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Combating Disinformation in the Digital Era Assessing Perceptions, Validation Practices and Educational Interventions

Abstract

In today's digital world, disinformation presents a significant societal challenge due to the deliberate manipulation of information aimed at deceiving audiences (Iosifidis & Nicoli, 2019). Unlike fake news, which may involve accidental errors, disinformation is intentionally designed to distort reality and influence public opinion (Langmie, 2021). The use of advanced technologies like AI to alter text, voice, images, and videos amplifies the impact of modern disinformation.

A 2018 report by the European Commission characterizes disinformation as false, inaccurate, or misleading information created with the intent to harm the public or generate profit, excluding illegal content such as defamation and hate speech (European Commission, 2018). Disinformation poses a threat to democratic systems by propagating authoritarian ideologies (Iosifidis & Nicoli, 2019; Langmie, 2021), particularly within ideologically homogenous communities known as echo chambers (Corbu et al., 2020). Historical examples, like those cited by Berliner in 1992 regarding educational reforms, demonstrate disinformation's ability to shape public perception and policy (Berliner, 1992).

Disinformation spreads through bots, troll farms, and targeted advertising, often creating an illusion of credibility by originating from multiple sources (Howard et al., 2021). The emergence of AI-generated synthetic media further complicates efforts to detect and counteract disinformation.

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Public media services are crucial in fighting disinformation by providing context, content, and reliable services (Horowitz et al., 2020). Developing educational programs that equip young people with the skills to identify and challenge disinformation is essential (Howard et al., 2021).

This study explores the perceptions, attitudes, and behaviours of young people concerning internet disinformation, particularly university and high school students. It investigates the relationship between disinformation awareness, the accuracy of information validation, social media use, and experiences with cyber threats. The research employs survey, comparative, and descriptive methods, supplemented by correlation analysis.

The study highlights the importance of educational initiatives to improve disinformation recognition and critical thinking skills. It supports the use of project-based learning and innovative teaching methods to tackle these issues (Pérez-Escolar et al., 2021; Van der Linden et al., 2020). The roles of educators and librarians in disinformation education should be expanded (Farmer, 2019; Kaufman, 2021).

Addressing disinformation in the digital age requires a coordinated educational approach and international cooperation to develop curricula that strengthen young people's ability to resist misleading information.

Keywords: *disinformation, digital society, social networks, information validation, cybersecurity, education, information literacy, social media, public discourse.*

1. INTRODUCTION

Disinformation, in the context of the digital age, poses a multifaceted social challenge as it involves the deliberate alteration of information to deceive people (Iosifidis & Nicoli, 2019). It is important to distinguish modern disinformation from fake news, often conflated with it. Fake news encompasses a broader spectrum, including unintentional inaccuracies and disinformation in news reporting. In contrast, disinformation takes various forms, all sharing the common trait of disseminating misleading or inappropriate content with the intention to manipulate perceptions and convince the public of falsehoods. Today, those who engage in disinformation not only create fabricated information and disseminate it, reminiscent of historical propaganda and disinformation campaigns, but they also leverage advanced technologies and artificial intelligence methods to rapidly manipulate text, voice, images, and videos (Langmie, 2021).

In 2018, a group of experts, under the leadership of Madeleine de Cock Buning, prepared a report for the European Commission intending to advise on political initiatives to combat fake news and online disinformation. The report defines disinformation as any form of false, inaccurate, or misleading information intentionally crafted, presented, and promoted to harm the public or for profit. It is worth noting that this definition does not encompass issues arising from creating and disseminating illegal online content, such as defamation, hate speech, and incitement to violence (European Commission, 2018).

Iosifidis and Nicoli's in-depth analysis supports the idea that disinformation is a pervasive means of spreading authoritarian ideas and poses a serious threat to democracy from various angles, a view also shared in Langmie's book (Iosifidis & Nicoli, 2019; Langmie, 2021). Meanwhile, Corbu, Bârgăoanu, Durach, and Udrea argue that ideologically driven information is particularly harmful due to its easy spread within echo chambers and filter bubbles (Corbu et al., 2020).

In 1992, Berliner foresaw the inevitability of changes and reforms in educational content during the era of disinformation. He believed that reforms in the American education system at that time were rooted in disinformation about the Japanese education system. He also contended that major corporations and the elite were actively promoting a campaign of disinformation that portrayed the American school system as a failure (Berliner, 1992).

