School Media Education During the COVID–19 Pandemic: Limitations and New Opportunities

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Abstract

This paper focuses on the media use for distance learning in Ukraine during the quarantine caused by the COVID–19 pandemic. The study found out that during the COVID–19 pandemic the media have a powerful and contradictory influence on education, becoming a leading factor in socialization, social learning, and a means and source of formal and non-formal education. Theoretical methods were used in the work: analysis, generalization of scientific sources and normative documents. To generalize the experience of media educational activities of teachers, the survey was used (830 respondents). Its results were interpreted using methods of analysis, specification and classification. The teachers reported using media-related tasks, such as presentations, watching movies, visiting virtual museums, taking photos and making educational videos, reading popular science literature, comparing fiction and screenplays, comparing textual information from different sources, creating pages of literary characters in social networks, comics, mental maps, news reports, writing fictionalized biographies and annotations, preparing crossword puzzles after watching educational films, sharing life experience, personal life events, drawing after listening to audio and watching videos. The criteria for the responsible use of media by teachers in distance learning are following: preferential use of established professional platforms, or communication groups, verifying the sources, collaboration with colleagues and parents, adjusting information to meet individual needs.

Keywords: media education, media literacy, media culture, distance learning, media texts, mass media, media-related tasks, social media, the COVID–19 pandemic, quarantine.

1. Introduction

Quarantine restrictions caused new problems for teachers, parents and students regarding the organization of distance learning. Most of the primary and secondary school sector in Ukraine (about 15.000 schools across the country) was based on offline education system and had to opt the online classes for empowering the education and for the benefits of the pupils.

During the COVID–19 pandemic the media have a powerful and at the same time contradictory influence on education as a leading factor in socialization, social learning, and a means and source of formal and non-formal education. In the new realities, pupils learn to create their own media texts, develop a culture of communication, creativity, forms of interaction with media technology (video, audio, computer). At the same time, the children are under the influence of continuous flows of information transmitted through television channels, video and audio products, educational platforms, social networks. Mass media, besides informing, educating, and

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entertaining, encourage aggression, fear, and violence, affecting children in their everyday life (Labaš, 2015). During the quarantine children are distracted by TV, computer games and mobile phones at home. Moreover, interactions online seem to be "quite weird", as some pupils prefer to turn off their computers' cameras and microphones, leaving teachers to lecture to "black screens" for hours on end (Bansal, 2020).

Therefore, the new conditions posed significant challenges to the education system, teachers, children and their parents. The problem is that not all teachers know how to implement media education correctly, so sometimes media harm learning process instead of helping pupils in learning.

The aim of this article is taking into account the results of previous research and the results of a survey of teachers to outline the possibilities and limitations of the use of media education technologies for education in Ukraine during the COVID–19 pandemic.

2. Materials and methods

Theoretical methods were used in the work: analysis, generalization of scientific sources and normative official documents. To generalize the experience of media educational activities of teachers, the survey was used. Its results were interpreted with the methods of analysis, specification and classification.

Procedure. In April and May 2020 on the page of the Ministry of Education and Science of Ukraine, as well as in Facebook groups Primary School and Preschool, Union of Educators of Ukraine, Teacher to Teachers, Students and Parents, School of Media Education in Kinburn, a google form was posted to survey Ukrainian teachers on media education for schoolchildren in the period of the COVID–19 pandemic. The online survey was easy to be administered and accessed by respondents using various devices.

A total of 830 school teachers took part in the survey (391 primary school teachers and 439 secondary school teachers) from all over the country. The survey contained 21 questions, including 7 open-ended ones. 14 questions had ready-made answers, of which for 7 questions respondents could choose more than one answer.

3. Discussion

Media education is based on innovative pedagogy, "the defining feature of which is mutual understanding, mutual respect, creative cooperation, the use of personal dialogue as a dominant form of educational communication, exchange of ideas, impressions, modeling of life situations, self-analysis, self-assessment, self-knowledge" (Ivanov et al., 2014). Sharing I. Fateeva's opinion, in this work we understand "media education" as "all purposeful and systematic actions designed to meet the educational needs that arise from the fact of the existence of the mass media" (Fateeva, 2015).

