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**ROMANIAN EDUCATIONAL SYSTEM RESPONSE  
DURING THE COVID-19 PANDEMIC**

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**Abstract:** *The Covid-19 pandemic led to an unprecedented situation, when education worldwide moved online, leading to what is called Emergency Remote Teaching. Finalized one month after the suspension of face-to-face activities in schools and universities, this paper aims to capture the actions taken in Romania for the continuity of education in online environment, the strategies adopted in schools and universities to support this process, the collaboration between the educational actors and the involvement of the whole society. How prepared was the country in terms of infrastructure, teacher training, digital competences of teachers and students? How did the parents and the society get involved? What measures were taken by the Ministry of Education and Research and the educational institutions? Does this crisis make a difference even greater than the one already existent, in terms of the access to education? What educational technologies have been used, what is the role of Open Education practices and projects, the integration of Open Educational Resources and Massive Open Online Courses, of open pedagogies? How do we compare ourselves with countries with similar infrastructure, such as Bulgaria and Moldova? How have we been able to benefit from the many international initiatives, projects and resources? What are the results of the studies already carried out on the efficiency of the actions taken? What can be done better until the return to the face-to-face activities in schools and universities, expected to be in the coming months? What are the lessons learned and how do we apply this knowledge for a better future? What current practices will have an impact on the teaching-learning activity, on the opening of education?*

**Keywords:** *Covid-19; Emergency Remote Teaching; Online Learning; Open Education; Open Educational Resources; Disruption of Education.*

## I. INTRODUCTION

While people were shutting the doors to their homes and countries were closing their borders, the virtual realm was opening up. The necessary social isolation measures mean the disruption of school-based education for several months in most countries around the world. According to UNESCO, this nationwide lockdown is impacting over 91% of the world's student population, from 191 countries; several other countries have implemented localized closures impacting millions of additional learners [24].

Just in a few days, pupils, students, teachers and all the other educational actors were forced to make a quick transition towards online learning and teaching. In fact, what we now experience is an "emergency remote teaching" (ERT), which means an adjustment for a temporary period of time, that involves alternative ways of delivering instruction, fully remote teaching solutions "that would otherwise be delivered face-to-face or as blended or hybrid courses and that will return to that format once the crisis or emergency has abated" [10].

Without an effective strategy to protect the opportunity to learn during this period, this disruption will cause severe learning losses for students. The continuity of the learning process for students, respectively support for students who lack the skills of independent learning should be ensured with priority [21].

On March 11, 2020, the Romanian Ministry of Education and Research (MER) has suspended the courses in all the schools, encouraging and supporting the continuation of the educational activities for 2.8 million pupils in online environment. Having autonomy, the same day, universities have stopped their face-to-face courses, the activity being continued as online courses on virtual learning platforms, for more than 500 thousand students. Since then, there is a high mobilization and collaboration between teachers, students, parents, ministry and the whole society in supporting this Emergency Remote Education process.

Romania was not found unprepared, having a good infrastructure, teacher training, Open Educational Resources (OER) repositories created in previous projects and an active Open Education movement [8], but with problems related to Internet connection in rural areas, the level of teachers' digital skills, also software available in schools [21].

## II. ROMANIAN EDUCATION RESPONSE

### 2.1. Schools

In the very first days of the lockdown, MER was prompt in announcing the following initiatives for supporting teachers and pupils in schools [20]:

- The Repository with digital textbooks opened and updated since 2015, with resources available for a number of disciplines and classes (<http://manuale.edu.ro>).
- The resources along with continuous and effective involvement of the project CRED ("Relevant Curriculum and Open Education for All"), in which MER is a partner, together with the Institute of Educational Sciences (<http://educred.ro>).
- Free learning platforms and applications (G Suite for Education, Office 365), and open access tutorials (<http://clasaviitorului.ro>, <https://www.eduapps.ro>).
- TeleSchool, courses broadcasted by a national TV channel in partnership with MER, mainly in order to help the pupils prepare their final exams (<http://tvrplus.ro/live/tvr-2>).

