MEDIA LITERACY AND CYBER SECURITY: THEORY AND PRACTICE IN EDUCATION

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Abstract:

The ubiquitous digital communication platforms and the growing significance of virtual reality platforms have brought along the dawn of the post-postmodern cyber era. The new historical times have also resulted in the rising importance of digital applications aiming for spreading mass persuasion, disinformation, propaganda and fake news, primarily targeting users belonging to two distinguished age groups: teenagers, young adult and senior citizens. The pandemic and the war in Ukraine have also demonstrated the enormous power and influence of informational warfare and cyber security operations, which may threat even the normal operation of democratic societies and jeopardize the right of millions for reliable and authentic information resources and knowledge. The article presents a designated educational module and a special game book on media literacy with the objective to prepare both students and educators for the various challenges of the new cyber era.

Keywords:

media literacy, news awareness, digital technologies, cyber security.

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INTRODUCTION

This paper aims to highlight upon the theoretical background and the various challenges, best practices of a highly sophisticated and important topic, namely teaching and sharing awareness raising techniques on media and news literacy and facilitating rudimentary cyber security measures to be implemented by secondary and tertiary education students and their educators alike. This endeavor is particularly relevant and significant, in the light of the devastating current events taking place in the war in Ukraine. It is a commonly shared wisdom and durable experience drawn from our common 20th century European history that in times of military conflicts, political turmoil, or extraordinary events, such as a pandemic, the amount of fake news, disinformation, misinformation, hoax stories and misleading propaganda materials along with all sorts of new types of criminal activities tend to soar and prevail in an unprecedented manner and amount.

As one may expect unfortunately, neither the students nor their educators are generally prepared for the unprecedented challenges posed by the flow of incomprehensible amount of digital information and the power of online communication and media platforms in the 21st century. The educational toolkits and useful methodological techniques are mostly missing from the national curricula and syllabus of most countries for various reasons, though many zealous educators tend to come together, merge their skills, expertise and experiences to tackle this problem all over the world. The author of this paper, together with several other global educators coming from dozens of countries from the United States through the Czech Republic to Hungary, had analyzed the intriguing academic topic of media (news) literacy and tended to find and elaborate appropriate educational tools and guidelines applicable in practice.

They came to the revelation and bitter conclusion that despite the powerful counter-trends waging a seemingly windmill fight against the antihuman dark segment of the post-postmodern world [1] still proves to be one of the ultimate splendid pedagogic objective to accomplish. This rather Huxleyan 'brave new world' and the unfolding new paradigm of cyber era are dominated by cutting edge technological innovations, such as smart devices and featured by virtual communication platforms and digital applications, which pose versatile challenges and threats for the unprepared users.

2. DIGITAL GLOBALISATION AND ITS CHALLENGES

The Washington DC based Spy Museum share its famous motto at the main entrance hall: "Trust nobody, question everything" that might as well be the most suitable slogan of our weird over-communicated and under-grasped world. In the tormented present era, when Europe faces the most devastating large scale regional conventional war in Ukraine, we can state that there are few more important and influential factors than the reliable, objective, factual information resources and descriptions about the ongoing bloody conflict in our neighborhood. With the quick rise of global digital culture and internet-based communication platforms since the mid-1990s, information has become a power tool and a weapon, as well. Informational operations within the context of strategic information warfare along with its cyber counterparts have also become the fourth and fifth new military domains [2] in the 21st century.

The much quoted virtual dimension or cyber sphere tends to be the actual living condition and almost primary sense of reality for about half of the world's population [3], though all the same the other half of the world still faces daily problems of getting fresh water, enough nutrition and electricity not to mention computers and smarts devices to communicate and learn.