In a review of brain network research focusing on media education, D. Anderson and M. Davidson (Anderson, Davidson, 2019) made a distinction between different types of media. Receptive media do not require active overt responses (other than attending) for the content to unfold (e.g., radio, TV, movies). Interactive media (e.g., computer games) require some kind of overt responding with subsequent media content depending on the nature of the response. D. Anderson (Anderson, 2020) noted that receptive media produce greater memory for temporal and causal connections, meanwhile interactive media produce better memory for specific events and associations.

Due to purposeful information influences on the pupils, the main goals of media education are following: media literacy (a set of systematized media knowledge, skills, attitudes to media education in general, as well as level of skill in the implementation of media education in the pedagogical process); social communication (the mutual exchange between communicators by targeted (socially significant) messages that affect the participants of social interaction); media culture (the ability to actively, meaningfully assimilate the content of an untrustworthy message). On this basis arises a new, innovative field of information pedagogy – media pedagogy as a set of all pedagogical concepts, theories, technologies and techniques, in one way or another related to the use of media, a set of techniques to develop creative communication skills, critical thinking, skills of full perception, interpretation, analysis and evaluation of media texts (Fortunatov, 2011).

L. Zaznobina formulated the following requirements for the minimum level of media education, based on skills: to find the necessary information in various sources; translate visual

information into verbal sign system and vice versa; transform information, to change its volume, form, sign system, carrier, etc., based on the purpose of communicative interaction and the characteristics of the audience for which it is intended; understand the goals of communication, the direction of information flow; argue statements; find errors in the received information and make suggestions for correction them; accept alternative points of view and to express substantiated arguments for and against each of them (Zaznobina, 1998: 34). S. Cordes justified the need to use such a generalized concept as "multimodal literacy", which means a set of four types of literacy: information, visual, media literacy and multicultural literacy (Cordes, 2009).

The children are exposed to high risk through their use of media: cyberbullying and online abuse; exposure to negative forms of user-generated content; the threat to confidentiality. Structural equation modeling revealed that children's time online was a marginally significant negative predictor of middle childhood academic performance (Hurwitz, Schmitt, 2019). Another fact is that excessive use of social apps is negatively related to academic performance (Hsiao et al., 2017). For instance, Facebook overuse negatively affects students' behavioral engagement (Datu et al., 2018). Moreover, the teachers also may experience some challenges as they attempt to use media tools (Carpenter, Harvey, 2019).

M. Willoughby emphasizes on the responsibility for teachers to become informed on the various media platforms, to ensure that their work with children incorporates an understanding of their media use, and to educate and inform children and their families on the risks associated with media use (Willoughby, 2018). By taking these steps it will be possible for pupils to safely take advantage of the opportunities media offers them. So, it is necessary to have platforms that help students and teachers to appropriately use Internet and social media to access relevant sources without wasting time for search that ends up with frustration and demotivation (Chang et al., 2019).

From September 1, 2018, Ukraine applies a new State standard of education, where mandatory learning outcomes require that pupils of the New Ukrainian school must acquire skills in perception, analysis, interpretation, critical evaluation of information in texts of various kinds and media texts (About…, 2018). The Concept of the Ministry of Education and Science of Ukraine "New Ukrainian School" states that one of the main competencies that are formed during training is information and media literacy (New…, 2016). According to new standards media literacy should provide knowledge on how to: analyze, critically interpret and create media texts (messages of any media type and genre); identify sources of media texts, their political, social, commercial, cultural interests and context; interpret media texts and values disseminated by media; select appropriate media to create and distribute their own media texts and attract interested audiences; enable free access to media for consumption and production of own media products (Volosheniuk, Mokrohuz, 2017: 16).

We can fully agree with Alexander Fedorov that the media literacy (media competence) acquired in the process of media education helps a person to actively use the information field of television, radio, video, cinema, press, Internet, helps him to better understand the language of media culture (Fedorov, 2001: 38). Additionally, C. Scheibe and F. Rogow advise to use documentaries and dramas, TV news, analytics, reality shows; hip-hop, country, folk and classical music (Scheibe, Rogow, 2012).