The manipulation of information on social networks and other media is carried out by a variety of actors, including bots, troll factories, click generators, fake followers, automated journalism, and targeted advertising based on data. It is often disseminated through numerous sources to facilitate the rapid spread of disinformation, with bots playing a significant role. These are computer programs that do not require specialized knowledge for their programming. When used for malicious purposes, bots can quickly create a false perception of the information's veracity and exploit this distorted perception to achieve harmful objectives. In today's society, chatbots, or automated chat programs, are prevalent across various sectors, and their popularity is notably growing in education. Disinformation comes in different categories and poses varying levels of threat. Whether disinformation consists of entirely fabricated content, partially true content with manipulated images or misleading headlines, fake sources, deceptive context, or concealed advertisements, its threat level is not solely determined by its form. The threat level is linked to the malevolent intentions of the disinformation creator or the entity propagating the disinformation (Howard et al., 2021).

Particularly noteworthy is the rise of synthetic media generated through artificial intelligence techniques, which include natural language processing and neural voice cloning. Such media have the potential to enable significant manipulation if they are not identified as sources of disinformation. Additionally, disinformation created using these methods should be considered in the context of content manipulation and within echo chambers, environments where content is amplified through repetition, thus forming interest groups. In the realm of journalism, investigators, law enforcement agencies, scientists, educators, or any individual using media, a coordinated strategy is essential to combat all forms of disinformation. This is because it cannot be expected that all segments of society will independently adopt a critical approach, discern intent, and verify the accuracy of content (Corbu et al., 2020).

Regarding public media services and their role in countering disinformation, Horowitz, Cushion, Dragomir, Gutiérrez Manjón, and Pantti emphasize three key dimensions: contextual, content, services, and commentary. Each of these dimensions should be addressed separately. Given that disinformation poses a significant threat to democracy, the development of appropriate educational content is necessary. This assertion finds support in numerous previous studies that have underscored the severity of these threats, particularly concerning young people. For instance, Howard, Neudert, Prakash, and Vosloo point out that disinformation, disseminated through human actions, bots, and paid organized groups like troll factories, is used for malicious purposes such as gaining political influence, financial gain, approval of ideas, and popularity (Howard et al., 2021). Particular attention must be given to social networks and platforms that play a crucial role in spreading disinformation, prompting discussions about platform regulation. The importance of self-regulation and encouraging these platforms to be more accountable in addressing disinformation is growing (Horowitz et al., 2020).

The study involved 651 participants, primarily young individuals employed by Croatia's Ministry of Internal Affairs. Questionnaires were used to collect data on demographics,

attitudes toward disinformation, and internet usage. Data analysis was performed using SPSS version 25.0.

Given the above, this research paper poses a question about the perceptions, attitudes, and behaviours of the younger population, who typically possess higher digital and media literacy, regarding internet disinformation. The primary objective is to gauge the extent to which they recognize and are informed about disinformation and to identify habits that reduce vulnerability to disinformation manipulation. The study also aims to detect any differences in these aspects based on the respondent's level of education. The ultimate goal is coordinating an appropriate educational program with the necessary learning outcomes through international institutional collaboration. This underscores the significance of addressing the disinformation issue in the digital age.

The specific research questions are as follows: Is there a correlation between the perception of how often disinformation occurs and the verification of information accuracy? Is there a link between the frequency of social media use and the verification of information accuracy? Are there differences in the perceptions of two distinct groups of respondents (university students and high school students, including those enrolled in courses) concerning their experiences with cyber threats and their views on the influence of disinformation's strength? To address these questions, the study utilizes survey, comparative, and descriptive methods and correlation analysis.

The techniques employed in this study include the survey method, comparative method, descriptive method, and correlation analysis. The collected data were analyzed using the statistical software SPSS version 25.0. The research hypothesis posited that a statistically significant relationship exists between the perception of how often disinformation occurs and the verification of information accuracy. Additionally, it hypothesized a statistically significant distinction between the groups of high school students and university students concerning their encounters with cyber threats and their perceptions of the influence of disinformation (Howard et al., 2021).

