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Teaching Education Process and Citizenship in the Contemporary Digital Environment. Pre and Post-Covid Perspectives

Abstract

The rapidly changing reality, which has been influenced by the development of technology and the industrial revolution since the nineteenth century, has largely weakened the teaching profession and the form and type of professional certification. This weakening also devaluates the idea of citizenship, which is largely conveyed during the education process. Contemporary education (4.0) is focused on practical education, where the space for shaping attitudes and creating behaviour patterns is marginalised. The relationship between education and industry related to socialisation and culture-forming processes is part of the development of individuals in societies and part of a broader formal development plan for different types of state and national organisations. The processes of systemic changes in education do not always keep up with the changing social, political and economic situation. The authors of this article indicate how the teacher education process looked in the past, through a sociohistorical approach based on the understanding of what teachers think about the meaning of digital learning in everyday school life and work. In order to do this, it was necessary to undertake an investigation from the perspective of the teachers themselves. This was helpful for the analysis of the semantic and ideological imperfection of education 4.0, based on the role of teaching staff in digital citizenship education.

Keywords

Education 4.0, digital citizenship education, the role of teachers, SARS-COV2, digital education.

1. Introduction

The digital revolution has changed the education system that must meet the needs of a globalised information society. The goal of education is no longer simply the transmission of knowledge that is not possible to acquire, but the development of skills for its management and application, when and where needed. The students have changed radically and, as Marc Prensky underlines, 'Today's students are no longer the people our educational system was designed to teach.' There is a complete 'discontinuity' with the educational past because students think and use information fundamentally differently from their predecessors. They are 'digital natives'.

In this direction, the role of the modern teacher changes. He/she is called to guide students in new ways of discovering knowledge and to respond to this new pedagogical and social role, preparing the future citizens. This requires familiarity with the use of new technologies, which is considered a necessity in education in general.[1]

Digital technologies are a tool for the teacher that can be used to improve students' critical thinking through learning processes that require exploration, discovery, understanding and classification of their thinking, in order that they are able to solve problems following a reasoned order.[2] Teachers with a view to the future believe that modern technologies are the lever for the transition to digital reality. The adaptation of education to new data is based on the readiness and adequacy of teachers and the modernisation of their role. We must

[1] Council of Europe, *Digital Citizenship Education*, (2004) Strasbourg, https://rm.coe.int/16809382f9 (6.11.2022).

[2] D. Varier, E.K Dumke, L.M. Abrams, S.B. Conklin, J.S. Barnes, N.R. Hoover, *Potential of one-to-one technologies in the classroom: teachers and students weig*, "Educational technology research and development" (2017), No. 4, pp. 967–992.

underline that the modern educational reality requires vigilance and readiness, continuous training, and information on new educational practises.

We must also emphasise that a number of researchers have shown that, although digital technology has penetrated schools, it has not been applied in educational practice.[3] Teachers do not use technology in their work because they lack training; they do not feel familiar enough with digital technology to teach young people, even though students themselves are already familiar and 'technologically advanced', more so than their teachers.[4]

The situation changed when education shifted from contact-based to remote. The testing ground was the adaptation to the lockdown situation at the time of the SARS-COV2 pandemic, which revolutionarily forced the creation of alternative, to classroom education, methods and forms of education. The readiness to re-format the concept of education taking place in physical classrooms into virtual classrooms (rooms) required not only ICT solutions (e.g. specialized platforms for distance learning), but above all a quantum leap in digital competence among both teachers and students.

The COVID-19 pandemic has shown that the digitalization of education in today's world is essential and that digital tools, for example, enabling distance learning, are the backbone of teaching and educational functioning in the event of a crisis. This means that lack of access to networks and connectivity results in limited access to education. Therefore, the United Nations, aiming to achieve the Sustainable Development Goals (SDGs) and ensure universal education for all, stresses the importance of connectivity as one of the conditions against exclusion.[5]

Learning from the lessons of the SARS-COV2 pandemic, action has also been taken to increase the digitalization of education services through the European Education Area revamp, which is expected to become a reality by 2025,

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[3] C. Bigum, C. Lankshear, *Digital Literacies and Technologies in Education*, Queensland 1997, Commonwealth Department of Employment, Education, Training and Youth Affairs; L. Cuban, *Oversold and Underused: computers in the classroom*, Cambridge 2000, Harvard University Press.