Our findings are consistent with prior research integrating aspects of children's own media culture. The children prefer media that provides them with: stimulation (excitement, novelty, and challenge in life), hedonism (pleasure or sensuous gratification), achievement (personal success through demonstrating competence according to social standards), self-direction (independent thought and action — choosing, creating, exploring) (Hartikainen et al., 2019).

The natural development of digital literacy skills is slow and often susceptible to growth spurts. Progress is most pronounced in children's ability to collect information on the Internet, whereas their ability to create digital information products from scratch improves the least. Developmental growth of most skills is moderately related, largely unaffected by children's socio-demographic factors, and independent of their achievement gains in the core subjects of reading comprehension and math. Distinct digital literacy skills develop at a different pace (Lazonder et al., 2019).

A steadily growing body of research has in recent years documented multiple benefits and limitations of media use for education. Our findings contribute to the literature by adding to the limited empirical evidence regarding the challenges educators and pupils experience in their

engagement in distance learning via media. This study contributes to the literature on media education and media literacy in at least three ways. First, we examine the experience of teaching with media-related tasks during the COVID-19 pandemic. Second, we investigate media as an indispensable but unsafe learning tool and highlight the criteria for the responsible use of media by teachers. Third, we identify several instructional mechanisms whereby distance learning with media may be improved.

4. Results

Answering the question "What do you mean by media education of students?" 563 respondents chose the answer: the formation of students' media culture, their preparation for safe and effective interaction with the media. Meanwhile, 260 consider media education to be the use of mass media as an additional means of learning, and 7 have never heard of such a concept.

To the question "What forms of media education do you use during quarantine?" respondents answered by choosing one or more answer options. In addition, they had the opportunity to add their own answer. The results of the survey show that on the first place in popularity among teachers are the videos on the Internet (654 answers), including their own (131 answers), on the second – creative tasks related to the media (537 answers), on the third – TV lessons (311 answers), on the fourth – video games (307 answers), on the fifth – pages in social networks (126 answers), on the sixth – podcasts (49 answers). Fifteen teachers stated that they did not use any form of media education during the quarantine. As we see, in general the process of selecting media for learning at a distance is the same (or nearly the same) as media selected for face-to-face teaching and learning.

The teachers reported in detail about the media project "Ukrainian School Online", which appeared during the quarantine. The lessons were shown to pupils in grades 1–11 on the YouTube channel of the Ministry of Education, as well as on another 15 channels and scheduled media resources. Thanks to it pupils could study at home. More than 70 % of respondents (574) recommended it to their pupils. During the lessons, the role of "pupils" in it was played by the "stars" of show business. They asked teachers questions and commented on the quality of teaching.

Expressing their opinion on the project, the teachers generally assessed it positively, but stressed the need to review TV lessons, because some of them contained significant errors that sounded throughout the country. For example, in a math lesson, a teacher subtracted 2.2 from 30.2 and got 18; geography teacher confused the Indian and Atlantic Oceans, Ukrainian teacher confused the poles, calling the Arctic polar bear an inhabitant of Antarctica, located on the other side of the Earth. In a world history lesson, a teacher was mistaken in saying that Ivan the Terrible fought with the Lebanese Order in 1558 for access to the Baltic Sea. But the war was Livonian, and accordingly the order was called Livonian.

638 teachers reported using media-related tasks. Among such tasks: presentations, watching movies, visiting museums, taking photos and making videos, reading popular science literature, comparing fiction and screenplays, comparing textual information from different sources, creating pages of literary characters in social networks, comics, mental maps, news reports, writing fictionalized biographies and annotations, preparation crossword puzzles after watching an educational film, sharing life experience, personal life events, drawing after listening to audio and watching video. As we see, the selection of media-related tasks to support distance learning is intuitive and usually occurs as a matter of personal preference.

