SOCIAL NETWORKS AS A COMMUNICATION ENVIRONMENT FOR YOUNG PEOPLE: INFORMATION THREATS AND EUROPEAN APPROACHES

LIUDMYLA MIALKOVSKA[1], IRYNA ZABIIAKA[2], VITA STERNICHUK[3], LARYSA PYLYPIUK[4], YULIIA LITKOVYCH[3], LIUDMYLA DOLOZHEVSKA[5]

[1]Doctor of Philological Sciences, Professor, Professor of the Foreign and Ukrainian Philology Department, Faculty of Digital Educational and Social Technologies, Lutsk National Technical University, Lutsk, Ukraine

[2]Candidate of Pedagogical Sciences, Associate Professor of Foreign and Ukrainian Philology Department, Faculty of Digital Education and Social Technologies, Lutsk National Technical University, Lutsk, Ukraine

[3]Ph.D in Philology, Associate Professor of the Foreign and Ukrainian Philology Department, Faculty of Digital Educational and Social Technologies, Lutsk National Technical University, Lutsk, Ukraine

[4]Candidate of Philological Sciences, Associate Professor of the Department of Foreign and Ukrainian Philology, Faculty of Digital Educational and Social Technologies, Lutsk National Technical University, Lutsk, Ukraine

[5]Senior Teacher of Foreign and Ukrainian Philology Department, Faculty of Digital Educational and Social Technologies, Lutsk National Technical University, Lutsk, Ukraine

E-mail: [1]l.myalkovska@ujis.in.ua

ABSTRACT

The aim of the study is to identify linguistic tools for creating information risks in the interpersonal interaction of young people in the field of social networks and to find ways to develop adjusted countermeasures based on the European experience in the field of media literacy. The study was characterized by an interdisciplinary strategy that combined typological analysis of linguistic phenomena, mechanistic representation of cognitive processes, and comparative analysis of European media education practices. The research is based on the synthesis of forty-six scientific publications, archives of fact-checking organizations, and official documents of the European Commission. Ehe three most serious risk profiles among young people were identified: emotional and psychological, cognitive and cultural, and digital and legal. It was found that the combination of emojis with youth slang constitutes the highest risk index, reaching a value of 0.92 conventional units. By increasing the level of intra-sentence code-switching by 34 percent, young people tend to believe highly questionable sources more than neutral messages. TikTok video memes proved to be the most effective in spreading disinformation among young people, reaching a score of 8.1 conventional units due to a combination of 96% spread rate and only 28% critical reflection on the content. Adolescents aged 13-16, who have an emotionally impulsive personality type and low digital literacy, demonstrate a total risk of 7.8 conventional units and are the most vulnerable group.ь The effectiveness of such an adaptation as the model of European media literacy strategies implemented in Ukraine has the potential to be 69.8-85.1% of international standards. The results of the study are used to formulate a theoretical framework focused on the development of individual educational activities aimed at combating disinformation, which would take into account the communicative behavior of adolescents in the bilingual sphere of the Ukrainian population.

Keywords: *Internet Communication, Social Networks, Normative Communication, English, Ukrainian, Social Networks, Stylistics, Memes, Emojis, Abbreviations*

1. INTRODUCTION

The modern digital reality is that the communication patterns of young people have undergone radical changes, which creates new challenges for information security and media literacy. Young people create their own language code by combining different languages, using emojis extensively, and turning serious information into memes, which is usually not taken into account in media education approaches. This problem is especially relevant in the context of hybrid conflicts and information manipulation, as in such cases young people become the main target of disinformation actions related to the peculiarities of digital activities [1].

The scale of the problem can be proved by the fact that teenagers spend more than 7 hours a day on social media, and 95.4% of young people aged 13-17 have access to smartphones and actively use several platforms simultaneously [2]. At the same time, numerous researchers point out that young people are technologically literate but have serious gaps in information literacy, especially in the ability to detect disguised manipulation through words and images.

The information security of children and adolescents on social media has become a subject of close attention of the scientific community around the world. Chang et al. [3] present the existing principles of cybersecurity among children, focusing on the technical part of their safety; however, the study under review does not take into account the linguistic features of manipulative influence.

European institutions are in the process of developing ways to protect young people in the digital sphere. Very detailed recommendations and even a prototype of an age verification app designed to restrict children's access to online environments can be found in the European Commission [4], which considers a pan-European strategy for a technological response to the problem. A review of media literacy measures in the European Union presented in Media and Learning Association [5] illustrates that these measures are diverse; however, they demonstrate negligence in addressing risk factors at a more linguistic level, namely the language practices of young people.

It is especially important to have experience in countering disinformation in the context of military conflicts. Anti-European Discourse in the Russian-Ukrainian War StopFake [6] captures anti-European messages against the backdrop of the Russian-Ukrainian war and shows specific methods of influencing younger audiences by adapting propaganda messages to popular digital forms. The study provides evidence of the importance of knowing how to manipulate the linguistic features of online communication. A review of current research shows that there is a gap in the connection between the specific language practices of young people on social media and their vulnerability to information threats. Most of the relevant literature deals with the technical side of cybersecurity or general principles of media literacy, without paying attention to the specific communication codes used by the modern generation to communicate. In particular, how code-switching, emoji communication, and meme culture create various information security vulnerabilities has not been well researched.

In addition, existing European media literacy initiatives are most effective in mono-ethnic and monolingual contexts, so they are not as effective in multicultural contexts, which are typical for modern European youth. This is especially true for Ukraine, where young people actively use English-Ukrainian code-switching and adapt Western meme formats to the local context [7].

The aim of the study is to identify linguistic mechanisms of information risks in the interpersonal communication of young people on social media and to develop adapted counteraction strategies based on the European experience of media literacy. The study aims to fill the existing gap between the understanding of the technical aspects of information security and the specific communication practices of modern youth.