[4] D. Leu, M. Hillinger, P. Loseby, *Grounding the Design of New Technologies for Literacy and Learning in Teachers' Instructional Needs*, in: D Reinking, M. McKenna, L. Labbo, R. Keiffer, (Eds), *Handbook of Literacy and Technology: Transformations in a post typographic world*, Mahwah 1998, Lawrence Erlbaum Associates, pp. 203–221.

[5] United Nations, *Education during COVID-19 and beyond*, New York 2020, https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/08/sg_policy_brief_covid-19_and_education_august_2020.pdf

The European Commission has proposed new initiatives, increased investment and closer cooperation between member states. The Commission adopted the Digital Education Action Plan and the Blueprint for a High-Performance Digital Education Ecosystem, with a focus on expanding digital competences for digital transformation. The Digital Education Action Plan (2021–2027) proposes a number of initiatives for high quality, inclusive and accessible digital education in Europe. It is a call to action for closer cooperation between member states at European level, as well as with and between stakeholders, so that education and training systems are truly adapted to the digital age. The coronavirus crisis has brought distance learning to the forefront of educational practices. This has highlighted the urgent need to improve digital education as a key strategic objective for quality teaching and learning in the digital age. As we emerge from the pandemic threat phase, we need a strategic and long-term approach to digital education and training. The Action Plan has two long-term strategic priorities: i) supporting the development of a high-performance digital education ecosystem and ii) enhancing digital competences for digital transformation. To enhance cooperation and exchange in the field of digital education at EU level, the Commission will establish a European Centre for Digital Education to foster cooperation and synergies between policy areas relevant to digital education, create a network of national advisory services and strengthen dialogue between public and private sector stakeholders.[6]

2. Education 1.0 vs. education 4.0

The term education 4.0 is linked to the term industry 4.0. Industry 4.0 is based on making use of the latest technological achievements, such as network solutions, artificial intelligence and the automation of cyber-physical manufacturing module. In the subject literature, the theoreticians say that this stage was preceded by industry 3.0, i.e. industry based on miniaturization and computerization of production, which had been preceded by the period of "electricity age" (industry 2.0), characterized mainly by the use of electricity in mass production. Researchers define industry 1.0 as manufacturing processes based on a steam

[6] European Commission, *Creating a European education area by 2025 and adapting education and training to the digital age,* Brussels 2020.

engine. By transferring the industrial typology onto education, we suggest the following types of periodization, which extend the time scope.[7]

In the first approach, the level of formalization can be regarded as the determining factor. In this elaboration, education 1.0 embraces the period of the ancient times in which formal requirements for school founders did not exist. Education 2.0 lasted until the industrial revolution during which the standards of oligopoly (state-Church) in the ownership structures did not exist. Education 3.0 permitted a private sector, under the condition that it would not dominate the market. Education 4.0 means a total commercialization of the educational system on the assumption that a controlling institution would be established on the level of the state, local authorities, or membership organizations of the owners of scientific institutions.[8]

In the second approach, the distinguishing feature is the level of enrolment rate in the respective eras. In Education 1.0, less than 20% of population had a certificate confirming the graduation from an educational unit and in education 2.0 – from 21% to 50% (World Economic Forum, 2018). In education 3.0, the level of certification reached 90%. Education 4.0 is the ideal type, with 100% of population having the certification on the level of secondary school or university. This assumption also requires the acceptance of the condition that participation in education at secondary school or university level is not based upon motivation of obtaining the certificate confirming the years of education, but upon the willingness to gain knowledge, to improve skills and competences.