2. METHOD

2. 1. Participants and procedure

The research was conducted on a sample of 651 respondents, where the sample consisted of 243 (38%) women and 405 (62%) men. The appropriate sample consisted of university students at the University of Applied Sciences in Criminal Investigation and Public Security and high school students attending the Josip Jović Police School at the Police Academy – The First Croatian Police Officer, including participants of the course for obtaining a high school qualification for the police profession. Most respondents, 467 (72 %) were aged 17 to 27, while 157 (24 %) were aged 28 to 37. The least respondents, 27 (4%) were older than 37 years. In terms of employment, 581 (89 %) respondents are also employed by the Ministry of the Interior of the Republic of Croatia, and the majority of respondents in the group of students, 185 (67 %), attend part-time studies. The average grade of the previous class or study year of all respondents was 4.09. The majority of respondents, 225 of them (34%), lived in towns with a population of 2,001 to 10,000. This is followed by respondents, 179 of whom (27%)

are from towns with 10,001 to 100,000 inhabitants. There were 172 (26%) from towns with up to 2,000 inhabitants, while the least number of respondents, 76 (12%), were from towns with more than 100,000 inhabitants. The largest number of respondents from the group of students who had English as a foreign language stated that they knew it at the B2 level, while most respondents from the group of high school students stated that they knew it at the B1 level. The research was conducted at the University of Applied Sciences in Criminal Investigation and Public Security in March and April 2023 and is part of Erasmus + KA220-HED - Cooperation partnerships in higher education (2022/2025) and represents one of the tasks within the Erasmus+ project "Cooperation on to the development of a joint curriculum on the fight against hybrid threats - HYBRIDIC". A positive opinion of the Ethics Committee of the University of Applied Sciences in Criminal Investigation and Public Security and the Agency for Science and Higher Education preceded the implementation of the research. The participants, with informed consent, filled out the questionnaire in an online form as part of regular classes at the University of Applied Sciences in Criminal Investigation and Public Security and the Josip Jović Police School. The creation of the questionnaire and its implementation were carried out by members of the project team, one of whom is a psychologist (University of Applied Sciences in Criminal Investigation and Public Security, 2023).

2. 2. Instruments

For the purposes of this research, 3 questionnaires were constructed: socio-demographic data, attitudes and beliefs about disinformation and behaviour on the internet.

The socio-demographic questionnaire consisted of 11 questions that asked: age, gender, occupation, years of service, type of work in the Ministry of the Interior, year of study, grade point average, place of residence and level of knowledge of the English language.

The Attitudes and Beliefs about Disinformation questionnaire consisted of 42 items that were divided into 4 subscales: impact of disinformation, purpose of creating and disseminating disinformation, recognition of disinformation and frequency of disinformation in the media. On the first two scales, participants answered the questions using a 5-point scale (1-totally disagree, 5-totally agree). In the third subscale, participants answered the question, "In your opinion, what percentage of information, in different media, media areas and different social networks, is disinformation?" using a scale of 0-100%. The calculated reliability of the internal consistency type is acceptable, and for the scale of the influence of disinformation is Cronbach $\alpha = 0.854$; for the scale of the purpose of creating and spreading disinformation is Cronbach $\alpha = 0.723$; for the scale of recognizing disinformation is Cronbach $\alpha = 0.660$ and for the scale, the frequency of disinformation in the media is Cronbach $\alpha = 0.938$., **(Polytechnic of Criminology and Public Security, 2023).**

The Internet Behavior questionnaire consisted of 38 items that were divided into 4 subscales: security protection, protection from disinformation, negative experiences on the internet, use of social networks and internet portals. On the security protection and disinformation protection scales, participants answered questions using a 5-point scale (1 – never, 5 – almost always). The particles consisted of recommended behaviours/methods for security protection (e.g. "I regularly change passwords") and protection against disinformation on the Internet (e.g. "When I come across some information, news, content on the internet: I

check the credibility of the author of the content"). The scale of negative experiences on the internet consisted of a list of items corresponding to different methods of cyberattacks (e.g. "Have you been the target (victim) of a cyberattack via virus, identity theft, card fraud", etc.) to which participants answered using a scale of 4 degrees (1 - never, 4 - often). The use of social networks and internet portals scale consisted of multiple-choice questions that examine the use of different social networks and internet portals, the frequency of their use using a 5-point scale (1 – I do not use every day, 5 – more than 10 times a day) and daily the time spent on them using a scale of 5 degrees (1 – up to 15 minutes, 5 – more than 2 hours). The calculated reliability of all subscales is acceptable, and for the scale of protection of security is Cronbach α = 0.825; for the scale of protection from disinformation, Cronbach α = 0.861; for the scale of negative experiences on the internet, Cronbach α = 0.865, for the scale use of social networks and internet portals Cronbach α = 0.735, (University of Applied Sciences in Criminal Investigation and Public Security 2023).