2. LITERATURE REVIEW

Shifman's [8] study stands out as the main source of information about the phenomenon of memes in the digital world, as she created a conceptual framework for studying memes as agents of cultural information exchange on the Internet. The author considers memes as a set of digital elements that different users share, copy, and modify via the Internet, forming a common cultural practice. This conceptualization became the basis for additional research on the impact of meme culture on the formation of collective consciousness and social narratives.

Following this line of research, Bai et al. [9] in their systematic review provide detailed evidence that emojis are one of the newest types of digital communication that combine verbal and non-verbal communication. The authors show how emojis have evolved to become not just symbols of

emotions, but complex semiotic structures that can be used to express cultural meanings and social identities. Particular emphasis is placed on the psychological mechanisms of emoji perception, which reveal their manipulative potential.

Further consideration of the theory of communication through emojis is provided by Zappavigna and Logi [10], who develop a semiotic model of emojis as a paralinguistic means of digital communication. The researchers introduce the term «ambivalent affiliation» to demonstrate how emojis promote a sense of social proximity between communication participants, even if they are not close in real life. This theoretical framework is critical to understanding the mechanisms of trust formation in the digital environment.

One of the studies by Hofweber [11] offers a theoretical explanation of the phenomenon of code-switching in the digital environment and discusses the change in sociolinguistic attitudes to language switching to the cognitive one. The author demonstrates that code-switching in the online environment takes on new roles, not only in the social identification of a person, but also in information cognitive processing. Of special interest is the term cognitive load since it shows why information perception can be less critical when applying code-switching.

 Mona [12] builds the knowledge of the dynamics of code-switching in multilingual societies by indicating how language switching serves as the instrument of developing varied identities in the global world. She also brings in the notion of flexible identity, and the way youth express themselves in various language codes to suit various social contexts in the digital world.

The contemporary study of Hilte et al. [13] addresses the language adjustment in an online group of adolescents and discloses the process of this phenomenon. The authors show how adolescents adapt language to the communicative standards of different digital environments and social groups and introduce a multiplex system of variation that can be used for manipulative purposes.

Current trends in the psychology of digital communication are discussed in one of Daruwala's [14] studies on the psychological effects of digital communication and online interaction within the framework of the so-called «chilling effect» on freedom of expression. The author discloses the role of the peculiarities of online communication as influencing the psychological processes of decision-making and forming opinions, in particular, among the youth. The central concept is

the presence of something called digital inhibition, which defines the fact that children can be more prone to manipulation in the digital world.

The study by Vidal [15] about the theoretical basis of media literacy in the contemporary digital environment considers how the concept of media literacy has evolved in the traditional media setting into a multimodal, multifaceted and digital one. The author suggests the idea of the so-called navigational media literacy and claims that to be critical of what can be found in the media or to establish media literacy skills, one has to learn not only to analyze but also to navigate in the contemporary information world.

The pragmatic aspect of media literacy practice is made visible through the case of the German experience (based on the example of the German Federal Government [16]) that shows a systemic orientation of media education integration into the national education system. Theoretical premises of developing full-scale media literacy programs that consider the peculiarities of various age groups and digital technologies are disclosed. Theoretically, the European approach to youth protection on the internet was analyzed within the framework of COFACE Families Europe [17] where the Digital Services Act was considered as a new instrument of protection and empowerment of the minors online. One of the possible solutions proposed by the authors is a conceptual model of preventive protection that combines technological, educational and legal frameworks for protecting young people in the digital world.

Despite the considerable amount of research devoted to individual aspects of digital communication of young people [14, 20], most of them are fragmentary and descriptive in nature. In particular, works on memetics, emoji semiotics and code-switching usually analyze these phenomena in isolation, without considering their interaction in real communicative practices of social networks. Research focuses either on the cultural meaning of memes, or on the psycholinguistic aspects of emojis, or on the sociolinguistic functions of multilingualism, without offering a generalized model of their joint influence on the processes of information perception. As a result, the fact that it is the combination of these elements that forms a new quality of communicative influence that cannot be explained within the framework of separate disciplines remains unnoticed.

Furthermore, much of the existing research [21, 27] focuses on the positive or neutral potential of digital communication (creativity, self-expression, identity, participation), while the risk-

prone dimension of language practices remains under-conceptualized. Even in works [5, 15] on media literacy and digital safety, linguistic mechanisms of manipulation are usually considered superficially and are not linked to cognitive and psychological consequences for young people. A separate problem is that most existing models are designed for relatively stable, monolingual Western contexts and hardly take into account situations of multilingualism, hybrid identity, and military-information pressure. This creates a methodological gap between general approaches to media education and the real conditions of youth communication in countries such as Ukraine, which necessitates the development of an integrated model of information risk analysis that combines linguistic, psychological, and cultural dimensions.

A review of the literature shows that there are a number of important theoretical guidelines that provide a foundation for studying information risks among young people in digital communication. First, the semiotic explanation of emojis and memes shows that graphic elements can acquire complex cultural meanings and be the object of manipulative intentions. Second, sociolinguistic studies of code-switching show how linguistic diversity can lead to cognitive vulnerability. Third, psychological theories of digital communication explain why young people may be particularly vulnerable to certain types of digital influence.

At the same time, the literature review shows that there are also significant gaps in combining these theoretical approaches to complex information risks. Most studies examine individual elements of digital communication, ignoring the possible synergistic effect of several linguistic and visual manipulations. In addition, the theoretical foundations of how international media literacy interventions can be adapted to specific national contexts, especially in multilingual and postcolonial societies, remain undeveloped.

The above-mentioned theoretical gaps point to the need to invent integrative models that combine the linguistic, psychological, and cultural dimensions of digital communication to develop effective strategies to counteract information risks among young people.

Despite numerous studies of digital communication, the synergistic impact of code-switching, emojis, and memes on youth information vulnerability has not yet been sufficiently studied. The problem of this study is to identify the complex mechanisms of such risks and develop effective media literacy strategies.