During the last two years, the project CRED provided blended training on the new curriculum, Open Education and OER for more than 18 thousand teachers, using a customized Moodle platform, with multimedia modules and webinars. The target group of teachers are from 1,400 schools, representing a quarter of the schools' total number. In the last month, daily live sessions have been organized by CRED team for many other teachers, in order to improve their skills and knowledge in using different educational platforms and applications, for online activities development and facilitation, and for OER use. The webinars are registered and uploaded with CC licenses on the

CRED's YouTube channel for future reuse. Also CRED helps schools in setting up and managing virtual platforms, in collaboration with the counties' inspectorates.

A large repository of OER and other educational resources is published on a section of the project website (<http://digital.educared.ro>); a number of 2,000 OER were created by teachers, being published subsequent to the experts' review. On many active Facebook groups, teachers and practitioners share their online teaching experiences and different resources, and learn together with their peers: CRED (<https://www.facebook.com/groups/574392349703069>), Coalition for Open Educational Resources (<https://www.facebook.com/groups/REDRomania/>), Inspiration for school (<https://www.facebook.com/groups/1229861113750975/>), and other groups of teachers (<http://facebook.com/groups/PROFESORI>, <http://www.facebook.com/groups/ComunitateaDidactic>).

Also other projects with OER or open access resources are accessed by pupils, teachers and parents:

- Open courses for pupils: <http://hubproedus.ro> (a project of the Bucharest City Hall), <http://kidibot.ro>, <http://dacobots.com> and <http://digitaliada.ro>.
- Open courses and webinars for teachers training in using OER and educational technologies: <http://iteach.ro>, <http://suntprofesor.ro>, <http://oerup.eu>, <http://superteach.ro>.
- Learning Management Systems and MOOC platforms: <http://reteauaedu.ro>, <http://unicampus.ro>, <http://digitaliada.ro>.
- Open access educational materials: <http://digitaledu.ro>, <http://didactic.ro>, <http://dascal.ro>, <http://scoaladinvaliza.ro>, <http://indreptardigital>, <http://parintiicerschimbare.ro> (a platform developed by a parents' association), <https://tinyurl.com/edupedu-resources> (collection on [edupedu.ro](http://edupedu.ro)).

Without a national online learning platform, and depending on the availability of devices and connections, also on the teachers' experience and knowledge, there is a large variety of virtual platforms and applications used for remote teaching. More than 1,500 schools have accounts on the platform [clasaviitorului.ro](http://clasaviitorului.ro), using G Suite for Education and Office 365 for the online activities (<https://tinyurl.com/map-clasaviitorului>); others use the Moodle platform, while Zoom, Google Hangouts and Microsoft Teams are used for video meetings. Pupils participate in individual and group activities, creating projects and presentations, for which they send photos and multimedia content on the online platforms. There are situations in which, in order to be connected with pupils and parents, teachers use WhatsApp or Telegram groups, and sometimes only e-mail.

There are many creative scenarios for pupils and teachers' collaboration: two teachers could work with the same group during video meetings, teachers create storytelling videos published on Facebook (<https://www.facebook.com/florentina.golea>), librarians are invited to read texts and discuss them with pupils, online lessons for wellbeing and a healthy life are delivered at "Diaconu Coresi" School in Brasov (<https://tinyurl.com/healthflowerbrasov>). Pupils from a few schools in the Orastie Mountains participated in an online lesson using drones and other technologies, under the coordination of their teachers of Geography, Biology and History (<https://www.youtube.com/watch?v=zJ8L-FzuoRQ>). A teacher of Physics working in two rural schools, facilitated an online meeting between her pupils and experts from the European Space Agency (<https://www.facebook.com/JurnalDeFizica>).

In order to continue the activities with pupils from rural areas or from families with no computers, many heartfelt teachers and volunteers make great efforts: they print materials and leave them in grocery stores to be taken by parents or even bring them to homes in disadvantaged areas, manage learning groups in which pupils share devices, or organize radio programs and activities for pupils in rural areas, and webinars for their teachers (<http://www.loveforlife.ch>).

As the school Olympiads and competitions have been canceled, at the call of the National Council of Students, the Olympic students will peer-support their colleagues in online workshop, as a kind of Olympiad of solidarity (<https://www.facebook.com/consiliulelevilor>).

