E-INCLUSION VERSUS *DIGITAL DIVIDE* – A CHALLENGE FOR ROMANIAN EDUCATIONAL SYSTEM WITHIN THE CONTEXT OF CORONAVIRUS PANDEMIC GROWTH

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Abstract: *The educational system in Romania cannot keep pace with education and technology. Technologies are omnipresent in human networking but they are not operated similarly in the training and educational systems. Although teachers admit the importance and necessity of new technologies in the educational process, these means are barely used in the teaching-learning activities. More often than not, teachers turn to digital means in order to search and prepare information materials and not as educational resources to be exploited in the classroom. In order to benefit from a flexible and open learning system, ICT potential must be fully exploited thus improving professional training and educational systems and facilitating their adaptation to the digital world. The aim of these provisions is to improve education efficiently through promoting personalized learning which is more beneficial and more efficient. Pedagogical integration of open educational resources is a priviledged modality to create a digital inclusive educational environment, whose potential can be exploited in the interest of learners and for diminishing the negative effects of digital divide. The quick pace of growth of Coronavirus pandemic worldwide during the period December 2019 – March 2020, generated complex effects on the educational level, too. Educational factors (teachers, pupils, students, parents, non-formal education agents etc.) faced the prospect to discover another educational universe, unknown for some of them. The digital /virtual educational environment became and was legally defined as the only educational environment for the entire Romanian educational system for an indefinite period of time.*

Keywords: e-inclusion; digital divide; digital /virtual inclusive learning environment; information communication technologies (ICT); open educational resources

1. Introduction
The relation between information society and economic growth is in direct relation, in the sense that through capitalizing information, time and physical

capacity become more efficient. The necessity to invest in human capital appears as a natural result of this change. Digital technologies allow the access, processing and transmitting of information more easily and rapidly. Electronic information becomes the key-resource for digital economy.

Information and communication technologies represent a very important tool in the improvement of the social inclusion process since they give people the possibility to find a new job, provide information regarding the rights and obligations of citizens, facilitate professional development and at the same time, offer a solution for an uniform and general improvement of open resources on a national level. This process is known as *e-inclusion*. Social inclusion and fight against poverty are part of UE objectives which lead to economic growth and more employment possibilities. Consequently, formal and informal education for citizens is seen as a solution to develop digital competences at all educational levels.

Information and communication technologies (ICT) are essential in education nowadays. Most companies share the idea that ICT represent one of the main themes of educational policies when it comes about an educational system able to prepare future citizens to live adequately in the information and knowledge-based society (Ham &Cha, 2009).

2. Theoretical Background
2.1. Digitalization of Romanian education between challenge and reality
Taking into consideration the 7 pillars at the base of Digital Agenda for Europe 2020 (https://ec.europa.eu/digital-single-market/en/policies/shaping-digital-single-market), socio-economic analyses, consulting civil society and public institutions in public administration, Romania defined four major fields adapted to the current context, followed as a national vision in relation to the ambitious program of Digital Agenda, which will lead to a sustainable economic growth and a rise in competitiveness. These four domains are described as it follows: Field of Action 1 - eGoverning, Interoperability, Cyberspace Security, Cloud Computing, Open Data, Big Data and Social Media; Field of Action 2 – ICT in Education, Health, Culture and eInclusion; Field of Action 3 - eCommerce, Research, Development and Innovation in ICT; Field of Action 4– Broadband and Digital Service Infrastructure (https://www.comunicatii.gov.ro/agenda-digitala-pentru-romania-2020/).

The access to ICT equipment and Internet facilitates social inclusion, the rise in digital literacy and the improvement of digital competences.

The resolution of European parlament from 2018 as regards the education in the digital era (https://www.europarl.europa.eu/doceo/document/A-8-2018-0400_RO.html) underlines that digital skills acquisition requires a coherent, lifelong-learning approach anchored in formal, non-formal and informal education settings, with a policy response and targeted interventions appropriate to the needs of different age groups and learners. Also, the potential of digital technologies to support a shift towards more learner-centred pedagogical approaches is visible if incorporated into the learning process in a planned and purposeful way; believes that learners need to be guided towards innovative, bottom-up practices of

knowledge creation for genuine educational transformation to occur. Last but not least, the report underlines that a transformation of the educational and training systems at all levels is necessary to make full use of the opportunities offered by information and communication technologies and the media and to develop the skills and competences required to meet the demands of the society and labour market of the future; reiterates that such a transformation must continue to guarantee the right to personal fulfilment, strike the right balance between the relevant digital skills and life skills, and support individual resilience, critical thinking and innovation potential.

The resolution also states that despite the potential of digitalisation for enhancing and fostering different and personalised learning methods, the impact of digital technologies on education itself has been limited. Moreover, investments in ICT in schools and training centres have not yet resulted in the transformation of educational practices. These aspects could be improved if teachers and trainers should be at the core of the digital transformation and therefore receive adequate initial preparation and continuous training, which must include modules on age- and development-oriented teaching practices.