3. RESULTS AND DISCUSSION

Regarding the variable Checking the truth and authenticity of the information, in the group of students, none of the social-demographic variables correlates significantly with it; however, as shown in Table 1, it significantly positively correlates with the probability of using security protection methods (r=0.410, p< 0.01).

Table 1: Correlation between verifying the veracity of information, likelihood of using security protection methods, and experiences of cyberattacks

	1.	2.	3.
1. Victim/target of a cyber attack	1	-.199**	-.063
2. Probability of using a security protection method		1	.410**
3. Checking the truth of the information			1

* p<0.05
**p<0.01

Student participants who are more likely to use methods to verify the truth and authenticity of information are also more likely to use methods to protect security. Furthermore, negative experiences with security on the Internet are negatively significantly related to the probability of using security protection methods (r=-0.199, p<0.01), which means that people who are more likely to use security protection methods have fewer negative experiences with cyberattacks on the internet. Negative experiences with cyberattacks on the internet are not associated with the likelihood of using methods to verify the truth and authenticity of information.

Regarding the variable Informed about disinformation and the variable related to the perception of other people's information about disinformation, the results in Table 2 show that verifying the truth of the information is positively significantly related to being informed about disinformation (r=0.354, p<0.01), which shows that student participants, who they

believe that they are more informed about disinformation, they are more likely to use methods of verifying the truth of the information.

Table 2: Correlation between being informed about disinformation, verifying the veracity of information, and the perception of others being informed about disinformation

	1.	2.	3.
1. I am aware of the disinformation	1	.035	.354**
2. People are informed about disinformation		1	-.037
3. Checking the truth of the information			1

* p<0.05
**p<0.01

Checking the veracity of information is positively and significantly related to the perception of the frequency of disinformation in the media (r=0.181, p<0.01) and on social networks (r=0.253, p<0.01). Participating students who believe that there is more disinformation in the media and on social networks are more likely to use methods of verifying the veracity of information. As expected, the perception of the frequency of disinformation in the media and on social networks is positively and significantly correlated (r=0.547, p<0.01), as shown in Table 3.

Table 3: Correlation between verifying the veracity of information and the perception of the frequency of disinformation in the media and on social networks

	1.	2.	3.
1. The frequency of disinformation in the media	1	.547**	.181**
2. Frequency of disinformation on social networks		1	.253**
3. Checking the truth of the information			1

* p<0.05
**p<0.01

The results presented in Table 4 show that none of the variables of the frequency and amount of use of social networks and internet portals among the group of students correlates with the variable of checking the veracity of information.

Table 4: Correlation of the frequency and amount of use of social networks and internet portals with the variable of verifying the truth of information

	1.	2.	3.		4.	5.	6.	7.
1. How often do you go to social networks	1	.955**	.138*		.121*	-.078	-.136*	.074
2. How much time do you spend a day on social networks?		1	.220**		.195**	-.073	-.133*	.071
3. How often do you visit internet portals?			1		.913**	.174**	.137*	-.052

4. How much time do you spend daily on internet portals?				1	.202**	.113	-.037
5. How often do you share content on social networks?					1	.522**	-.040
6. How often do you post your own content on social media?						1	-.081
7. Checking the truth of the information							1

* p<0.05

**p<0.01

When comparing the two groups of participants, the group of students and the group of high school students with included participants of the police officer course, the statistical analysis of the sample comparison shows that there is no statistically significant difference between the samples in terms of the perception of the frequency of disinformation in the media (t=1.0, p=0.318). There is also no statistically significant difference between the sample groups with regard to the perception of the frequency of disinformation by type of media area (t=0.148, p=0.882).