The various cyber threats prevailing in the new informational dimension can also be labelled with the growing importance and prevalence of malicious side-effects and new phenomena, such as fake news, extreme political demagogy, socio-psychological influencers, disinformation, echo chambers, cognitive bias and paradoxically the more information resulting in less informed and more disoriented people. The rise of artificial intelligence with the dawn of robotic chat networks, news editing algorithms and computerized content creation altogether turn the unfolding digital universe even less humanistic and, basically more antisocial in a self-generating and seemingly unstoppable manner. These new technological trends affect not only common users' attitudes and lifestyles but even reshape the frameworks and political dimensions of international relations in the 21st century [4].

Many philosophers and futurologists tend to claim that the means (technology) has become the ultimate goal (more technology) [5] leading towards an unprecedented new futuristic dimension of prevailing general artificial intelligence and human-machine interfaces, which will certainly dominate and alter even the course of human history as wittily predicted by John von Neumann or Ray Kurtzweil decades ago [6].

3. PRACTICE IN EDUCATION

The article tends to present the various experiences, feed-backs and reviews gathered through years-long educational projects concerning media and news literacy, internet security issues and best practices carried out and experienced in institutions of secondary and tertiary education in the Central East European region.

To provide a general outline and overview of the conditions prevailing among adolescence and young adults, especially in Hungary, several studies and specific surveys have been conducted both by academics as well as by common educators in the field. These studies share some common points, which may as well be relevant for other young people in the countries of the Visegrád Four region and in South East Europe, too. Namely, the results and conclusions of the rather

comprehensive surveys and study book compiled by sociologist scholars András Bíró-Nagy and Andrea Szabó [7] claim that young people aged between 15 and 29 years are predominantly determined and affected by their peers, social media-driven influencers living, learning and having fun within the dimensions of their convenient information bubbles or notoriously powerful echo chambers determined by virtual 'talking head influencers'. Even the political affiliations (mostly Right or Left without political philosophical refinements) tend to be affected and elaborated by these information clusters also providing examples of self-declared prophets and experts of Dunning-Kruger effect's [8] manifestation of cognitive bias.

These latter factors prove to be significantly relevant and influential elements upon the life conducts and habits of the mind of both teenagers and young adults, since even their social, political and cultural attitudes, optimistic or pessimistic outlook concerning their personal objectives and nationwide future prospects are predominantly shaped by their online activities and the impacts, inputs received from various media platforms.

The personal experiences of the author of this paper also supported by minor scale survey conducted among few hundred Hungarian, American and Czech students tend to justify the presumptions that students belonging to the Western civilization, in broad context, tend to share similar or identical attitudes, internet usage patterns and media literacy skills irrespective of their nationalities or affiliations. Some sort of naïveté and sound skepticism are also common features of young users from Hungary to the United States, supplemented by the lack of applying rudimentary security measures on their smart devices and superficial naive trust laid in their internet service providers for protecting them from malicious intruders. Most of the students involved in the surveys or in the projects mentioned above, have received some preliminary educational modules and training sessions on safe internet usage and possible cyber threats. However, in terms of the versatile and multilevel hazards and challenges they might encounter or may have to cope with in the cyber space or on their favorite digital platforms, they prove to be rather unprepared, vulnerable as well as unskilled. The distinguished target group of multimedia video sharing and chatting platforms, featured by the unfiltered controversial contents flooded upon the users, happen to be the adolescents or young users primarily aged under 25 years. The other much targeted and highly vulnerable age group significantly exposed to disinformation, fake news contents and various conspiracy theories are meant to be the senior citizens [9].