The most inclusive conceptual model of the division of education into 4 stages is the one associated with the educational objectives. In the first period (1.0) the main emphasis was put on knowledge transfer; in education 2.0, knowledge was as important as practical skills; education 3.0 included the attempt to create balance between knowledge, abilities and competences and education; 4.0 concentrates on the knowledge transfer and acquiring specialized skills necessary in the narrow segments of the labour market with the social competences necessary to function in a narrow professional group. Students and teachers should be prepared to become productive contributors of future economies and responsible and active citizens in future societies. In this new context four

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[7] K. Schwab, *The Global Competitiveness Report 2018,* Geneve 2018, https://www3.weforum.org/docs/GCR2018/05FullReport/TheGlobalCompetitivenessReport2018.pdf (3.11.2022).

[8] J. Kinal, *From Education 1.0 to Education 4.0: teacher training models from the 19th Century to the present da*y, "History of Education and Children's Literature" (2021) XVI, 2.

skills are considered as necessary for students: 1) Global citizenship; 2) Innovation and creativity; 3) Technology; and 4) Interpersonal skills.[9] The role of the teacher and instructor becomes more demanding and needs a good balance of theoretical and practical knowledge in order to provide a solid foundation for their teaching.

3. The social function of the teacher in the past and his/her role

With the socio-economic changes taking place in each society, the role of the teacher in the social system has also changed. The initial role of a teacher is a universal one, which is to act as a guide and mentor who passes on specific skills to his/her students. Depending upon the language system the following terms were used to call a person engaged in educational processes: "master", "mentor", "tutor". Importantly, in the initial period of the functioning of this profession, there were no formal frames of professional certification and having this social function resulted in an adequate social status given to an individual by a social group.[10]

The constitutive features which allowed an individual to do that job were: rhetorical skills, certain personality traits and the requirement of a "ethical" life foundation compliant with certain ceremonials and social values. Another element which gave an individual the right to be a teacher was the necessity of adequate professional practice. Usually, it was students who had acquired knowledge from their own teachers (philosophers or politicians) who became teachers. In this perspective, the teacher was the center of the transmission of knowledge acquired over many generations, constituting an individual source of knowledge.[11] An example of the role of a teacher in ancient times, was the initiation of adolescents by older primitive tribes into the mysteries and customs of the groups to which these youth belonged or aspired. Throughout history, this process has changed and the social role of the teacher has become professionalized.

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[9] World Economic Forum, *Catalysing Education 4.0 Investing in the Future of Learning for a Human-Centric Recovery*, Geneve 2020.

[10] D. Karakatsani, *Educational Theory and Didactical Praxis in Greece during the after-war period* (In Greek), Athens 2012, Epikentro.

[11] W. Wojtynski, *Training teachers in the first quarter of the century of People's Poland*, "Przegląd Historyczno-Oświatowy" (1969), No 3, p. 302.

In literature on the subject, one can also find statements that the transformation of the teacher's function is visible in the process of specialization. In the course of the systemic development of education, a separation was distinguished between specialist teachers and general education teachers preparing young students to perform a social function. The teacher always connected with the local community, and his authority played an important role in the community in which the school operated: it influenced not only the teaching youth, but also the shape of the out-of-school environment. In the last decades of the twentieth century, the extracurricular role of the teacher was severely limited. The contemporary teacher is mainly focused on didactic and educational work at school.[12]

The digital gap that exists between teachers and students is an important factor that affects teachers' attitudes and perceptions. Teachers who have been taught and trained using the traditional blackboard and chalk, supervisory methods limited to the globe and maps, are now called upon to offer their services using advanced digital media. The generation of teachers born before 1980 belong to the generation of 'digital immigrants' despite participating in the information society using modern media (mobile phones, tablets, computers, etc.). They try to fill this gap and integrate into the digital world. The digital gap with students whose digital skills are far better from their own skills makes them wary of digital technologies and their integration. In this case, the teachers find it difficult to communicate, since the students now speak another language, different from their own: digital. In addition, personal attitudes about whether and to what extent modern technology improves the efficiency of the educational process are a basic condition for their use in the classroom. Although teachers use digital technology for personal needs as a necessity, the same does not happen in the educational process.[13]

Familiarity with technology and digital literacy are a two-way process for both teachers and learners nowadays: new technologies must be integrated effectively and functionally into schools, meeting the needs of both.[14] The teacher

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[12] M. Banda, *Sociological Perspective of the Role of the Teacher in the 21st Century,* "International Journal of Humanities Social Sciences and Education" (2016), Volume 3, Issue 1, pp. 162–175.