Table 5: Comparison of sample groups regarding subscales of the attitudes and beliefs about disinformation questionnaire

	Group	N	M	Sd	t	p	Cohen d
PERCEPTION OF THE FREQUENCY OF DISINFORMATION IN THE MEDIA	High school	373	0.55	0.193	1.000	0.318	/
	University	278	0.54	0.165			
PERCEPTION OF THE FREQUENCY OF DISINFORMATION BY MEDIA AREA	High school	373	0.56	0.204	0.148	0.882	/
	University	278	0.56	0.169			
PERCEPTION OF THE FREQUENCY OF DISINFORMATION ON SOCIAL NETWORKS	High school	373	0.61	0.217	1.566	0.118	/
	University	278	0.58	0.192			
USE OF METHODS TO PROTECT AGAINST DISINFORMATION	High school	373	3.12	0.869	1.235	0.217	/
	University	278	3.04	0.790			
USE OF METHODS TO PROTECT SECURITY AND PRIVACY ON THE INTERNET	High school	373	3.55	0.621	0.184	0.854	/
	University	278	3.54	0.529			
EXPERIENCES OF CYBERATTACKS ON THE INTERNET	High school	373	1.20	0.428	-3.470	0.001	0.289
	University	278	1.32	0.402			
PERCEPTION OF THE STRENGTH OF THE INFLUENCE OF DISINFORMATION	High school	373	3.81	0.665	-3.947	0.000	0.310
	University	278	4.00	0.554			
RECOGNIZING AND BEING INFORMED ABOUT DISINFORMATION	High school	373	3.71	0.709	2.507	0.012	0.202
	University	278	3.57	0.672			

Given that both groups of respondents most often use social networks to find information, a comparison of their perception of the frequency of disinformation on social networks is also presented, and the results show that there is no statistically significant difference between the sample groups with regard to the perception of the frequency of disinformation on social networks (t=1.566, p=0.118).

It is interesting that the results showed that there is no statistically significant difference between the sample groups regarding the use of methods to protect against disinformation (t=1.235, p=0.217) as well as regarding the use of methods to protect security and privacy on the Internet (t=0.184, p=0.854). However, a statistically significant difference was found between the sample groups with regard to the experiences of cyberattacks on the Internet (t=-3.470, p=0.001, with a small effect size of d=0.289), so the group of students had more negative experiences on the Internet regarding cyberattacks than what a group of high school and course participants had. Such a result may indicate a moderating effect of the age variable.

There is also a statistically significant difference between the sample groups with regard to the perception of the strength of the influence of disinformation (t=-3.947, p=0.000, with a small to medium effect size of d=0.310), and the results show that the group of students assigns a more significant influence to disinformation on the individual and social events compared to the group of high school students and course.

The difference between the sample groups regarding the perception of one's own ability to recognize disinformation and being informed about the dangers and ways of recognizing disinformation is statistically significant. The group of participants of the secondary police school and the course achieved higher results on the mentioned subscale (t=2.507, p=0.012, with a small effect size of d=0.202). The analysis was not performed on separate variables of this subscale, and no aspect was determined in which the difference between the sample groups was evident.

Correlation analysis of the relationship between age and the subscale of the questionnaire showed a significant relationship with three variables: age and the victim of a cyber-attack (r=0.173), age and the impact of disinformation (r=0.103), age and recognition and awareness of disinformation (r=-0.121). These are very low correlations, with values lower than 0.2. However, these are also the same variables that proved to be significant in comparing sample groups, which indicates that age can at least partially explain the significant differences obtained between sample groups.

There is also a statistically significant relationship between age and four variables that examine the amount of use of Internet portals and social networks. These variables are: How often do you go to social networks? (r=0.119), How much time do you spend on Internet portals per day? (r= - 0.089), How often do you share content on social networks? (r = - 0.0123) Moreover, How often do you post your own content on social networks? (r = - 0-.143). These are very low (negligible) correlations with values lower than 0.2.

That young people prefer to get information through social networks compared to traditional media was confirmed by the latest research on the young Mexican population, conducted by Galarza-Molina and the research on the young African population conducted by Camara, Banu and Abeck (Galarza-Molina, R. 2023).

A study conducted by Tynes Brendesha, Stewart, Hamilton, and Willis revealed that the majority of respondents initially demonstrated a basic or "mastered" level of understanding

when it came to interpreting search results and assessing website trustworthiness (Tynes, B. M., Stewart, A., Hamilton, M., & Willis, H. A. 2021). However, there was a need for further engagement to enhance competencies related to critically evaluating online content.

Pérez-Escolar, Ordóñez-Olmedo, and Alcaide-Pulido in their work on "Fact-Checking_ Skills_And_Project-Based Learning about Infodemic and Disinformation" emphasize the crucial role of education in facilitating a better grasp of contemporary challenges related to disinformation (Pérez-Escolar, M., Ordóñez-Olmedo, E., & Alcaide-Pulido, P. 2021). They suggest that educational activities should address deficiencies and the risks of disinformation among young people through project-based teaching methods.