These preferred target groups are eager to fall into the trap of sophisticated miz, and disinformation campaigns, deep faking footages not hanging the proper background knowledge and technological expertise. Despite the commonly held topology and misconception of generations of *digital immigrants* (generations X,Y,) versus *digital natives* (millennials, generation Alpha) coined by an American web-geek Marc Prensky [10] in 2001, these categories fall short of depicting the complex reality, vulnerability and attitude of young and senior people, nowadays in this matter. Namely, provided that one learns and thoroughly prepares for tackling with the new technology-driven challenges and brand new cyber paradigms surrounding the end-users, ultimately no one can really navigate safely on his/her own among the clusters of information and grasp the true authentic message of all the digital content. To put it into context, the daily amount of digital information generated by more than 4 billion internet users is around 44 zettabytes [11], which is about four times the amount of digitalized volume of the biggest library in the world, the Washington D.C.-based American Library of Congress with more than 45 million separate book volumes. It may not come as a surprise that common users seem to be losing ground against the exponentially growing flood of digital information and much less and less are inclined and bound by the classic paper based Gutenberg galaxy of printed knowledge content.

In other words, nowadays students around the world are inclined to be left alone with facing the data generator platforms and infinite flow of information on unprecedented scales and manners. They are also advised to obtain the fundamental background knowledge and develop the necessary skills to be able to navigate and find the answers for their queries in this new chaotic, virtual paradigm. As many surveys convey youngsters stand on their own without proper guidance and solid intellectual fundaments to find their way around in the digital maze of online scams, hoaxes and fake news [12]. Furthermore, their primary helpers and alternative gatekeepers of knowledge and information resources have become their own peers, friends and social media influencers list which is followed by their teachers and parents with tertiary importance.

Without the prerequisite set of skills and knowledge toolkit, based on critical and creative thinking and analytic problem solution skills, the aforementioned young or aging people of the cyber era are and will be utterly unable to differentiate between authentic, real information resources, and great variety of hoaxes, distorted or fully fake news, mass manipulation, disinformation and

even extremist warmongering hate speech. The dramatic American events around the siege of Capitolium on January 6, 2021, with the addlepated QAnon [13] cult believer mob demonstrated the disruptive power of disinformation, online conspiracy theories. Moreover, suffice it to mention the conspicuous phenomena of fake theories related to the devastating Covid-19 pandemic as well as the various propaganda and information warfare campaigns witnessed at the virtual battlefields of the Ukrainian war.

The lack of so-called gatekeepers of knowledge, such as medieval scholarly monks, teachers, academics, who used to be functioning as the ultimate sources of reliable information on the world and authorities of knowledge for centuries have basically vanished, or were pushed to their limits of oblivion in the postmodern open societies. Nowadays, it is common to deal with instant superficial answers on the internet featured by the virtual omnipresence of data of all kinds, leaked confidential information, and even data bases from the 'dark web', which pose significant threats in their sheer existence for the users without any proper guidelines, skills or user's handbook to the twilight zone of the internet [14].

To create and spread a manual or guideline of the kind mentioned above, useful both for students and teachers alike, has been the primary objective of the author when he elaborated the 4-class teaching/learning educational module [15], based on the inputs and experiences he gained at the media literacy and cyber security workshops accomplished in the US and in Hungary. The special cross-curricular lessons focus on methods and techniques which may directly foster and develop critical creative thinking skills in a feasible way in formal school-based or informal educational environment. The 4W questions or the famous Ciceronian query '*cui prodest* ? or who benefits ?' are discussed with pragmatism and accuracy during the lessons, along with other important fundaments of media and news literacy and internet security.

4. FAKE IT till you MAKE IT: GAMING ON HOAXES

The new game book entitled *Fake News* [16] on promoting media literacy skills development, initially was the project idea of Edina Kőműves, a young high school teacher of English and French from Budapest, Hungary, when together with the author of this paper they spent some inspiring months together at Kent State University, OH, United States, with Fulbright scholarship on

media literacy in the fall of 2019. Their award winning project and game book, with the kind support of the US State Department Alumni Fund aim to foster and spread the skills and competences of news and media literacy, internet security among adolescent young learners in an enjoyable, gamified way [17], easily implementable both in formal school-based and out-of-school, non-formal educational environment. The book available both in print and online versions, focuses on providing a comprehensive, clear, easy to understand description of ten basic notions of media literacy and internet safety, security through a board game, which can be completed in group or even individually in about 60-80 minutes time span.