Many organizations offer webinars for pupils, teachers and parents for learning how to deal with the anxiety in a healthy way and how to be more resilient during this period (<https://proactaedu.ro>, <https://scoalapenet.ro/#webinars>).

## 2.2. Universities

For most universities, the educational programs continue on their online learning platforms. Below are just a few of the initiatives undertaken by the largest institutions of higher education in the country.

*Babes-Bolyai University of Cluj* (UBB – <http://www.ubb.ro>) has implemented online courses in several languages (Romanian, Hungarian, English, German), including the fields with a strong vocational component (sports, theater, music), and fields of exact sciences and of nature (physics, chemistry, biology, environmental science) too, in order not to affect the life of students and the essential academic activities. Given that UBB is among the first universities that introduced distance learning in Romania and has experience in this field, the online academic activities run fluently.

According to Prof. Daniel David, UBB rector, the university constantly posts messages on social networks to encourage students to face the pressure of this crisis, as the online educational activity is lacking an entertainment component and may require effort, possibly leading to anxiety and fatigue [4]. Therefore, planning a new daily routine, which also includes online activities, is fundamental; those who need educational advice in this regard can call the StudHUB (<http://studhub.centre.ubbcluj.ro/ro/>). Another remarkable initiative of UBB is that from March 23, the internal procedures for online support of the bachelor, master and doctoral theses have started.

Since the closing of the amphitheaters, *University of Bucharest* (<http://unibuc.ro>) was ready to offer online courses, having the necessary infrastructure and logistics. One thing that the university does differently from other higher education institutions, is the way it metamorphosed its guard page, which became an informational “giant panel” constantly updated with news regarding the national situation, especially those where teachers and researchers are involved (such as statistical modeling for the first days of circulation of COVID-19 in Romania by a group of university researchers) [25]. It is also worth mentioning the involvement of all members of the academic community in offering emotional support to students.

“*Alexandru Ioan Cuza*” *University of Iassy* (UAIC – <http://uaic.ro>) organizes online interactive panels for the educational orientation of the high school students; these panels give information on the educational offer of the university, replacing the classic methods of direct interaction in events like Open Doors Days, UAIC Caravan, or high school workshops. These panels connect the youngsters with representatives of the faculties and specialists in career orientation, for information about the faculties, the admission process, scholarships, or extracurricular activities (<http://www.uaic.ro/cursuri-deschise>). Also university holds webinars for students, about how to improve their mental health.

*West University of Timisoara* (WUT, <http://www.uvt.ro>) is well equipped with the technology needed for online learning, thus all the courses are run online using G-Suite and Moodle. WUT created a special digital repository (<https://resurse.e-uvt.ro/>) with a variety of educational resources, including textbooks, course materials, video training. On the other hand, teachers and students use Google Shared Drive, to list the Open Textbooks and OER resources they use. Almost all of the academic community members use Meet or Zoom for online classes. The sessions are recorded and uploaded for use and reuse by students and teachers. Students also have the opportunity to participate in training sessions organized by the Center for Counselling and Career Orientation (CCCO) to acquire knowledge about online learning.

In order to engage and motivate students, the MOOC-based teaching method has been successfully used during the past years (<https://west-university-timisoara.teachable.com>). Since 2015, WUT has supported open education (<http://novamooc.uvt.ro>) and has included MOOCs in the program of complementary disciplines, which generate transversal competencies (TCD – <http://det.uvt.ro>). They are accessible to all students, from all majors. For example, “Learning English with Technology” was first created as a pilot SPOC (Small Private Online Course) and included for the first time in the TCD program during the second semester of the 2017/2018 academic year, the course being active since then [2]. Another initiative set up four years ago regards the integration of OERs and MOOCs in particular courses. The students who participate in different MOOCs, with topics related to the

curricula, receive credits for their activities in such courses [11]. For example, in the transversal discipline “Digital Storytelling”, the teacher includes parts of the course “Pixar in a Box” from Khan Academy (<https://www.khanacademy.org/partner-content/pixar/storytelling>) in some of the learning units.