[13] M. Banda, *Sociological Perspective of the Role of the Teacher in the 21st Century*, "International Journal of Humanities Social Sciences and Education" (2016), Volume 3, Issue 1, pp. 162–175.

[14] M. Ribble, R. Baily, T. Ross, *Digital Citizenship, Addressing Appropriate Technology Behavior* – ISTE, Learning & Leading with Technology, Washington 2004.

emerges as the essential factor that determines the successful and effective integration of digital media in the educational process and practice. Understanding the new constantly changing technological requirements and challenges, the teacher must constantly experiment with new technologies, innovate, promote collaborative and exploratory learning, plan learning activities and learning scenarios, test, reflect, and modify/redesign his/her practice appropriately in the direction of active action research. At the same time, he/she evolves from a "consumer" to a "creator" of digital content and a member of community. In addition to codes of ethics and responsible use of ICT, the need to recognize the full impact on the digital health and wellness of users becomes imperative. The need of both learners and teachers to strengthen the 'resistance' of the former to the lures of (admittedly) attractive virtual reality, is a challenge. The modern school must respond consistently and seriously, strengthening and improving all the actions that take place within the school community, in order to meet the needs of both.[15]

The majority of teachers recognize the necessity for continuous training and digital literacy in order to meet modern requirements, enriching their knowledge and revising (as required) ways and teaching practices. They believe that re-training will facilitate them and improve their efficiency, as they should be able to plan and implement appropriate activities in order to motivate students to actively participate in new learning environments. Those who possess the necessary skills have the ease to respond to the new teaching practices for the utilization of digital education. They are more confident and also positively predisposed. The level of re-training also shapes the degree of the use of new technologies.

4. Digital Citizenship and Education

The concept of citizenship is understood as a status granted by the State to independent individuals, who act rationally to achieve their personal aspirations with the state ensuring equal rights before the law.[16] It is sometimes described as an identity associated with the sense of 'belonging' and the web of relationships that develop between members of a community, the primary concern being the

[15] M. Banda, *Sociological Perspective of the Role of the Teacher in the 21st Century*, "International Journal of Humanities Social Sciences and Education" (2016), Volume 3, Issue 1, pp. 162–175.

[16] E. Jones, J. Gaventa, *Concepts of Citizenship: A Review, IDS Development Bibliography 19*, Brighton 2002, IDS.

collective rather than the individual interest.[17] In an attempt to reconcile the first two views, a third perspective requires that citizenship is linked to a practice, which focuses on the common public culture shaped by the individuals' rights. As an identity, it emerges stronger than the individual.[18] Either as a situation, or as an identity, or as a practice, citizenship is closely linked to a web of rights and obligations, especially as it frames the figure of the modern citizen in an extremely complex, multicultural society.

In the process of analyzing data on digital education, it is valuable to pay attention to the PISA (Program for International Student Assessment) research from 2018 regarding the assessment of the degree of readiness of educational institutions to on-line education. More than half of the surveyed directors of educational units around the world, stated that there is no online learning platform for students aged 15 (a segment that is the subject of PISA cyclical surveys). In other countries, mainly developed countries, the level of access to digital learning varied between 35 and 70 percent. In France and Portugal, 35 percent of students were excluded from digital learning, and 34 percent in Japan and Germany. The Nordic countries, Singapore, Qatar and some Chinese provinces were best prepared for this, and to a lesser extent Australia, New Zealand, Thailand and the USA.[19]