Figure 1 – Cover of the game book. Courtesy of the author.

The ten core concepts analyzed and elaborated on through the plot of the book are the following: *content analyses, critical thinking, deep fakes, disinformation, media bias, fake news, misinformation, propaganda, selective exposure and stereotypes*. At the end of the chapter-like game episodes, the book also provides the players, users with a useful list of informative websites that could be a highly beneficial toolkit for future news explorations, fact checking, content analyzing endeavors for open-minded students and educators.

Besides offering an enjoyable and knowledgeable pastime for young learners, the game book is also supplemented with a series of complex awareness raising questions and topics for further discussions involving queries, issues like:

- Mention a media literacy related term from the book that you didn't know / didn't understand before !

- What were the skills that proved to be especially useful in dealing with situations connected to media literacy ?

- What is the role of the media in our society?

- Are there any areas in personal or professional life, where media literacy is especially useful?

- Why do you think having strong media literacy skills is important when we consume / create content?

- How do stereotypes influence us when we read/ listen to the news?

- Mention examples of propaganda, when it a) used visual symbols of power, b) used specific language, or c) monopolized communication sources/channels.

- How can you detect whether there is a biased ideology behind the message you read?

- Can you think of an example where the same piece of information can be presented/framed two (or more) completely different ways?

- What are the pros and cons of getting news from social media?

- What are the concrete news sources you consider reliable and unbiased?

- Give an example of a conspiracy theory that you have heard of?

- What can be useful strategies for identifying fake news and hoaxes?

- What is the difference between a fact and an opinion?

- How does the media have an effect on the operational democracy?

- Why should social media platforms be used with a critical mindset?

- Have you ever seen news when you were not sure if it is (fake) news or parody?

According to the present knowledge of the authors, there is no similar style, genre and in-depth educational book available online and in printed form, too on the niche media market and academic educational sector in Europe. Though, the major English-language news outlets and media agencies do have educational platforms based on their own news material contents thematically reframed for media literacy educational purposes, those are not so popular and easy to comprehend for adolescent users and news consumers.

5. CONCLUSIONS

When the present article started getting its final shape in early February 2022, and the experiences from teaching and implementing the 4-lesson plan media literacy module content, along with the Fake News game book, the author did not know the topic would become even much more relevant and globally outstanding than it has been for the past years. The 'black swan-type' [18] Covid-19 pandemic that everyone feared but no one really expected struck upon human race with unprecedented social, economic and cognitive effects, while the war in Ukraine demonstrated the enormous power of digital media and the rule information bubbles upon modern societies. It is quite a well-established common revelation that media has been the fourth power branch ever since the beginning of the 20th century, and it is so even on larger and deeper scale in the digital age. The online communication platforms, particularly the social media sites, have managed to obtain previously unprecedented power on people's opinion, worldviews, attitudes and values. As we could witness along the American elections or the Brexit-referendum, the big tech corporations and their political affiliations can truly influence, manipulate elections and drastically shape the future of societies, furthermore in worst case scenarios even jeopardize the sound, unbiased, impartial functioning of democratic societies. In order to mitigate the emergence of these risks and to hinder the unsolicited hazardous phenomena to prevail in the postmodern digitalized societies, more and more users, primarily belonging to the younger generations must be educated and prepared, shielded with the proper intellectual toolkit for this uneven and unprecedented challenge in human history. They have to tackle with the controversial though attractive virtual reality of overwhelming alternative facts, fake news, cyber threats and information warfare operations on global scale targeting each and every one of them linked to the ubiquitous matrix.

The game book and the educational module presented above try to provide guidance and intellectual fundaments in this battle for the primary target group

of hoax contents. As it reveals from the work classic fundamental knowledge accompanied with common sense and analytic critical thinking skills prove to be good recipes and manuals for reliable navigation in and out of the digital maze.

6. ACKNOWLEDGMENTS

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