In order to encourage students, WUT posts inspirational messages and photos on social media (social emotional campaigns, #uvt happywall and #stamAcasa). WUT also has developed some specific solutions for managing anxiety: a site that lists prevention methods (<http://masuridepreventie.uvt.ro>) and webinars offered by the Centre for Counselling and Career Orientation. Simultaneously, the Department of Psychology has started a weekly publication, “Pastila de psihologie” (The psychological tablet), which is distributed to university members and the general public through Facebook and the department’s blog (<https://www.psihologietm.ro/#blog>).

All the courses of *Politehnica University of Timisoara (UPT)* are run online on the Virtual Campus platform (<http://cv.upt.ro>), implemented on Moodle, and accompanied by a mobile application [26,14]. The university has developed a specific methodology for this period, since the first week of the lockdown. Most of the teachers were already trained for online/blended learning during the national DidaTec project (Training in blended-learning and new educational technologies for university academic staff) or the continuous training program offered by the eLearning Center (CeL) (<http://elearning.upt.ro>). In this period, CeL runs daily live sessions for teachers, in order to support them and to improve their skills for online courses developing and facilitation, and for OERs and MOOCs integration. The webinars are registered and uploaded with CC licenses on the CeL’s YouTube channel for future reuse. At the beginning of April, the university has organized the first online exams for undergraduate students.

UPT has also a MOOC platform (<http://unicampus.ro>) with open courses which can be used for training or integration in traditional courses. CeL runs weekly national webinars for teachers, in the series “From Campus to Online Learning” #togetheronline, the first one being organized on April 15 (<https://elearning.upt.ro/ro/noutati/de-la-educatia-in-campus-la-cea-online/>), offering open badges and certificates on Blockchain for the participants [13].

The teachers of “*Ioan Slavici*” *University of Timisoara* run the courses using the university platform (<http://islavici.ro/softstudenti>) or different free online learning applications [3], being supported and trained by the Center for Open Education and Blockchain (<http://www.islavici.ro>). Following an initiative started seven years ago, MOOCs are integrated in the courses; also the students who participate in different MOOCs, with topics related to the course curricula or their theses, receive credits for their activities in such worldwide learning communities [12].

It’s important to note that almost all medicine faculties have e-learning platforms which host online courses. “Victor Babeş” University of Medicine and Pharmacy of Timişoara ([http://www.umft.ro/tutoriale-elearning\\_817](http://www.umft.ro/tutoriale-elearning_817)) concluded an agreement with DataCamp (leading provider of distance learning services in Data Science, Statistics, Biostatistics and Artificial Intelligence methods, through Machine Learning tools), through which 200 teachers and PhD students, also 300 students, masters or residents will be able to access the training platforms, for free, for 6 months.

University of Medicine, Pharmacy, Science and Technology “George Emil Palade” in Târgu Mureş, announces the organization of online training courses (<https://pregatire-admitere.umfst.ro/>) for future candidates for admission to the Faculty of Medicine, the Faculty of Dental Medicine and the Faculty of Medicine, from April to June 2020. The courses will be conducted through the Zoom platform, starting with April 25, 2020.

During the state of emergency, higher education institutions with military profile continue their didactic activities in the online environment. A very good example is the National Defense University “Carol I” Bucharest, which conducts online education through the ILIAS e-Learning platform since 2005, when the distance learning system was implemented, by setting up the Department for Advanced Distributed Distance Education [23].

Besides the online courses facilitated by teachers for the university students, *Politehnica University of Bucharest* (PUB – <http://www.upb.ro>) offers high school students a platform with online video lessons and tests, for mathematics, physics, chemistry and entrepreneurship (<https://learningpark.upb.ro>).

Following other similar international initiatives related to removing copyright and other barriers preventing remote research, teaching and learning, the National University of Political Studies and Public Administration (<http://www.snspa.ro>) offers free access to books in the field of social sciences, published by university professors, at Comunicare.ro and Tritonic Publishing Houses (<http://elibrary.snspa.ro>).

### **2.3. Studies conducted**

For a strategy for this period, MER should have obtained concrete data on how the online learning could be carried out by schools and which are their needs. Such an evaluation was not made, but a series of organizations conducted a series of studies and surveys.