In addition to the above, Van der Linden et al. underscores the importance of proposing solutions that address students' vulnerability to disinformation (Van der Linden S, Roozenbeek J, Compton J. 2020.).

Astuti, Giri, and Hidayah propose that fact-checking training and teaching methods be revised in the fight against disinformation. They found that an innovative approach involving web drama series had a positive effect on older respondents, but younger individuals were not able to perceive the role of journalism as an essential element in verifying information. They recommend using educational videos with a style that resonates with popular culture (Astuti, S. I., Giri, L., & Hidayah, N. (2020).

The study by Sachdeva and Tripathi, focusing on young Indian social media users, emphasizes the necessity of fostering critical thinking within the educational system. They base their findings on the UN Department of Economics and Social Affairs on youth documents (Sachdeva, P., & Tripathi, D. 2019).

Kaufman, in his work on "Civic Education in a Fake News Era: Lessons for the Methods Classroom," stresses the importance of educating students about disinformation and fake news through project-based teaching while also emphasizing the development of a critical approach (Kaufman, C. 2021). In his study, Dhiman shares a similar perspective (Dhiman, D. B. 2023).

The study of children in Finland, conducted by Vartiainen, Kahila, Tedre, Sointu, and Valtonen, highlights the need for a more comprehensive understanding of disinformation as a task for the educational system, in line with the recommendations made by most of the authors mentioned here. It also underscores the importance of studying disinformation through courses covering information communication content and machine learning mechanisms, which encompass tracking, profiling, data engineering, and psychometric-based advertising (Vartiainen, H., Kahila, J., Tedre, M., Sointu, E., & Valtonen, T. 2023).

On the other hand, some authors, like Farmer, believe that school librarians should play a pivotal role in addressing disinformation (Farmer, L. S. (2019).

According to the majority of authors and the research presented in this paper, it is advisable to incorporate content that enhances comprehension of the role of digital technologies, particularly social networks that facilitate the dissemination of disinformation, especially among the younger population. This content should be integrated into subjects within the field of information and communication technologies. Consequently, educational materials should encompass knowledge of information verification tools and techniques, including source verification, image and video analysis, metadata analysis, and the significance of addressing disinformation issues in safeguarding the integrity of information and communication infrastructure.

Incorporating knowledge of information verification tools as a learning outcome, which covers skills such as source verification, image and video analysis, and metadata analysis, should be included in the curricula of courses related to information security.

Spurava and Kotilainen, in their research on young people's perception of necessary educational content, report that young individuals consider having a strong understanding of social network algorithms essential for addressing disinformation (Spurava, G., & Kotilainen, S. 2022).

4. CONCLUSION

Disinformation in the digital age is a significant societal challenge due to its intentional manipulation of information to deceive people. Unlike fake news, which can include accidental inaccuracies, disinformation is deliberately crafted to mislead and manipulate public perceptions. Modern disinformation leverages advanced technologies, including AI, to rapidly manipulate various media forms. The European Commission has defined disinformation as false or misleading information intended to harm the public or for profit, distinct from illegal content like defamation or hate speech.

Experts like Iosifidis, Nicoli, and Langmie highlight the threat disinformation poses to democracy, emphasizing its role in spreading authoritarian ideas and influencing public opinion. Disinformation spreads easily in echo chambers and filter bubbles, where ideologically driven content is amplified. Historical analyses, such as Berliner's 1992 study, show that disinformation has long been used to manipulate public perceptions and policies.

The spread of disinformation is facilitated by various actors, including bots, trolls, and automated systems, which can quickly create and spread false narratives. Synthetic media generated by AI further complicates the identification of disinformation, emphasizing the need for coordinated efforts to combat it. Public media services must address disinformation through contextual, content, and service-based strategies.

A recent study investigated the perceptions and behaviours of the younger population regarding internet disinformation, revealing their awareness and habits in recognizing and mitigating disinformation. The research, conducted among university and high school students in Croatia, aimed to develop educational programs to enhance digital literacy and resilience against disinformation.

Key findings include:

- A correlation between the frequency of disinformation and the likelihood of verifying information accuracy.
- There were no significant differences between student groups in their perception of disinformation frequency, but university students reported more negative experiences with cyberattacks.
- There is a need for improved educational content focusing on information verification tools and techniques.