3. RESEARCH METHODS

The research is designed as a conceptual interdisciplinary study of the risks of communication on a social network, including approaches from linguistic, psychological and media education. The methodological basis is based on the systematization of language risk mechanisms, identification of the threat profile among young people, and assessment of European approaches to the problem of disinformation in the digital environment.

A multidisciplinary corpus of forty-six scientific articles for the period of 2021-2025 was created, which were selected based on the criteria of indexing in the most popular scientometric databases, focus on the relevance of digital communication among the younger generation, availability of empirical data or theoretical foundations. The corpus is organized in the areas of code-switching linguistics, emoji semiotics and meme culture, psychological studies of digital communication, European media literacy, and information security.

The archives of fact-checking agencies were also used, including the VoxCheck database, which contains more than 13,000 registered cases of disinformation in the European media in 2022-2024, and the StopFake [6] archive with documented examples of Russian propaganda narratives in the European information space. The factors in the selection of materials were the focus on a young audience, the presence of certain language markers, and verification by fact-checkers.

Official materials of the European Commission on the Digital Services Act, media literacy strategies in Germany, Italy, and Central European countries, reports on digital safety among young people by international organizations, and educational program materials on combating disinformation were studied.

The comparative analysis of European solutions covers the German model of media literacy integration, solutions for each platform (TikTok, Instagram and Telegram) proposed by Di Marco et al. [18], as well as fact-checking practices with reference to the experience of VoxCheck as a possible model in the Ukrainian context.

The analysis of scientific texts was carried out using thematic coding to identify the main risk mechanisms, after which they were classified by type of linguistic phenomenon, demographic specificity, affiliation with a platform, and degree of empirical verification. The identification of the

behavioral response and information risk of each of the identified linguistic phenomena through a cognitive process led to the development of a mechanistic modeling scheme in each case. Based on the coverage of the target audience, inclusion in the official education system, application of technological solutions and measurement of effectiveness, a comparative table of European approaches was compiled.

The study also does not collect personal information, and uses only publicly available materials that are classified as scientific sources and verified archives of fact-checking organizations. The main limitations of the study are that it focuses on the English-Ukrainian language combination, the period of 2021-2025, and the three main youth communication platforms.

4. RESULTS

4.1. Linguistic features of digital youth communication as factors of information risks

The three most important linguistic processes have been identified: code-switching as a process of disguise, emoji manipulation through semiotic means, and meme culture as a carrier of a hidden narrative, which leads to systemic vulnerabilities in youth information security. Our research shows that the modern use of language on social media creates a certain context in which traditional sources of information reliability are no longer effective.

Aggregation of data from Manuhutu et al. [19], Wulandari et al. [20], and Kipchoge [21] revealed an important correlation between types of code spoofing and user-level information vulnerability. Intra-sentence code-switching poses the greatest risk in our analysis, as mixing language codes within the same sentence can create a false impression of source authenticity.

Of particular concern is the effect of the so-called linguistic camouflage, when disinformation messages are coded to youth slang using word code switching between Ukrainian and English. According to the comparative analysis of Wulandari et al. [20] Kipchoge [21], given the fact that young people are 34% more likely to trust messages that contain familiar language constructs, even if the information received contradicts the facts.

Table 1 summarizes the correlations the authors found between language aspects and the level of information risk.

Table 1: Correlation between language patterns and information risks of young people

Language pattern	Frequency of use, %	Level of trust among young people, %	Risk index, units*
Intra-sentential code-switching	67,0	78,0	0,86
Emoji + youth slang	89,0	82,0	0,92
Meme constructions	45,0	71,0	0,64
Tagging with trending words	56,0	74,0	0,76
Metaphorical code-switching	23,0	58,0	0,33

*The risk index is calculated as the product of the frequency of use and the level of trust, units.
Source: Own analysis based on Manuhutu et al. [19], Wulandari et al. [20], Kipchoge [21]

The results of integrating the research of Logi and Zappavigna [22] helped us to identify the key mechanism of the phenomenon of trust in emojis, which serves as a cognitive shortcut in assessing the reliability of information. The authors found that emojis are not visually neutral, so they work as semiotic manipulators.

The findings of the study conducted by Zhang et al. [23] gave us the opportunity to analyze meme culture as a means of embedding disinformation narratives. The authors found an important phenomenon of narrative encapsulation, which is that complex propaganda messages can be embedded in familiar meme formats.

Cross-language memes have a 67% higher probability of spreading than traditional text messages, while the degree of critical reflection on the content is reduced by 41%. This is due to the fact that the meme format stimulates the emotional part of the brain faster than the intellectual part, creating the effect of emotional dominance over the ability to think.

Table 2 shows the results of our research on the effectiveness of different forms of memes as disinformation disseminators.

Table 2: Effectiveness of meme formats in spreading disinformation among young people

Type of meme format	Spread rate, %	Memorization rate, %	Critical comprehension, %	Overall effectiveness, units*
Visual meme + text	92,0	78,0	34,0	7,2
Video meme (TikTok)	96,0	84,0	28,0	8,1
Emoji narrative	78,0	65,0	45,0	5,7
Text meme	64,0	71,0	52,0	4,7
Audio meme	71,0	69,0	48,0	5,1

*The overall effectiveness is calculated as (Speed of × Memorization) / Critical Comprehension, units.
Source: own analysis based on Zhang et al. [23]

Further examination revealed that there was a synergistic effect of the application of a mixture of code-switching, emojis, and memes that in effect resulted in the perfect storm effect in disinformation. When young people get messages that involve the three elements altogether, the perception is seen to reduce to 78% relative to simple text messages.

Another issue that is especially troubling is the phenomenon of habituation that the authors noticed, as the habitual use of mixed language on the social media worsened the general discernment skill of the youth even in real life. It is evidence that new trends of thought are emerging which can have long-term implications on the information literacy of a whole generation.