With a representative sample of over 6000 teachers, the study conducted by a group of professors and researchers from several universities, reveals the necessary support measures and can be the basis for decisions at the local level and also from MER [16]. Respondents report dysfunctions in remote teaching, regarding the following learning support activities: authentic communication and human relationships (65%), personalized support for students with special learning needs (64%), monitoring the learning rhythm (52%), new knowledge assessment (45%), explanations for understanding concepts, relationships and phenomena (45%), individual counseling (36%). 77% of the students with previous good and very good results manage to complete the curriculum according to the pre-existing plans. Things are different with students with poor results, who, in the opinion of the teachers, only manage 50% to keep up in online learning.

Another study [9] reveals the difficulties encountered by teachers in the transition to remote teaching: only 10% of the respondents have undergone training courses in the field of distance education, more frequently being mentioned the project CRED. On the evaluation scales from 0 to 10, the teachers evaluated the difficulty of the transition at 5, and at 7 their degree of skills and knowledge for this mode of teaching.

A study of the SuperTeach project (<http://superteach.ro>), with 1100 responding teachers, revealed that 88% of teachers continued to teach new lessons, but 75% had no support or guidance from the school leaders. Almost 80% appreciated that this period brought a real evolution for their digital and online teaching skills, and 57% of responders said they could teach more than half of the curriculum, even if 60% felt a high degree of stress. Teachers are concerned about the difficulties that pupils face in accessing technology and the internet, only a third of them having a high participation in online activities. Meanwhile, 78% stated that the online learning challenges and solutions during this crisis will accelerate the digitalization of education [22].

## **III. HOW OTHER COUNTRIES DEAL WITH DISTANCE LEARNING**

### **3.1. Bulgaria**

The Bulgarian Ministry of Education and Science (MES) suspended the schools' classes on March 6, recommending the universities to restrict the courses.

Since then, the online activities in schools were organized and guidelines with new teaching methods were published. Also teachers were invited to alternate lessons for new knowledge learning with better use of project-based learning opportunities. At this stage, school records do not need to include grades, but teachers have to monitor each student's engagement and activity, the statement said. Also MES opened an OER repository (<https://e-learn.mon.bg>), inviting teachers to share their resources created individually or in teams, complying with state education standards and curricula. Nearly 89% of students are ready to participate in e-learning. Each school has chosen the format specific to its infrastructure and experience - synchronous or asynchronous, via e-mail or online applications, with assignments by phone, with the help of parents. When working with a virtual classroom, one teacher can work with several classes, two with one class, or a teacher from another school can join.

MES created accounts on Microsoft Teams, for all the schools, pupils and teachers. Also the ministry has cooperated with mobile operators to ensure connectivity for villages. In the absence of mobile devices - the communication will be by phone, and mediators will provide printed materials at

home. There is also the "Telephone e-education", for questions and suggestions related to the educational process.

The autonomy of universities gives them opportunities to adopt different forms of online education, according to their specificity and context. Thus, in the Technical University of Sofia, all courses are adapted for distance knowledge delivery via virtual learning environments, such as Moodle, Microsoft Teams, or NEO LMS. The students are involved in high qualitative distance technology-based educational process, that proposes a wide variety of teaching, learning and assessment methods. One very important form for successful distance education that shows its strengths in this unusual situation is found to be personalized learning, facilitated through different technological scenarios [17].

Also, a platform for successful distance examination was implemented for conducting the first online exam at Mathematics, on March 28. Around 500 students had to solve problems during a four-hour online exam, receiving their results immediately. Other such exams are scheduled for English language, art and composition in the next weeks.

### **3.2. Moldova**

The traditional ordinary education process was suspended by the Ministry of Education, Culture and Research (MECR) for 60 days, since March 11, for all public and private education institutions: primary, secondary, technical, higher education, extra-curricular and special education institutions, during the entire emergency period.

The heads of educational institutions were entitled to organize the educational process at distance using all kind of ICT, following the MECR's realistic and pragmatic methodologies and recommendations. The didactic activities in schools, vocational and higher education institutions are organized in accordance with the existing technical facilities, digital content resources and teachers' digital skills. New training sessions for teachers and pupils are organized, who are supported with free mobile data, laptops and tables through projects with different partners (<https://mecc.gov.md>).