The findings reveal significant correlations between disinformation awareness and information verification accuracy. An inverse relationship was observed between negative experiences with cyberattacks and the use of security protection methods. No significant

differences were detected between high school and university students in their perceptions of disinformation frequency or the use of protection methods, though university students reported more negative experiences with cyberattacks. Age showed minor but noteworthy correlations between the likelihood of being a cyber-attack victim and perceptions of the impact of disinformation.

The study underscores the importance of integrating digital literacy into education, teaching critical evaluation of online content, and understanding the mechanisms behind social network algorithms. Enhanced educational efforts are crucial for building resilience against disinformation and protecting democratic processes.

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Sažetak

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Borba protiv dezinformacija u digitalnom dobu procjena percepcije, validacije praksi i obrazovnih intervencija

U današnjem digitalnom svijetu dezinformacije predstavljaju značajan društveni izazov zbog namjerne manipulacije informacijama s ciljem zavaravanja publike (Iosifidis & Nicoli, 2019.). Za razliku od lažnih vijesti, koje mogu uključivati slučajne pogreške, dezinformacije su namjerno osmišljene kako bi iskrivile stvarnost i utjecale na javno mnijenje (Langmie, 2021.). Korištenje naprednih tehnologija, poput umjetne inteligencije za promjenu teksta, glasa, slika i videozapisa pojačava utjecaj modernih dezinformacija.

Izvješće Europske komisije iz 2018. definira dezinformacije kao lažne, netočne ili obmanjujuće informacije stvorene s namjerom nanošenja štete javnosti ili stvaranja dobiti, isključujući nezakonite sadržaje poput klevete i govora mržnje (Europska komisija, 2018.). Dezinformacije predstavljaju prijetnju demokratskim sustavima promicanjem autoritarnih ideologija (Iosifidis & Nicoli, 2019; Langmie, 2021), osobito unutar ideološki homogenih zajednica poznatih kao *echo chambers* (Corbu et al., 2020). Povijesni primjeri, poput onih koje je citirao Berliner 1992. u vezi s obrazovnim reformama, pokazuju sposobnost dezinformacija da oblikuju javnu percepciju i politiku (Berliner, 1992.).

Dezinformacije se šire botovima, farmama trolova i ciljanim oglašavanjem, često stvarajući iluziju vjerodostojnosti jer potječu iz više izvora (Howard et al., 2021.). Pojava sintetičkih medija generiranih umjetnom inteligencijom dodatno komplicira napore za otkrivanje i suzbijanje dezinformacija.

Javni medijski servisi ključni su u borbi protiv dezinformacija pružanjem konteksta, sadržaja i pouzdanih usluga (Horowitz et al., 2020.). Razvoj obrazovnih programa koji mlade ljude opremaju vještinama prepoznavanja i suprotstavljanja dezinformacijama je ključan (Howard et al., 2021.).

Ovo istraživanje istražuje percepcije, stavove i ponašanja mladih ljudi, posebno studenata i srednjoškolaca, u vezi s internetskim dezinformacijama. Istražuje odnos između svijesti o dezinformacijama, točnosti validacije informacija, upotrebe društvenih medija i iskustava s kibernetičkim prijetnjama. U istraživanju se koriste ankete, komparativne i deskriptivne metode, dopunjene korelacijskom analizom.

Studija naglašava važnost obrazovnih inicijativa za poboljšanje sposobnosti prepoznavanja dezinformacija i kritičkog mišljenja. Podržava korištenje projektnog učenja i inovativnih metoda podučavanja za rješavanje ovih problema (Pérez-Escolar i sur., 2021.; Van der Linden i sur., 2020.). Uloge edukatora i knjižničara u obrazovanju o dezinformacijama treba proširiti (Farmer, 2019; Kaufman, 2021).

Rješavanje problema dezinformacija u digitalnom dobu zahtijeva koordinirani obrazovni pristup i međunarodnu suradnju kako bi se razvili nastavni planovi i programi koji jačaju sposobnost mladih da se odupru pogrešnim informacijama.

Ključne riječi: dezinformacija, digitalno društvo, društvene mreže, validacija informacija, kibernetička sigurnost, obrazovanje, informacijska pismenost, društveni mediji, javni diskurs.

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