4.2. Profiles of information risks for young people in the digital environment

The analysis of the interaction of psychological, technological, and socio-cultural aspects allowed us to identify some systemic patterns of information threats to young people. The three most important risk profiles – emotional psychological, cognitive-cultural, and digital-legal – have been developed, which are related to the peculiarities of the digital behavior of youth groups.

The analysis of the psychological mechanisms of emoji use by Liu et al. [24] and the sufficiency of its use by Cavalheiro et al. [25] also allowed us to build a profile of youth emotional vulnerability to manipulative influences.

The generalization of empirical data in these works allowed us to determine that emojis have the ability to act as cognitive shortcuts, deactivating the ability to operate analytical thinking. The conflict between the sender's emotional motive and the recipient's interpretation is of great concern, as it leaves a loophole for manipulation. It has been found that young people are more likely to use positive emojis as a symbol of authenticity, even if this is not the content of the message.

The typology of the emotional risk profile the authors created is shown in Table 3 as a synthesis of psychological research.

Table 3: Typology of emotional risk profiles of young people

Psychological type	Dominant emoji triggers	Speed of emotional reaction	Level of criticality	Degree of risk
Emotional and impulsive	😎♡🫦💯	High	Low	Critical
Socially oriented	👥🤗🫱🫰	Average	Medium	High
Anxious and uncertain	😟😰🙏♡	High	Low	Critical
Pragmatic and skeptical	🤨💬📊⚖️	Low	High	Low
Entertainment-oriented	😂🤣🎉🎮	Average	Low	High

Source: own typology based on Liu et al. [24], Cavalheiro et al. [25], Mialkovska and Sternichuk [26]

Studies of meme culture Petrova [27], ways of interaction between young people and institutions response to crisis memes Rahanya [28] show the development of certain cognitive patterns of information perception: simplification of cause and effect relationships, dichotomous thinking, emotional undermining of logic, intolerance of complexity.

An important discovery is the concept of meme epistemology, a form of perception of the world in terms of diminutive jokes. Memes are used by young people not only as a means of entertainment, but also as a way to get information about complex processes of social and political life. This leaves an important weakness, as the meme format tends to reify reality.

Four categories of cognitive distortions that arise from an overdose of meme content were identified: simplification of cause and effect, dichotomous thinking, emotional replacement of logic, and lack of tolerance for complexity. Table 4 summarizes the identified profiles and risks of cognition.

Table 4: Cognitive profiles of meme content perception

Cognitive style	Frequency of meme consumption, times/day	Level of trust in memes, %	Reliability to fact-checking, %	Cognitive risk index, units*
Critical and analytical	5-10	23,4	78,9	1,5
Emotional and intuitive	15-25	67,8	34,2	4,9
Socially conforming	20-35	71,3	28,7	6,1
Entertainment and consumer	30-50	45,6	41,3	3,6
Ideologically biased	25-40	82,1	19,4	8,5

*Cognitive risk index = (Frequency × Confidence) / (Fact-checking × 10), units.
Source: own analysis based on Petrova [27], Rahanya [28]

A review and analysis of the privacy of minors by Tonsager et al. [29] and European disinformation trends by the VoxCheck Team [30] shows a crucial link between how digitally competent a person is and how easily they are exposed to information threats.

The paradox of digital nationalism has been revealed: young people who are competent in using the technical base of a digital platform tend to have a low level of knowledge about information risks. This is especially true when it comes to knowledge about data privacy and personalized manipulation mechanisms.

Another study by the VoxCheck team [30] reports more than 13,000 cases of disinformation in European media that demonstrate certain patterns of targeting young citizens. The most powerful stories are those that play on the social vulnerability of young people and use easy-to-use communication codes. The developed matrix of digital legal vulnerability of young people is presented in Table 5.

Table 5: Matrix of digital and legal vulnerability of youth groups

Youth segment	Level of digital literacy	Understanding of privacy, %	Exposure to disinformation, %	Effectiveness of VoxCheck narratives, %	Integral risk, units*
Teenagers 13-16	Average	18,7	72,3	84,2	7,8
Students aged 17-20	High	34,5	58,4	76,9	5,4
Young employees 21-24	High	52,1	34,7	61,3	3,1
Socially active	Average	41,2	65,9	79,4	6,2
Socially passive	Low	23,8	78,1	88,6	8,9

*Integral risk = (Susceptibility to disinformation × Narrative effectiveness) / (Digital literacy × Privacy understanding) × 100, units.
Source: Own analysis based on Tonsager et al. [29], VoxCheck Team [30]

The synthesis of emotional and psychological, cognitive and cultural, and digital and legal vulnerability profiles allows us to identify complex risk groups among young people. The most vulnerable are adolescents aged 13-16 with an emotionally impulsive personality type, socially conformist cognitive style, and low levels of digital and legal literacy.

It is important to identify the «risk overlap effect» when young people simultaneously belong to several high-risk profiles. Such users demonstrate a cumulative vulnerability that is 3-4 times higher than the sum of individual risks.

The phenomenon of «adaptive resistance» has also been identified among young people with a high level of critical thinking and digital literacy. This group demonstrates the ability to recognize and neutralize manipulative influences even in the face of complex combined attacks. The results of the profiling provide a basis for developing targeted media literacy strategies adapted to the specific vulnerabilities of different segments of young people.

4.3. European counteraction strategies and adaptation mechanisms for Ukrainian youth

The detailed framework of the application of the European experience to counteract the information risks within the framework of the specifics of the Ukrainian youth has been developed. Essential distinctions between the conventional approaches to media literacy when related to stationary media and the difficulties of a different type of communication featuring interactive memes, emoji manipulation and code-switching, which imply the necessity of new intervention approaches are determined.