Among primary school teachers the most popular tasks were watching movies, taking photos, making presentations, drawing after watching videos or listening to audio information (especially fairy tales), reading popular science literature. For older pupils, the tasks depend on the specifics of the discipline. Thus, teachers of Ukrainian and foreign literature asked pupils to compare texts and screenplays, make videos, create comics, pages of literary heroes on social networks, create fictionalized biographies, share life experiences, personal life events. Teachers of natural sciences used popular science films and literature, making presentations, videos, crossword puzzles. Historians preferred documentaries, mental maps, analysis of media texts and comparison of information from different sources. Language teachers actively used the videos, crossword puzzles, news reports. Media tasks were also offered by teachers of creative disciplines (music, art) and teachers-organizers. So, when selecting the most appropriate media for distance education, a number of variables that may influence the selection of one medium over another, should be taken into account: pupils' age, subject, motivation, Internet accessibility.

It is a well-known fact that Twitter and Facebook are considered to be the fastest ways of finding information that might be of great value for all students. Remarkably, these websites can be easily used for creating a discussion in the classroom. These media are primarily used as collaborative tools and not considered stand-alone instructional media delivery options. Interestingly, it is possible to create a chat room that can be embedded later to some blog and scheduled to open at a specified time. Actually, all teachers can easily pull new stories from any of these online sources and the students can put any questions in order to develop the further discussion of the previously downloaded article. Speaking about various blogs, they can be utilized to encourage creative writing and to enrich grammar skills.

Answering questions about opportunities, provided by media education, teachers noticed that media-related tasks make lessons more interesting (345 answers), encourage children to learn (301 answer), develop critical thinking (217 answers), various forms of self control (101 answers). But 76 teachers noted that closing schools for quarantine has the greatest impact on vulnerable groups, as the school is often a place of safety and positive communication for children. In response, they were trying to recreate this social structure of the school outside of school: connect friends and classmates online, give them the opportunity to communicate and express themselves through storytelling or other creative way.

The purpose of media education is considered by teachers to educate a media literate members of society who are able to turn information into knowledge; not to succumb to media aggression and manipulation (532 answers); to search, comprehend, systematize, adapt and use information from different sources (512 answers); to adequately treat criticism, be a cultural and ethical media consumer (328 answers).

The teachers underlined some restrictions on the use of Internet resources as a means of education. These risks include the spread of unreviewed material on social media (491 answers), the spread of fakes and prejudices (432 answers), the use of advice that could harm the lives and health of students (318 answers), dangerous online dating and fraud (208 answers).

Respondents had the opportunity to comment on the role of parents in the organization of distance learning using media education technologies. 446 (53.7 %) believe that this is primarily protection against the negative impact of the media environment, 239 (28.8 %) answered that the role of parents is to help prepare for classes, while 145 (17.5 %) believe that parents should to conduct media educational activities independently of the school in accordance with the values of the family and the interests of their own children.

When asked where teachers get ideas for distance learning using media education technologies, respondents had the opportunity to choose several answers and suggest their own options, which were quantitatively distributed as follows: social media and pedagogical forums (512 answers), educational projects (503 answers), methodical literature (477 answers), own ideas (374 answers), school management (249 answers), students' suggestions (233 answers), parents' suggestions (171 answers).

Respondents also shared their experience of using media resources for distance learning. The most popular group was the Facebook group Primary School and Preschool Education (over 72.600 participants). Here are publications of educational, developmental nature, speech therapy exercises, games, educational videos, songs, fairy tales, pedagogical news for educators and teachers, as well as useful articles about the upbringing and education of children for parents. Popular among teachers are the educational project "Na urok", the IT project "Vseosvita", the online education studio EdEra, the YouTube channel "Interesting Science" with short popular science videos in physics, astronomy, biology, geography and mathematics, cartoons. Foreign language teachers noted the special potential of distance education using the media. In particular, they pointed out that media education helps to improve such types of foreign language speech activities as speaking and listening. Their students get acquainted with the peculiarities of language behavior, culture and traditions of different peoples through watching feature films, popular science videos, listening to music, reading blogs, as well as via synchronous communication in social networks and chats. 5 foreign language teachers recommended co-engagement pupils via media and "co-viewing" as optimal for learning and spurring conversations (and thereby helping to develop vocabulary and more in-depth understanding).