There does not exist a common e-learning platform, or e-strategy, used by all institutions. Even within the same institution teachers use different tools, LMS (Moodle, Google Classroom, Zoom), social media (Facebook, wikis), tools for storing and sharing digital content (Google Drive, Drop Box), and communication tools (Viber, WhatsApp, email).

During this period, more than before, the digital divide in educational context is manifested in full force and aspects, the more sensitive and important being [6]: a) digital literacy level of teachers and students; b) available digital educational resources; c) new e-pedagogies. Also, all the educational institutions are still facing a series of challenges interrelated to the named components: lack of quality digital resources; lack of experience in e-learning; confusion in e-didactics [5, 7].

At the end of April, a new platform "Online Education" is expected to be launched by Chisinau City Hall, containing a digital repository, with 4,000 video lessons for the pre-university level, created by 150 teachers. The lessons will be broadcasted by television too, in order to be accessible for more pupils.

Also many teachers collaborate, share resources and practices in online communities, such as the active Facebook group Online Platforms (<https://www.facebook.com/groups/platformeonline>).

## **IV. DISCUSSIONS**

In the same day when we are finalizing the article, on April 15, the European Commission just formulated "A European roadmap to lifting containment measures" ([https://ec.europa.eu/commission/presscorner/detail/en/ip\\_20\\_652](https://ec.europa.eu/commission/presscorner/detail/en/ip_20_652)), and Denmark is the first European country which begins to reopen schools, while in Romania, a new month of lockdown was announced and there is expected the MER's concrete methodology for online learning and exams to be published.

In this first month of lockdown, teachers have learned and applied many new things about open and blended education, tools and applications, have improved their digital skills, acquiring maybe more than in previous formal face-to-face training sessions. They have self-assessed their

training needs, participated in efficient and active communities, learning together with their peers, making important steps towards becoming Open Scholars.

Pupils and students found a favorable ground to become more creative, more active, more collaborative, their ideas of organizing the learning being taken into consideration to a greater extent by teachers, thus becoming their real partners in the teaching-learning process.

Both students and teachers should be more aware and use the large number of valuable digital resources and participate in the MOOCs about online learning, made now freely accessible worldwide by companies, publishers, libraries, universities, museums, and international and European organizations (WHO, UNESCO, OECD, Google, Europa.eu, FutureLearn, Coursera, etc.).

If the universities continued the academic activities on online platforms, having autonomy, the activities in schools were not coordinated by a clear methodology of MER. In the first week, MER made a very good start, providing the support of digital textbooks, CRED project, free virtual environments and TV programs. Then, there were hesitations, announcing only after two weeks that the current period should be used only for communication and projects for the consolidation of the lessons already taught, and not for new knowledge and lessons teaching.

Unlike the concrete measures taken in Bulgaria and Moldova, and also in many other countries [24, 18, 15], the ministry didn't come with a strategy for this period, did not evaluate the remote learning progress and needs, so as to continuously improve the infrastructure and teachers' skills, to support pupils, students and teachers with devices, in order the teaching and learning process to continue.

Because the disruption continued more than it was envisioned in March, only after a month, on April 14, MER announced that a methodology for online learning and exams will be provided [20], together with corresponding changes in the Education Law, already discussed in Senate.

Nobody knows when this crisis will end, when we'll be able to return to normal, and what the new normal means.

We believe that a real strategy for the improvement of the educational system is needed, following the experience and lessons learnt during this still ongoing crisis: online learning recognition, better infrastructure ensuring the access to quality education, a national online learning platform, MOOC and OER integration in formal learning, credits for students and teachers participation in MOOCs on different platforms, etc. [19, 1, 11].

Education has to be more centered on students, has to use more technology, in a correct, flexible and efficient way. More quality and effective training programs for teachers to be organized online or in a blended manner. Also education should become more open, should use, integrate, produce quality OERs and MOOCs, should use the blended and flipped approaches, collaboration between teachers and institutions should become more global.

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