The modern version of the discourse on citizenship will also include terms that describe the multiple modern civic identities and forms of government.[20] These terms are associated with the existence of a post-national model, since the model of a sovereign nation-state no longer constitutes a satisfactory framework and functional enclosure of the term of the political status of the subject. As the modern social structure constitutes a new technological paradigm[21], a new

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[17] V. Jochun, B. Pratten, K. Wilding, *Civil renewal and active citizenship, A Guide to the Debate*, NVCO (2005), http://socialwelfare.bl.uk/subject-areas/government-issues/socialpolicy/ncvo/138025civil_renewal_active_citizenship.pdf (10.11.2021).

[18] E. Jones, J. Gaventa, *Concepts of Citizenship: A Review, IDS Development Bibliography 19*, Brighton 2002, IDS.

[19] PISA, *PISA 2018 Results. Effective Policies, Successful Schools,* 2018 http://www.oecd.org/education/pisa-2018-results-volume-v-ca768d40-en.htm (10.10.2021).

[20] R. Bellamy, D. Castiglione, *Legitimizing the Euro- `polity' and its `Regime': The Normative Turn in EU*, "European Journal of Political Theory" (2003), Vol. 2, No. 7, pp. 7–34.

[21] M. Castells, P. Himanen, *The Information Society and the Welfare State: The Finnish Model*, Oxford 2002.

knowledge economy, three complementary axes emerge and spring up as a 'rhizome'[22], composing flexible nodes[23] which transcend spatio-temporal anchorages and coexist in 'flow spaces.'[24] Society is based on information, global governance and networking. Therefore, citizenship acquires a global content, taking a political, economic, social and cultural dimension, where the access and the sharing of information is done to and from a complex network of social partners.[25]

We must also underline that the notion of citizenship expands and changes nowadays with citizen participation in the new technology era, as it can be observed in 'spaces' with blurred boundaries and sometimes in asynchronous spatio-temporal entities. That is why we speak of a new kind of citizenship which is strongly connected to digital era and its requirements. With the growing use of digital technologies in everyday life, we faced an important issue, how better to prepare citizens to appropriately make use of these technologies. As a result, a new concept has entered "digital citizenship". A digital citizen is a person who can criticize online information, can communicate via digital technologies, can produce and consume in digital environment and complies with the ethical rules while conducting these behaviors and is aware of their rights and responsibilities. The ability to participate in society online'[26] is a simple acceptance of the definition of digital citizenship, with particular emphasis on internet use and less on other digital, interactive media.[27] Hobbs and Jensen define digital citizenship as 'the skills and knowledge that are necessary for an individual to be able to function effectively in an increasingly demanding social media environment.[28]

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[22] G. Deluze, F. Guattari, *A Thousand Plateaus*, Minneapolis 1987, University of Minnesota Press.

[23] M. Castells, P. Himanen, *The Information Society and the Welfare State: The Finnish Model*, Oxford 2002.

[24] M. Castells, P. Himanen, *The Information Society and the Welfare State: The Finnish Model*, Oxford 2002, p. 14.

[25] UNESCO, *Addressing global citizenship education in adult learning and education: summary report*, Hamburg 2002.

[26] K. Mossberger, C. J. Tolbert, R. S. McNeal, *Digital Citizenship the Internet, Society, and Participation*, Boston 2007, MIT Press Books.

[27] E. Staksrud, S. Livingstone, L. Haddon, K. Ólafsson, *What Do We Know About Children's Use of Online Technologies? A Report on Data Availability and Research Gaps in Europe* (2nd edition), London 2009, London School of Economics and Political Science.

[28] R. Hobbs, A. Jensen, *The Past, Present, and Future of Media Literacy Education, The National Association for Media Literacy*, "Education's Journal of Media Literacy Education" (2009), no. 1, pp. 1–11.