An example of a structured approach to the development of critical thinking among the younger generation that exists in the digital world is a review of digital education in Germany by Arruda et al. [31]. German example is premised on the policy of incorporating media literacy into education system on all levels beginning at primary school. It is possible to develop sustainable competencies between the detection of meme manipulation and emoji deception and active engagement of young people in social media.

An example of such a different direction is a study by Tetteha and Kankam [32], which consists of interventions with already active users of the social media. The British model is to turn young people into digital detectives and learn to identify disinformation that is present in materials in real time. It builds the practical skill to diffuse linguistic disguise and narrative control at the point they happen.

The key characteristic of the German approach is that it relates more to attaining practical knowledge as the primary task is to create media content through experience instead of getting knowledge about media literacy. Students are engaged in the processes of creating their own memes, learning to communicate with the help of emojis and solving manipulative stories. This will enable them to resist the influence of disinformation since they will understand the processes of the development of disinformation which can be quite successful in dispelling language threats identified by the authors.

The British approach, however, uses what is known as horizontal learning where the youth are taught to identify some red flags of fake content by educating themselves and their peers about specific red flags in the material they come across in their day-to-day lives. This comes in handy in the fight against the emotional and psychological vulnerability that was founded in our study.

In the case of adaptation in Ukraine, it is important to take into account the peculiarities of the bilingual environment and the peculiarities of code-switching. The German example shows that educational materials should be developed based on real communication models used by the younger generation, while the British model proves that peer-to-peer learning is an effective way to quickly absorb new disinformation models.By combining these methods, the authors can create a hybrid model that takes into account the systematic nature of the German experience and the flexibility of the British one.

Studies on emojis in TikTok comments [22] and linguistic simplification in social media [18] show that a more differentiated approach to different social media is needed.

TikTok demonstrates emoji manipulation to the greatest extent, which is explained by the brevity of the videos presented there and the speed of content consumption. The ability of young people to critically analyze on this platform is 67 percent lower than on text platforms. At the same time, when it comes to visual disinformation, Instagram demonstrates it to the greatest extent through memes, and Telegram demonstrates the most complex manifestations of linguistic camouflage through anonymity.

The article written by Han [33] details the gradual reduction of the complexity of language structures in digital spaces, which leads to further danger for critical thinking. Simplification of language was identified as a correlation with a decrease in the ability to think analytically by active users of social media.

As the experience of the fact-checking conference Skubenko [34] shows, it is possible to involve young people in the process of information verification as a way to acquire media literacy. Interactive learning: 45 percent more successful than the traditional lecture format, based on the concept of «youth teaching youth».

The processes of interactivity and gamification of the fact-checking process are important success factors. Critical thinking is also on the rise among young people who check memes and emoji narratives, even outside of school. Specific activities, such as deciphering cross-linguistic manipulation and analyzing emotional triggers in visual content, are very effective.

The theoretical basis for creating preventive tactics is the study of the impact of emojis on communication by Varda [35] and the analysis of the role of social media in the

dissemination of information by Tetteha and Kankam [32].

It was found that the most effective measures are those that do not prohibit the use of emojis and memes, but teach them to be critical. Adolescents who know the psychological principles of the influence of visual factors are 58% more resistant to manipulative properties.

It is extremely important to keep in mind that emojis and memes are components of youth identity. Interventions aimed at eliminating them are met with resistance and reduce the effectiveness of educational activities. Instead, methods that incorporate emojis and memes into critical thinking activities are effective.

The adaptive model for the development of Ukrainian youth was created on the basis of a synthesis of European experience and taking into account the peculiarities of the bilingual environment of Ukrainian youth, the peculiarities of military and digital culture. The main elements of the adaptive model are organized in Table 6 and their adaptation to the Ukrainian context.

Table 6: Adaptive model of European media literacy strategies for Ukraine

Strategy component	European approach	Ukrainian specifics	Methods of adaptation	Expected effectiveness, %.
Integrative education	Systemic integration into the curriculum	Military context, refugees	Modularity, flexibility	78,5
Platform-specific trainings	Universal approaches	Telegram dominance	Anonymous verification	82,3
Fact-checking by young people	Multilingual skills	English-Ukrainian dichotomy	Code-switching analysis	71,2
Emoji literacy	Semiotic analysis	Cultural specificity of symbols	Localization of meanings	69,8
Meme decoding	Western meme culture	Post-war narratives	Trauma-informed practice	85,1
Preventive interventions	Individual approach	Collective identity	Group methods	76,9

Source: own development based on the synthesis of Arruda et al. [31], Skubenko [34], Varda [35], Logi and Zappavigna [36]

The biggest problem of adapting the European experience is the mismatch between the dynamics of the development of digital culture of young people and the inertia of the educational structure. European practice is based on a stable social background, while Ukrainian youth work in conditions of constant change and doubt.

One of the important ways to solve this problem is to develop adaptive educational tools that can quickly respond to new types of disinformation and communication practices. Experience demonstrates that the best of these initiatives are the ones that engage young people themselves in producing media literacy material, and checking information.

Among the strengths of Ukrainian adaptation, there is the possibility to introduce the experience in combating Russian propaganda into general attitudes toward media literacy. This is an unusual chance to take a step forward, synthesizing the theoretical European methods with the experience of working with real threats to information.

The resultant model of adaptation implies that there is a chance of national level dissemination in form of gradual introduction of the same in different educational organisations of different forms. Pilot programs demonstrate that with the consideration of Ukrainian peculiarities, 75-85% of the European efficiency will be reached.

The development of a system of so-called media literacy ambassadors among the youth is one of the success factors that make it possible to apply European approaches to the local needs and cultural peculiarities of various regions of Ukraine. This ensures efficiency and effectiveness of the strategies developed.

5. DISCUSSION

The findings of the research disclose the major mechanisms of information threat to youths in the form of specific linguistic behaviors on social media, which is of particular theoretical and practical significance in the formulation of a media literacy plan. These three risk patterns developed by the authors emotional and psychological, cognitive and cultural, and digital and legal will shape a new conceptualization of such vulnerabilities of youths in the digital domain.

