not very challenging	somewhat challenging	very challenging
Ensure the continuity of the academic of learning studer	12	15	96	207
Support students that lack skills for online study	16	18	94	202
Ensure continuity of the assesment of student learning	18	28	130	154
Provide proffesional support, advice to teachers	19	44	143	124
Ensure medical attention to teachers affected by COVID-	26	87	81	136
Ensure medical attention to students affected by COVID-	27	87	84	132
Ensure distribution of food to students	25	115	92	98

IV. ECONOMIC DIMENSIONS OF ONLINE EDUCATION

The economic impact of education on countries is significant. Students could receive education abroad by contacting certain programs, such as Erasmus or directly with universities. Education tourism, a type of tourism, will lose its former popularity thanks to COVID-19. According to the European Commission statement, 2018 Erasmus income was stated as 2.8 billion Euro. At the same time, students contribute to the economy of the country they go to by making expenses such as food, accommodation and transportation. There is no exact Erasmus data after Covid-19, but a serious decrease is expected in this regard. As a matter of fact, when students do not even need to go to school thanks to online education! According to John Ross, he stated that some schools, like the University of Technology Sydney have started pilots to mitigate the negative impact of COVID-19 on foreign students. Some of these pilots are to provide a quarantine room for the infected student and to ensure that they comply with the quarantine rules on return trips. Economically, this epidemic has a great impact on education, but universities with a majority of foreign students are trying to mitigate this effect with different practices. Of course it will take time to see results.

On the other hand, one of the important conditions for the economy of countries is the employee who has completed his/her qualifications. According to the Eğitimpedia news; as preschool children who are away from school cannot complete their literacy preparations, there will be a 66 percent loss in their literacy skills in the future. Another study predicts that students will return to school in the fall of 2020 with a loss of 63-68 percent in reading skills and 37-50 percent in math skills. This situation predicts that the working population in the future will contribute to the labor force with less skill. Thus, countries may experience the problem of inadequately skilled labor. In this case, the impact on the economy can be great.

*Predicted Lost Skill in future- Figure 3

Predicted Lost Skill	Percentage
Literacy	66%
Reading	63%, 68%
Math	37%, 50%

V. ONLINE EDUCATION IN TURKEY

Online education transition process in Turkey, operating in the same way with the other countries. The whiteboards in the classrooms were replaced by televisions (EBA-TRT) and computers (Zoom, Meet, etc.). Online education system was not implemented before the COVID-19 in Turkey and all countries face the same problem as.

*Undergraduate students access to the Internet- Figure 4
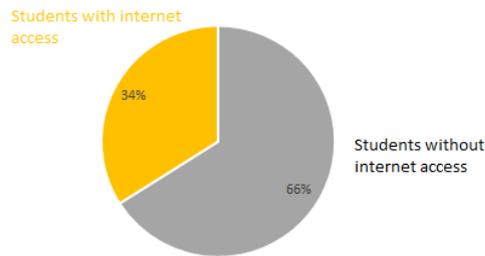
Education and economic parameters are interrelated. Well-educated students mean good employees. Good employees and qualified workforce are directly proportional to the economy of a country. Distance education has led to the prominence of socio-economic inequality. According to the report of the Organization for Economic Cooperation and Development, 30% of students do not have access to a computer in Turkey. Also, figure 4 contains the percentage of undergraduate students with internet access. 66% of students cannot access the internet, it doesn't matter if the student has a computer! The right to education and access to education is significantly affected by COVID-19. Looking at the overall picture, it can be said that the pandemic will cause above-average damage to education. A system should be designed considering all of these factors. This situation is the same in all countries, not just Turkey. Some of the steps taken in Turkey for online education;

✓ The Ministry of Education(MEB) announced that they will deliver computers to 500 thousand students.
✓ In certain libraries, students can access free both internet and computers.
✓ Ankara Municipality provided free internet access to certain villages.
✓ İstanbul, Adana, Turgutlu Municipalities have created donation campaigns for students who need computers.
✓ Higher Education Institution(YOK) defined free internet (6 GB) for students' phones under the name of "distance education support quota".
✓ And many…

Turkey is a country with a young population. According to the 2020 data of the Ministry of National Education; 18 million students attend pre-school, primary and secondary education levels. Education should be the subject of one of Turkey's most important elements. The duty of the country is to provide a good education to this young population. Steps are being taken to address online training deficiencies and time is needed for the system to settle properly.

Last, but not the least, gamification methods should be provided more to the educational ecosystem in order to concentrate the students in their topic more successfully (Akkartal, Barooti, & Akkartal, 2019).

VI. CONCLUSION

While technology is in such an important position in people's lives, digitalization in education was actually an anticipated situation. Many schools already had studies on online education. But let's face it, with COVID-19, education has suddenly changed to "mandatory." As people grapple with a pandemic like COVID-19, online education has become a problem. Because people don't like sudden change. In particular, face-to-face training was a system that had been well established for years. If the online education system had gradually entered the lives of students before COVID-19, the adaptation process would have been just as easy.

On the bright side of digital education, it has made the transition to an education system suitable for the age of the 21st century due to COVID-19. The traditional method is now shelved. It is predicted that online education will continue in schools even after COVID-19. After the pandemic is over, the prescribed training method is to continue with the appropriate courses on online platforms. Practical lessons are expected to

continue with face-to-face training. In this case, online education is the comfort of the age of technology and this system will continue to be developed and used.

The disadvantage of online education was that there was no adaptation process. With the compulsory change of education, deficiencies or problems in the system emerged. During the process, problems were tried to be solved superficially. Although it continues in some way now, it may have serious consequences in the future if the problems are not deeply addressed.

"When you can't change the direction of the wind- adjust your sails" H. Jackson Brown

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