In this light, the separation of the public from the private sphere remains invisible, highlighting new ethical challenges and at the same time a (different) network of opportunities in the whole population that is in direct and daily contact with the new technology'. Simsek and Simsek link digital citizenship with new media literacies in a new democratic context, where the latter provide opportunities for greater, more active and insightful participation and response to needs of modern social structures.[29]

Abdulrahman Al-Zahrani, in his work, indicates several priority axes of activities related to education in Oblast, which is related to the mental transformation of postmodern societies. Among the most important elements of civic education, Al-Zahrani includes activities aimed at building a sense of respect for oneself and others, education on the risks associated with the process of technologization of societies, and the development of defensive attitudes against new phenomena that threaten the sense of social bond and community.[30]

In literature on the subject, one can also find applications for increasing the emphasis in training and courses on education regarding apparent anonymity in the Internet, net etiquette and securing data and copyrights.

The latest literature on citizenship education and technology highlights the main challenges:

1. absence of a common definition of digital citizenship across countries for effective comparisons;
2. difficulty in identifying the policy framework for co-ordination and implementation as well as the capacity-building schemes for digital citizenship, in order to find appropriate actors and networks;
3. lack of a common evaluation template for sense-making practices in order to establish their scope, significance and effectiveness;
4. lack of a network of contact points or institutions specializing in digital citizenship for effective reporting in the field and reliable data gathering and analysis.[31]

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[29] E. Simsek, A. Simsek, *New Literacies for Digital Citizenship*, "Contemporary Educational Technology" (2014), Vol. 4, No. 2, pp. 126–137.

[30] A. Al-Zahrani, *Toward Digital Citizenship: Examining Factors Affecting Participation and Involvement in the Internet Society among Higher Education Students*, "International Education Studies" (2015), Vol. 8, No. 12; 2015, pp. 203–217.

[31] D. Frau-Meigs, B. O'Neill, A. Soriani, V. Tomé, *Digital Citizenship Education: overview and new perspectives,* Strasburg 2019.

Digital citizenship is a complex and multidimensional concept which acquires special content as it addresses, on the one hand, a heterogeneous (in every aspect) audience; on the other hand, it maintains an exclusively mediated character, as it presupposes the use of digital media for communication, information and interaction. Education, at any level and in any way, is considered perhaps the most basic and powerful means of exploiting the benefits of the wealth of technological achievements and the progress of human intellect in this field.

5. Digital citizenship and teachers' role

The contemporary citizen is "immersed" in the media. ICT are becoming an integral part of the social activity of individuals and groups. Today, it is difficult to accept the possibility of a technological lockdown. Such an event could bring negative effects not only for ICT systems, but also for the mental sphere of citizens.[32] The teacher has an important role as a link to the knowledge community, or state of the art important in that discipline.

Contemporary teacher competences should include the effective ability to implement ICT solutions in the teaching process. In some items of pedagogical literature, this education is called multimedia education. The role of the teacher has already changed, in part depending on the extent that new technologies have been introduced in schools and the educational process. It is being recognized that its traditional role has passed irrevocably, becoming a driving force for the search, creation and encouragement of self-improvement; from being a master of knowledge and having ability to transmit. New technologies and their pedagogical utilization must be realized in such a way that the full development of students is sought and is in line with the modern digital age. The teacher should be the regulator at the service of the pedagogical purpose. Digital literacy becomes an integral and irreplaceable part of the educational process. Teachers have to encourage the development of skills, such as interactive learning, collaborative and independent learning among the students, in order to transform them into life-long learners and innovators. Apart from general teaching skills, further aptitudes are needed and the teacher should play

[32] T. Bria Klotz, *Digital Technology and Teacher Preparation: The instructional role of social media among pre-service teachers*, Kansas City 2017, University of Kansas Press.

his role effectively as a facilitator of learning. It is interesting to underline the importance of networking skills which facilitate collaborative learning, communications skills and social media communication. It is also very important to possess the appropriate competences for the management of knowledge, which is a key skill for a teacher in a knowledge-based society. This includes the possibility to find, find, analyze, evaluate, use and disseminate information, within a particular context, always in connection with educational goals and pedagogical uses. It is very important to combine learners' needs and desires with the objectives of curriculum.