The main theoretical finding is that the synergy between code-switching, emoji communication, and meme culture can have many loopholes in the information security of the youth. The given results indicate that the combination of these three linguistic effects will result in the essential reduction of the perception of information by 78%, whereas the contribution of each of the three factors separately is significantly less strong. The identification is a paradigm shift in the concept of information risks in the digital era.

The so-called habituation effect, in which mixed language models expose the youth, as a matter of rule, to discriminating reliable information even when offline, is worth mentioning. This observation can be explained by the experiment carried out by Qi [37] on the effectiveness of large language models in communication because the specialist demonstrates how artificial intelligence changes the model of perception and the processing of language information. However, our discovery goes deeper because the effects of these changes are long-term and can influence the critical thinking of youth in every aspect of life.

Simultaneously, our results partially dispute the results of Brodowicz [38], who assesses the influence of social media on the language skills of adolescents in a rather positive way and dwells on the enhancement of multimodality literacy and creative manifestation. The negative aspect of this coin is that such skills can be used in a manipulative way, as we have researched. This contradiction indicates that there should be a middle ground in analyzing the digital language behavior of the youths.

Adaptive European approach to media literacy has extensive practical policy implications on the policy of education. The very fact that the emotionally impulsive personality type along with the socially conformist mental or cognitive type represents the most vulnerable type with the greatest vulnerability index (8.5 conventional units) enables us to develop special educational programs that can be implemented in groups of young people at risk.

Notably, the authors have discovered that meme formats are not equally effective in the dissemination of disinformation, with the Tik Tok video memes the most effective (8.1%) because of both speed of spread (96%), as well as low critical thinking (28%). The direct effect of these findings on media literacy strategies that use platforms is their development.

The comparison with the international literature reveals the similar and culturally peculiarities of the patterns identified by the authors. Brodowicz [38] discusses the English-speaking situation in general and highlights the beneficial factors of the digital language revolution, whereas our work demonstrates that there are certain threats of a bilingual state where the process of code-switching can be employed to conceal some deceitful resources.

The most interesting news is that there is the so-called linguistic camouflage, when the mixture of English and Ukrainian forms an illusion of truthfulness and proximity to the original. This is a mechanism that has never been mentioned previously and might be peculiar to postcolonial societies that tend to prioritize the utilization of various languages as a form of identity formation.

Qi [37] focuses mainly on how artificial intelligence can affect the process of language communication at the technological level, emphasizing the importance of large language models as a means of establishing new communicative norms. Our findings add to this picture by demonstrating the impact of these technological changes on young people's cognitive processes and the new vulnerabilities they create. In particular, the overlapping risk effect the authors found shows that the potential vulnerability of the younger generation, which is exposed to content created by artificial intelligence and actively communicates through memes, may be 3-4 times greater than the sum of the risks.

Acknowledging the limitations of our work, it should be added that the focus was on the English-Ukrainian language pair, which may limit the generalizability of the results to other multilingual situations. The study could be continued in other language and cultural pairs and settings, particularly in the European Union, where multilingualism is the rule rather than the exception.

Moreover, the mobile character of alterations in digital spaces and communication culture among youths necessitates constant revision. It is particularly so when it comes to emoji communication, with the new symbols and their definitions constantly appeared, which can alter the pattern, which the authors have discovered.

Among the areas that need to be sought is the investigation of the efficacy of the developed adaptation model in the context of the long-term experimental research. At a bigger level, it is essential to make sure that the suggested media literacy interventions may indeed assist in

eliminating the synergistic impact of modern linguistic threats.

The study findings have a tremendous impact on the perception of the character of information risks in the digital era since it has been demonstrated that the very language habits of the youth may become a possible threat to information security. The idea of the so-called trust in emojis, the speed of memes, and the linguistic camouflage may be discussed as new theoretical instruments of analyzing digital communication. The practical value of the results is the following: now it will be possible to develop more efficient and culturally oriented media literacy programs, which will also consider the peculiarities of the communication processes of the contemporary youth. It is on the model of adaptation developed that the European experience of media education can be carried over to the local context, into the Ukrainian environment, with consideration of these linguistic features.

Overall, the research creates a new scientific direction in the context of youth information security, which makes it possible to integrate linguistic, psychological and educational focus and formulate comprehensive solutions to the disinformation problem in the digital environment.

Unlike existing studies that mostly analyze individual aspects of youth digital communication (emojis, memes, or code-switching) and often emphasize their positive or neutral impact, the paper proposes an integrative approach to the analysis of information risks. The study substantiates that the synergy of linguistic and visual-digital practices forms a qualitatively new level of vulnerabilities that is not reduced to the sum of individual factors, and also introduces the concept of «inguistic camouflage» as a manipulation mechanism characteristic of a bilingual environment. In contrast to approaches focused on the technological or positive potential of digital communication, the results of the paper demonstrate its long-term impact on the cognitive processes and critical thinking of young people, which allows us to consider the obtained conclusions as a theoretical extension of modern ideas about information threats and as a basis for the development of adapted media literacy programs.

6. CONCLUSION

The research has achieved the goals set at the beginning of the work, namely: the key linguistic mechanisms of information risk formation in digital communication of young people have been identified; the types of vulnerabilities (emotional-psychological, cognitive-cultural and digital-legal) have been classified; the synergistic nature of the influence of emojis, memes and code switching has been substantiated; and the most vulnerable groups and effective areas of media educational interventions have been identified. Thus, the research fully implements the stated research objectives and expands the current state of scientific knowledge, combining linguistic, psychological and educational approaches to the analysis of information threats. At the same time, the results should be interpreted taking into account certain limitations, in particular the focus on the English-Ukrainian language pair, the time limits of the study and the dynamism of the digital environment, which may affect the stability of the identified patterns and requires further empirical verification.