One answer of the literature teacher from Cherkasy Secondary School was extremely interesting, that media education allows to teach children to think non-stereotypically, for example to lead them to the conclusion that there are not only positive or only negative characters in

literature. For example, in Ukrainian fairy tales there are almost no negative characters, as the plots of fairy tales appeared long before the advent of Christianity with a clear division into black and white. The most popular villain, the Serpent, shows nobility in fairy tales: he arranges a feast for the hero who came to defeat him, always asks "shall we fight or put up with it?", gives the opponent the right to hit first, and so on. Some fairy-tale evil heroes serve to regulate behavior. For example, mermaids can tickle if the character doesn't answer their riddles, punishing for lack of intelligence. Water lord can drag to the bottom the person who bathes under the wheel of the mill. Lord of the meadow sends eternal sleep to those who work in the field at noon, when the sun is the hottest.

To the question "What difficulties did you and your students face in organizing distance learning using media resources?" 676 people answered. The answers were distributed as follows (respondents had the opportunity to choose several options): students' access to the Internet (389); easy access for children to unsafe content (298); oversaturation of the Internet space with advertising content (237); laziness of students (183); parental indifference (111). Only 56 respondents stated that they had no problems in organizing distance learning with the involvement of media resources. As a serious problem teachers noted the excess of information, in addition, different information: reliable and unreliable, relevant and outdated, important and secondary, official and distorted, and so on.

More than half of the teachers surveyed (429 people) noted the additional negative aspects of students' interaction with the media, including the fact that children watch cartoons, play games, chat while the teacher on the other side of the screen tries to explain the material; distance education using the media doesn't work without an adult who will sit on the sidelines and monitor what the child is doing online. Students face a growing flow of information, experience significant difficulties when it is necessary to apply search skills, to critically evaluate the information obtained. Quarantine gave teachers the opportunity to once again discuss the issue of academic integrity with students, as above a quarter of respondents (245) faced the fact that parents perform tasks for some, and students write off work from sites with ready-made homework and more.

Only 124 teachers used media resources for media education on COVID-19. Among such resources they pointed out StopFake, No Lies, Media Detector, Beyond the News. Meanwhile 132 teachers faced pupils' stress disorder, depression, inability to concentrate, anxiety, panic disorders, and behavioral disorders in pandemic period. They included staying away from classmates, loneliness, misinformation on social media, insecurity in the families. Teachers noticed that living in urban areas, having pets, living with both parents are protective factors for pupils against the anxiety experienced during the COVID-19 outbreak.

In response to an open-ended question, 56 teachers also identified barriers to the use of the media during the Covid-19 pandemic, for example: "I do not have sufficient knowledge and skill to use media during the Covid-19 pandemic", "I believe that the use of media in distance can be dangerous", "textbooks are not in line with media use", "media resources that are available are not in accordance with the curriculum", "the contents of my subject are difficult to be understood by pupils via media", "my students are not interested in using media".

Unfortunately, we still have a disproportionate number of children in parts of the country that are unable to access the Internet. Some families may share one computer; others may not own a computer at all. So, we need to find ways through partnerships with government, business, and educational systems to provide computers and Internet access for all learners.

In view of this, the ability to prevent spreading consumerism, and violence, to decode manipulations, propaganda, to distinguish facts from judgments, relevant and secondary information, to identify and counteract hate speech, to correctly understand the meaning of audiovisual images is actualized. The key competence in the use of media in quarantine is the readiness to use them in terms of knowledge, skills, abilities that provide effective interaction with the media on the basis of information technology. In our opinion, each medium should pass certain tests before incorporating it into the distance learning scheme.