6. Case study. Preresearch: Digital teaching aspects during COVID-19

Nowadays, the understanding of the changing work environment of students and teachers caused by technological influence, should be strengthened by actions improving the skills and knowledge of teachers, who should still be masters and guides, not people with limited media competences. In the case of transition from the traditional model of learning to a blended or remote model using ICT, the teacher should have a conceptual framework, enabling the use of technology, to effectively transfer knowledge and values. A stress should be made upon possessing civic values. A special research laboratory is the COVID-19 epidemic which began in March 2020. As part of the activities to diagnose the situation, in April 19-30, 2020 research on the use of ICT in CATI teaching was carried out on a sample of 50 teachers and 104 students in various types of schools. The study was a pilot study, but it served to identify certain cognitive trends.

First of all, the aggregated research material allowed for the formulation of a conclusion that teachers had a low level of trust in ICT. As part of this hypothesis, teachers were asked to state whether they had adequate competences to conduct classes in a virtual environment when they started learning online. The vast majority of teachers (31 responses) declared that the tools had not been implemented before, and that it was necessary to use tutorials and organize training. Only eight teachers declared full knowledge of the software.

Another hypothesis assumed was that when using online tools, teachers try to provide a large amount of additional materials, which leads to information overload. The students participating in the study confirmed this hypothesis

by declaring that the amount of material provided during the study period significantly exceeded the perceptive abilities (83 responses); 29 students, learning remotely was associated with a cutback in their free time.

It was also assumed that some of the content included in the core curriculum would be omitted during the learning period. This hypothesis has not been confirmed. Most respondents who are teachers indicated that the program is implemented in a similar or identical way, just as if it was done through contact learning. Interestingly, the students indicated a reduced level of concentration and, consequently, the perception of content. For 3/5 students, distance learning was associated with the need to return to the lectured content after the end of the class. As indicated by the respondents in the research, this was not the case with contact learning.

Taking advantage of the research opportunity, the authors asked about the presentation of content related to civil society and civic attitudes. Pupils identified as important a large number of initiatives by teachers who undertook discussions on civic participation and activity in moments of crisis, encouraged community action and made participants aware of the need to redistribute information to relatives and friends on procedures related to the legal protection of the individual. Interestingly, such activities took place at all stages of education and involved students between the ages of 6 and 19.

The study presented above is only in the nature of exploring and describing the trend of technology impact factors on the education process from two perspectives. As part of a larger effort, it is planned to use the questionnaire in an international study (Greece, Poland, Hungary, Romania) involving 500 teachers and 2,000 students.

7. Conclusions

Despite the fact that the use of ICT gains more and more influence by 'penetrating' the daily life and practices of the whole population, – especially of the younger age groups – digital literacy is still a question since it does not always have an obvious and universal acceptance. Research findings show significant inequalities in the use and dissemination of new technologies in the field of education and in the consequent course of students/learners, with a corresponding deficit in understanding the importance and application of the principles governing their status as digital citizens.

In the pre-Covid period, a significant proportion of teachers have a negative attitude towards new technologies and their use in the educational process, although they do appreciate their positive impact. However, they focus on the negative effects that may result. This makes them particularly concerned and cautious. The educational lockdown, forced by the transfer of education from classrooms to virtual classrooms and the support system for teachers in the form of training, has made it possible to leapfrog the digital competence of teachers. However, one may wonder whether the enforced situation has led to a sense of sufficient digital competence (Portillo et all 2020). The swiftness of changes and the development of modern information and communication technologies mean that the education system faces new challenges, but also new opportunities. The education system, as it should prepare students to cope with future life, should anticipate and respond to the following changes, rather than providing only theoretical or encyclopaedic knowledge.The influence of new technologies on the sphere of social activity is enormous and thanks to this phenomenon, the role of the teacher is also transformed.

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