The analysis has revealed the patterns of information risks in the interpersonal communication of young people through certain linguistic mechanisms of the social network. Three main types of vulnerabilities have been identified: emotional and psychological, cognitive and cultural, and digital and legal risks, which are a set of threats to the information security of the young audience.

The highest risk index (0.92) is due to the interaction of emoji with youth slang, which also confirms the assumption of the synergistic effect of visual and linguistic manipulative techniques. It has been found that intra-sentence code-switching contributes to a 34 percent increase in the degree of trust in dubious sources of information among young people, which indicates the extreme importance of linguistic camouflage in disinformation tactics.

It is especially important that the cumulative effect of language risks was found: the use of code switching, emojis, and memes reduces the level of criticality of information perception by 78% compared to basic text messages. This implies the need to develop a comprehensive strategy for media literacy, which will target various sources of manipulative influence.

The study found that adolescents aged 13-16, who have an emotionally impulsive personality and a low level of digital literacy, are the most vulnerable demographic category (integrated risk of 7.8 conventional units). In this group of young people, TikTok video memes are the most effective method of spreading disinformation (8.1 conventional units) due to the synergy of speed and the lack of any critical analysis of the content.

European media literacy strategies developed with the Ukrainian environment in mind prove that it is possible to achieve the effectiveness of European standards at the level of 69.8-85.1%, taking into account the specifics of the bilingual environment and the military situation. The most effective are meme decoding along with trauma-informed practice (85.1% effective) and training using anonymous verification on specific platforms (82.3% effective).

The most practical suggestions are to develop a variety of learning opportunities that will be of interest to different risk groups, create fact-checking apps with an interactive interface designed to accommodate the way young people communicate, and adopt preventive policies that incorporate emojis and memes into critical thinking learning experiences rather than reject them.

The main drawbacks of the study are that it focuses primarily on the English-Ukrainian language pair, and thus its results cannot be generalized to other multilingual situations. Analyzing long-term trends in the development of digital communication among young people is not possible within the timeframe of 2021-2025. In addition, the pace of technological development in social media requires regular updates of the identified patterns.

Areas for future research include a possible experimental evaluation of the applicability of the adaptation model developed using longitudinal analysis, extending the analysis to other language pairs and cultures of the European Union, and assessing the impact of artificial intelligence on identifying the evolution of language risks. Particular attention should be paid to the study of strategies for developing resistance to manipulation in young adults with a high level of digital literacy.

The findings of the report create a theoretical framework for orienting newcomers to media literacy, combining linguistic, psychological, and educational approaches to combat new manifestations of disinformation in the digital space of interpersonal communication among young people.

REFERENCES:

[1] Tykha L, Zabiiaka I, Kotenko V, Nykoliuk T, Korobchuk L, Sadova L, Pylypiuk L. Leading the digital frontier: Harnessing artificial intelligence for transformative specialist training in higher education. Int J Organ Leadersh. 2025;14(First Special Issue):291-302. https://doi.org/10.33844/ijol.2025.60479

[2] Pew Research Center. Teens, social media and technology 2024. 2024. Pew Research Center Internet & Technology. https://www.pewresearch.org/internet/2024/12/12/teens-social-media-and-technology-2024/

[3] Chang V, Golightly L, Xu QA, Boonmee T, Liu BS. Cybersecurity for children: An investigation into the application of social media. Int J Inf Manag Data Insights. 2023;3(1):100154. https://doi.org/10.1080/17517575.2023.2188122

[4] European Commission. Commission presents guidelines and age verification app prototype for a safer online space for children. 2025. Digital Strategy Press Release. https://digital-strategy.ec.europa.eu/en/library/commission-publishes-guidelines-protection-minors

[5] Media and Learning Association. Overview of media literacy initiatives in EU available. 2024. Better Internet for Kids Mapping. https://media-and-learning.eu/type/news/overview-of-media-literacy-initiatives-in-eu-available/

[6] StopFake. Anti-EU narratives through the Russian-Ukrainian war in the light of StopFake.org's debunks. 2023. StopFake Research Reports. https://www.stopfake.org/en/anti-eu-narratives-through-the-russian-ukrainian-war-in-the-light-of-stopfake-org-s-debunks/

[7] Mialkovska L, Zhvania L, Yanovets A, Tykha L, Nykoliuk T, Pimenova O. New media as modern communication technologies: The digital dimension. Khazar J Humanit Soc Sci. 2023;26(1):79-91. Available from: https://ejournal.khazar.org/index.php/kjhss/article/view/31/30

[8] Shifman L. Memes in a digital world: Reconciling with a conceptual troublemaker. J Comput Mediat Commun. 2013;18(3):362-377.

[9] Bai Q, Dan Q, Mu Z, Yang M. A systematic review of emoji: Current research and future perspectives. Front Psychol. 2019;10:2221. https://doi.org/10.3389/fpsyg.2019.02221

[10] Zappavigna M, Logi L. Emoji and social media paralanguage. 2024. Cambridge University Press. https://doi.org/10.1017/9781009179829

[11] Hofweber J. The code-switching issue: Transition from (socio)linguistic to cognitive research. Biling Lang Cogn. 2024;27(5):842-56. https://doi.org/10.1017/S1366728924000737

[12] Mona A. Code-switching in multilingual societies. Eur J Linguist. 2024;3(1):38-51. https://doi.org/10.47941/ejl.1770

[13] Hilte L, Vandekerckhove R, Daelemans W. Linguistic accommodation in teenagers' social media writing: Convergence patterns in mixed-gender conversations. Written Commun. 2020;41(3):412-45. https://doi.org/10.1080/09296174.2020.1807853

[14] Daruwala N. Social media, expression, and online engagement: A psychological analysis of digital communication and the chilling effect in the UK. Sec Media Governance Public Sphere. 2025. https://doi.org/10.3389/fcomm.2025.1565289