431 respondents provided advice on distance learning using the media. These tips can be reduced to the following positions: to study and implement foreign experience; develop a concept that takes into account all aspects of such activities from the duration of the lesson to a list of recommended sources; mandatory parental support and supervision; translation of scientific videos from foreign languages; creating a situation of success, etc. Media education is a positive and necessary part of the educational process both primary and secondary school. The media

allows to modernize the learning process, develops the skills needed in the XXI century, allows to achieve a teacher-children-parent partnership. 23 teachers stated, that it is necessary to draw pupils' attention to the subject through the channels that students usually use, and to involve in the learning process media streams that are familiar for pupils.

5. Conclusion

In the context of the coronavirus infection pandemic, the problem of children's interaction with the media, the formation of their critical thinking, the ability to interpret, analyze and evaluate media texts has become more acute. Restriction of motor activity and dense flow of information coming from various media sources can form a superficial image of the world around them, because children, especially in elementary school, find it difficult to perceive the significant flow of information, filter and critically evaluate it.

Summarizing the results of the survey, we can highlight following criteria for the responsible use of media by teachers in distance learning:
1. Preferential use of established professional platforms, or communication groups;
2. Verifying the sources;
3. Collaboration with colleagues and parents;
4. Adjusting information to meet individual needs.

The roles of teachers in media education during the quarantine are: offer media resources that provide advice on personal safety and health during quarantine; demonstrate solidarity, goodness, understand that it is psychologically difficult for pupils to perceive quarantine; do not overload children with information; become a reliable source of information, especially related to the curriculum; use social media as hubs of social activity and human interaction; demonstrate the importance of tolerance, mutual support, critical thinking when communicating on the Internet on the example of economic processes that accompany the lockdown; help pupils to become media-competent people who know how to use the media in learning, are able to understand, analyze and critically evaluate media content.

New studies need to consider the family media environment. These studies should include comprehensive assessment of family media education. Data collection from multiple countries is needed to document both similarities and cultural differences in the content and context of media usage in distance education across the globe. In addition, inclusion of participants from rich and low-income countries is necessary to build a complete picture of the effects of media on child outcomes.

The present study is subject to two limitations. First, although all participants self-reported that they were secondary school teachers, we were unable to verify their teaching registration as the survey was conducted online. Second, we believe that pupils' and parents' voices are also crucial to be raised in this issue. Nevertheless, the findings of this study may serve as an alert to teachers, schools and officials of the Ministry of Education and Science about limitations and new opportunities in school media education during the COVID-19 pandemic.

References

About..., 2018 – About the statement of the State standard of primary education (2018). [Electronic resource]. URL: https://zakon.rada.gov.ua/laws/show/87-2018-%D0%BF

Anderson, 2020 – Anderson, D. (2020). Reflections on technologies for studying children and media. *Journal of Children and Media*. 14: 131-140. DOI: 10.1080/17482798.2019.1704358

Anderson, Davidson, 2019 – Anderson, D., Davidson, M. (2019). Receptive versus interactive video screens: A role for the brain's default mode network in learning from media. *Computers in Human Behavior*. 99: 168-180. DOI: https://doi.org/10.1016/j.chb.2019.05.008

Bansal, 2020 – Bansal, S. (2020). Impact of the COVID-19 Pandemic on Education, Rise of Online Teaching Learning Process & Effects on Health of Kids [Electronic resource]. URL: https://ssrn.com/abstract=3595971

Carpenter, Harvey, 2019 – Carpenter, J.P., Harvey, S. (2019). "There's no referee on social media": Challenges in educator professional social media use. *Teaching and Teacher Education*. 86: 102904. DOI: 10.1016/j.tate.2019.102904

Chang et al., 2019 – Chang, C.T., Tu, C.S., Hajiyev, J. (2019). Integrating academic type of social media activity with perceived academic performance: A role of task-related and non-task-related compulsive Internet use. *Computers & Education*. 139: 157-172. DOI: 10.1016/j.compedu.2

Cordes, 2009 – *Cordes, S.* (2009). Horizons Broad: The Role of Multimodal Literacy in 21st Century Library Instruction. World Library and Information Congress: 75th IFLA General Conference and Assembly "Libraries create futures: Building on 17 cultural heritage" (23–27 August 2009, Milan, Italy. [Electronic resource]. URL: http://www.ifla.org