The National Strategy on Digital Agenda for Romania 2020 (https://www.comunicatii.gov.ro/agenda-digitala-pentru-romania-2020/), included engagements taken in alignment with the Digital Agenda for Europe, according to the economic and social reality in Romania. Within the ICT field in education, the interventions to be implemented had been organized into three categories, according to the specific of the learning process : Education by curricular activity based on ICT; Education by extracurricular activity based on ICT; Continuous professional development (Life-Long-Learning) through ICT.

In this context, Romania engaged to provide school infrastrucure to achieve digital literacy for pupils, thus influencing the quality of the future human resources indirectly. The investments were meant to be implemented in order to reduce the differences between urban and rural areas. Also, ,,The existence of an ICT network in each school will also allow a better management of educational materials and facilitate students' access to information. Additionally, the implementation of an ICT infrastructure, complemented by the installation of educational software (for teaching, testing) will encourage the ICT-assisted teaching and will impose an objective evaluation of pupils' performances" (Strategia Naționala privind Agenda Digitală pentru România, 2020, p. 70).

The second strategic line of development anticipated the development of pupils', students', and teachers' digital competencies through ICT specific training courses for teachers and pupils. The third strategic line targeted the use of ICT (OER and Web2.0) in the learning process and within the Life-Long Learning process through creating an optimal frame of using Open Educational Resources (OER) through digitizing and archiving the educational content. The inclusion of Web2.0 platforms in the teaching-learning process, stimulates as such the learners' engagement in the learning process.

According to the National Strategy on Digital Agenda for Romania , the

responsibility for the implementation of Field of Action II – ICT in Education falls upon The Ministry of National Education .

2.2. The phenomena of *e-inclusion and digital divide* in the educational system in the context of coronavirus pandemic worldwide

Social inclusion through *e-inclusion* and *digital literacy* represents an issue of national interest. Consideration is being given to the exclusion of some social categories and some geographical areas /zones from the benefits of new technologies, in other words the attenuation of the phenomenon of *digital divide* becomes a critical aspect in the evolution of the educational systems in the context of the quick pace of growth of Coronavirus pandemic.

E-inclusion refers to the set of provisions taken to develop an inclusive informational society, facilitating the access of everybody to digital resources and digital environment regardless social or personal background. (Gherguț, 2013) The phenomenon is associated to respecting fundamental principles of promoting diversity, respect, equal chances and right to education. In a more concrete aproach, e-inclusion refers to learning resources for education on internet.

Digital divide refers to socio-economic differences in using technologies, as an analysis made by OECD underlined the complexity of the phenomenon: „the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technologies (ICTs) and to their use of the Internet for awide variety of activities". (OECD, 2001, p. 5) The causes of digital divide are diverse: gender differences show that women are more disadvantaged than men in using technologies; the language gap as many pages and materials accessible on the internet in diverse forms use English more than any other language; socio-economic and cultural discrepancies, differences in educational mentality etc. (Petrică, 2015, pp. 3-4)

Digital divide phenomenon is highly present in the Romanian educational system although diverse national projects of technological investments in the system tried to reduce it. Contrary to such projects, numerous difficulties can be recorded about the efficiency of open educational resources implementation: the access of pupils from rural areas to technology (as technological support) through computers laptops, tablets, mobile phones, at school and at home; pupils and teachers' level of digital competences.

International media articles and reports underline the large gap between social and digital divide within school population, mainly concerning the difficulties to access digital resources in rural areas. (https://www.nytimes.com/2020/03/17/technology/china-schools-coronavirus.html) According to a national study, in Romania, the proportion "pupils /computer" was of 13 pupils to a computer, as compared to the European average rate of 5 pupils per computer (http://www.elearning.ro/accesul-la-internet-pentru-educatie-ce-inseamna-internet-de-mare-viteza-in-scoli).

2. Design of Research
2.1. The premises of the research
According to the UNESCO report published on the 5-th of March 2020, the number of children who miss school due to pandemic crise worldwide is unprecedented. The same report stresses the necessity of implementing programs and platforms for distance learning in order to support the educational system. (https://www.cnbc.com/2020/03/05/almost-300-million-kids-missing-school-because-of-the-coronavirus-unesco-says.html?&qsearchterm=coronavirus).

On the other hand, the pandemic growth emphasizes the digital divide through a high need for digital tools and open educational resources both at institutional level (open educational resources available in pre-university and higher education units), family level (on-line resources which can be available in the family), and also on personal level (pupils/students' willingness for on-line learning – motivational resources, individual learning techniques).

The regulation of on-line education during the state of an emergency period declared in many countries, ensures the legislative framework for continuing education in the on-line environment exclusively (*e-educational environment*). This fact underlines the necessity of developing an *inclusive e-educational environment*, in order to diminish the risk of school failure and to reduce school abandonment, a phenomenon hard to control even under normal circumstances.

2.2. The Purpose of Research
The implication of digital resources in the educational process suitable for the needs and necessities of the learners group stays a permanent challenge.
The aim of this study is to identify the technological coordinates of the virtual educational system developed in the Romanian education background in the period of coronavirus pandemic. We consider that the analysis of the technological support of learning constitutes the assumption of advancing an inclusive educational environment during the period in which educational activities are developed in the virtual space exclusively.