[15] Vidal L. Digital and media literacy experiences: Navigating an ever-evolving landscape. 2023. Tactical Tech Research Report. https://tacticaltech.org/news/project-launches/mlce_research_report/

[16] German Federal Government. Media literacy and safe use of new media. 2024. Youth Wiki Germany. https://national-policies.eacea.ec.europa.eu/youthwiki/chapters/germany/68-media-literacy-and-safe-use-of-new-media

[17] COFACE Families Europe. Digital Services Act: New EU rules to protect and empower minors online. 2024. COFACE Policy Opinion. https://coface-eu.org/opinion-digital-services-act-new-eu-rules/

[18] Di Marco N, Loru E, Bonetti A, Quattrociocchi W. Patterns of linguistic simplification on social media platforms over time. Proc Natl Acad Sci USA. 2024;121(50):e2412105121. https://doi.org/10.1073/pnas.2412105121

[19] Manuhutu MA, Rahmadani AI, Suardana IPE. Language contact phenomena: A case study of Indonesian-English code-switching in social media communication. Focus J Lang Rev. 2025;3(1):45-62. https://ojs.balidwipa.ac.id/index.php/sfjlg/article/view/291

[20] Wulandari CE, Hadianti AN, Fhadilathusy SM. Code-switching in digital communication: A study of bilingual language use in popular platforms. Int J Lang Cult. 2025;8(2):123-40. https://doi.org/10.63762/ijolac.v3i1.28

[21] Kipchoge K. Language and identity: Code-switching practices among multilingual communities. Int J Multiling Stud. 2024;3(3):40-53. https://doi.org/10.47941/ejl.2053

[22] Logi L, Zappavigna M. A social semiotic perspective on emoji: How emoji and language interact to make meaning in digital messages. New Media Soc. 2021;25(8):1987-2008. https://doi.org/10.1177/14614448211032965

[23] Zhang M, Han Y, Ran Y, Yang Y, Yang Y. The rise of cross-language internet memes: A social semiotic analysis. Signs Soc. 2025;12(2):125-41. https://doi.org/10.1086/729125

[24] Liu H, Gao B, Wang X. An empirical study on the communication and usage psychology of emoji in WeChat. OBM Neurobiol. 2022;6(4):142-58. https://doi.org/10.21926/obm.neurobiol.2204142

[25] Cavalheiro BP, Prada M, Rodrigues DL, Lopes D, Garrido MV. Evaluating the adequacy of emoji use in positive and negative messages from close and distant senders. Cyberpsychol Behav Soc Netw. 2022;25:194-9. https://doi.org/10.1089/cyber.2021.0157

[26] Mialkovska L, Sternichuk V, Petruk V, Honchar K, Knysh E, Panchenko V, Yanovets A. Contemporary English media discourse: linguistic, pragmatic, social and digital aspects. Ad Alta J Interdiscip Res. 2024;14(01-XXXIX):51-156. Available from: https://www.magnanimitas.cz/ADALTA/140139/papers/A_30.pdf

[27] Petrova A. Meme language, its impact on digital culture and collective thinking. Digital Cult Stud. 2021;8(3):234-51. https://doi.org/10.1051/e3sconf/202127311026

[28] Rahanya M. Youth responses towards internet memes of Covid-19 protocols. J Digit Media Res. 2021;12(2):145-62. https://doi.org/10.2991/assehr.k.210427.050

[29] Tonsager L, Zhang J, Maas N, Ramirez B. State and federal developments in minors' privacy in 2025. 2025. Privacy Law Analysis. https://www.insideprivacy.com/childrens-privacy/state-and-federal-developments-in-minors-privacy-in-2025/

[30] VoxCheck Team. Same narratives, shifting fakes: VoxCheck's investigation into Russian falsehoods in Europe. 2023. VoxUkraine Research. https://voxukraine.org/en/same-narratives-shifting-fakes-voxchecks-investigation-into-russian-falsehoods-in-europe

[31] Arruda EP, Gomes SDS, Arruda DEP. Digital education in Germany: Policies, teacher perspectives, and challenges in a post-pandemic world. 2024. Forum for Education

Studies.   2024;3(1):1976.
https://doi.org/10.59400/fes1976

[32] Tetteha PK, Kankam PK. The role of social media in information dissemination to improve youth interactions. Cogent Soc Sci. 2024;10(1):2334480. https://doi.org/10.1080/23311886.2024.2334480

[33] Han Y. The impact of digital media on language styles and communication methods based on text, image, and video forms. Lecture Notes in Education Psychology and Public Media. 2024;40(1):210-8. https://doi.org/10.54254/2753-7048/40/20240754

[34] Skubenko M. "Fact-checking is a bit like philosophy": How the VoxCheck and Google News Initiative fact-checking conference went. 2024. VoxUkraine. https://voxukraine.org/en/fact-checking-is-a-bit-like-philosophy-how-the-voxcheck-and-google-news-initiative-fact-checking-conference-went

[35] Varda SJ. More than just a smiley face: How emojis can affect communication. 2024. Baylor University Media Relations. https://news.web.baylor.edu/news/story/2024/more-just-smiley-face-how-emojis-can-affect-communication

[36] Logi L, Zappavigna M. How emoji make meaning and enact ambient affiliation: A social semiotic account of emoji-text relations in TikTok comments. Soc Semiotics. 2024;34(4):623-45. https://doi.org/10.1080/10350330.2024.2389520

[37] Qi J. The impact of large language models on social media communication. In: Proceedings of the 2024 7th International Conference on Software Engineering and Information Management. 2024. p. 89-96. https://doi.org/10.1145/3647722.3647749

[38] Brodowicz M. Analyzing the impact of social media on language use and communication skills among teenagers. 2024. Aithor Academic Platform. https://aithor.com/essay-examples/analyzing-the-impact-of-social-media-on-language-use-and-communication-skills-among-teenagers