Datu, et al., 2018 – *Datu, J.A.D., Yang, W., Valdez, J.P.M., Chu, S.K.W.* (2018). Is Facebook involvement associated with academic engagement among Filipino university students? Across-sectional study. *Computers & Education.* 125: 246-253. DOI: https://doi.org/10.1016/j.compedu.2018.06.010

Fateeva, 2015 – *Fateeva, I.* (2015). Aktualnye problemy mediaobrazovaniya [Actual problems of media education]. Chelyabinsk. [in Russian]

Fedorov, 2001 – *Fedorov, A.* (2001). Mediaobrazovanie: istoriya, teoriya i metodika [Media Education: history, theory and methods]. Rostov. [in Russian]

Fortunatov, 2011 – *Fortinatov, A.* (2011). Mediapedagogika ili tekhnovospitanie [Media pedagogy or technology education]. *Filosofiya i obshhestvo.* 3: 135-154. [in Russian]

Ivanov et al., 2014 – *Ivanov, V., Volosheniuk, O., Mokrohuz, O.* (2014). (Eds). Osnovy mediahramotnosti [Fundamentals of media literacy]. Kyiv. [in Ukrainian]

Hartikainen et al., 2019 – *Hartikainen, H., Iivari, N., Kinnula, M.* (2019). Children's design recommendations for online safety education. *International Journal of Child-Computer Interaction.* 22, 100146. DOI: 10.1016/j.ijcci.2019.100146

Hsiao et al., 2017 – *Hsiao, K.L., Shu, Y., Huang, T.C.* (2017). Exploring the effect of compulsive social app usage on technostress and academic performance: Perspectives from personality traits. *Telematics and Informatics.* 34(2): 679-690. DOI: 10.1016/j.tele.2016.11.001

Hurwitz, Schmitt, 2019 – *Hurwitz, L., Schmitt, K.* (2019). Can children benefit from early internet exposure? Short- and long-term links between internet use, digital skill, and academic performance. *Computers & Education.* 146: 103750. DOI: https://doi.org/10.1016/j.compedu.2019.103750

Labaš, 2015 – *Labaš, D.* (2015). "Djeca medija" – mladi obrazuju mlade. In Car, V., Turcilo, L., Matovic, M. (Eds). Medijska pismenost – preduvjet za odgovorne medije. Sarajevo, Bosnia and Herzegovina: Fakultet politickih nauka Univerziteta u Sarajevu.

Lazonder, et al., 2019 – *Lazonder, A.W., Walraven, A., Gijlers, H., Janssen, N.* (2019). Longitudinal assessment of digital literacy in children: Findings from a large Dutch single-school study. *Computers & Education.* 143: 103681. DOI: 10.1016/j.compedu.2019.103681

New…, 2016 – New Ukrainian school: conceptual bases of secondary school reform (2016). [Electronic resource]. URL: https://mon.gov.ua/storage/app/media/zagalna%20serednya/nova-ukrainska-shkola-compressed.pdf

Scheibe, Rogow, 2012 – *Scheibe, C., Rogow, F.* (2012). The Teacher's guide to media literacy: critical thinking in a multimedia world. Corwin Press.

Volosheniuk, Mokrohuz, 2017 – *Volosheniuk, O., Mokrohuz, O.* (2017). Batky, dity ta media [Parents, children and the media]. Kyiv. [in Ukrainian]

Willoughby, 2018 – *Willoughby, M.* (2018). A review of the risks associated with children and young people's social media use and the implications for social work practice. *Journal of Social Work Practice.* 33: 127-140. DOI: 10.1080/02650533.2018.1460587

Zaznobina, 1998 – *Zaznobina, S.* (1998). Standart mediaobrazovaniya, integrirovannogo s razlichnymi shkol'nymi distsiplinami [Standard of media education, integrated with various school disciplines]. *Standarty i monitoring v obrazovanii.* 3: 26-34. [in Russian]