To that effect, we shall analyze the formal and informal offers of platforms, applications and tools which can be used in the virtual educational environment.

2.3. The Methodology of Research
In order to achieve the proposed goal, we completed a documentation type study, through the research of electronic resources offering information about the organization of on-line educational environment. The reseach implied 2 modalities of achievement:
- documentation through the analysis of open resources (Ministry of National Education site, universities site, pre-university units site)
- documentation through the analysis of informational resources (social networking, media)

2.4. The Analysis and Interpretation of Results

The Ministry of Education and Research launched the platform *Digital* (digital.educred.ro), which centralizes many types of digital resources and useful information in educational activities: digital tools, collaborative learning platforms, long-distance collaboration and communication tools, learning communities.

We identify recommandations of the Ministry for *platforms for class management, for learning resources and academic success*, such as: Google Classroom (for uploading materials, posting announcements), Microsoft Teams (for uploading materials and collaborative activities), Edmodo (communication and collaboration platform which allow parents to participate), Easyclass (materials, tests, diverse tasks, the products of pupils' activities can be scored and receive a fedback), Moodle (for higher education mainly). The list of recommandations also includes *platforms and applications* such as: Școala pe net, Digitaliada, iTeach, ReteauaEDU.ro, LearningPark, Livresq, MyKoolio, Kinderpedia.

Equally, the platform Digital recommends a list of *on-line tools for learning platforms:* Padlet (collaborative type multimedia virtual boards), Edpuzzle (creation or reuse of video content), Microsoft Powerpoint (online collaborative visual supports), Google slides (online collaborative visual supports), Bubbl.us (online collaborative conceptual maps), Voki (personalized virtual avatars), Miro (interactive board), Openboard (open source platform for interactive board, instituonal use).

The recommandation also implies the following *on-line communication tools*: Google Meet (video-conference-call platform), Microsoft Teams /Skype (digital hub which allows conversations, content, tasks and applications), Zoom (video conference with real time messaging and content sharing), Webex (video conferences, online meetings, screen share and webinars), YouTube (online video content transmission).

Digital educational resources (digital manuals) are available for the pre-university level.

On a territory level, school inspectorates in collaboration with local communities promote their own OER (open educational resources). The offers of school inspectorates include numerous educational WEBsites (links), the most frequent being: ICT educational sites, educational sites in English, sites with on-line lessons for different themes /disciplines (mathematics, Romanian language and literature, foreign languages etc.). `

The educational units have been determined to take decisions and to implement different modalities of organizing educational activities in the on-line space. Some situations show clear decisions on the modalities of educational interaction. Universities and pre-university units readjust the manner of developing educational activities by using institutional accounts. However, in most situations, teachers and /or pupils /students used a wide range of virtual tools to intercept the educational interaction. Informational communication resources such as Whatsapp, Facebook Messenger, e-mail have become from simple informal communication tools, informational means of

communicating educational contents (learning materials - doc., pdf., PPT, electronic archives etc.) and video /audio /written interaction means between teacher and pupil. The platforms in the category *free* resource - Google Meet, Zoom are the most used virtual environments in the educational interaction, especially in the situation when there are no institutional clear or /and restrictive regulations. Also, Drive service becomes a virtual space used for storing and mobility of information especially, among members of a community (class, work group, etc.)

The actions launched on a central level in order to provide a list of available educational resources in the on-line environment for pupils is supplemented through some visible informal resources in the public space. First, we can identify the TV national and territorial broadcasts, in collaboration with The Ministry of National Education and school inspectorates.

The offers in the informal environment focus on developing some free time activities context, by providing a complex volume of scientific materials, interactive games in many domains and develement fields:

-Virtual library provided freely for users by Romanian printing houses (Humanitas, Institutul Cultural Român)

-Educational films and series offered freely by Netflix and YouTube channel;

-NASA offers a website with puzzles, colouring books, labyrinths, educational games (https://www.nasa.gov/kidsclub/index.html).

On-line offers for spending leisure time at home include: virtual tours and panoramic images in museums from Romania (http://www.cimec.ro/muzee/muzee-cu-tur-virtual.html); creative and entertaining games for children through the site creatissimo (http://www.creatissimo.ro/), geographical interactive games (https://geogra.ro/joc/ro/index.php).

3. Conclusions and discussion

The modalities of organizing the educational interaction are regional (in case of CSI), institutional (in case of some universities) or desultory (for the most part). The provisions taken on national level refer only to the ensurance of the learning environment for the pupils who will have to go in for the national exams (the exam of National Evaluation and Baccalaureate) by providing educational broadcasts through the national network TV system (Teleşcoala program), a model taken over by some school inspectorates at the level of pre-university education.

In the final analysis of this study, the list of on-line resources and tools cannot be considered a sufficient statistics. On the contrary, the internet abounds in open suggestions of educational resources which can be accessed as educational environments. It is obvious that, the evolution of pandemic on a nation and global level will favour the exploitation of the digital educational environment for an undeterminable period of time.

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