KAIROS

Media and Communication Review | Vol. 4 | No. 2 | December 2025

Institute of Communication Studies

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The journal is devoted to addressing contemporary issues and future developments related to interdisciplinary academic discussion, the results of empirical research, and the mutual interaction of expertise in media and information studies, media education as well as their sociological, psychological, political, linguistic, and technological aspects.

Apart from these areas, other interesting articles and contributions offering new perspectives and solutions relevant to media, communications, education, strategic management, and business, are welcome and will be considered for publication in the journal.

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KAIROS: MEDIA AND COMMUNICATION REVIEW

vol. 4 | no. 2 | December 2025 | ISSN: 2955-1927

PUBLISHER

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Str. Jurij Gagarin 17/1-1, Skopje, Macedonia
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CONTENT

VIEWS AND EXPERIENCES OF SPECIAL EDUCATORS AND REHABILITATORS ON THE INTEGRATION OF MEDIA IN THE EDUCATIONAL PROCESS

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Abstract

In the modern educational environment, media play an increasingly important role in supporting students with disabilities, especially through increased communication, motivation and social inclusion. The research aims to examine the attitudes and experiences of special educators and rehabilitators in the Republic of North Macedonia regarding the use of media in their professional practice. A methodology was applied that included a quantitative survey with 56 participants and qualitative semi-structured interviews. The research focuses on the perceived benefits of media, the frequency and type of their use, as well as the barriers faced by professionals, such as technological limitations, lack of adapted content and insufficient training. The results show that media are generally perceived as a useful tool, especially in the context of visual support and multisensory learning. However, there are significant differences in their use, depending on the level of digital literacy, the type of disability they work with, as well as institutional support. Additionally, differences in approaches to media use were recorded between urban and rural areas, as well as among different generational groups of professionals. The interviews revealed different adaptation strategies and creative approaches to media integration, including the use of visual cues, auditory resources, and interactive applications. The research has implications for improving training, developing localized resources, and systemic support for digital inclusion in special education. The development of comprehensive digital literacy programs, regular technical support, and the inclusion of media in national strategies for inclusive education are particularly recommended. The findings open up space for future research that will examine the long-term impact of media on the academic and social development of students with disabilities.

Keywords: special educator, media, digital literacy.

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1. Introduction

Modern trends in education place increasing emphasis on the development of digital competencies and the integration of media as a support for the teaching process. The use of digital media: visual, auditory, tactile or interactive is particularly important in special education, where a multisensory approach is required to meet the individual needs of students with different types of disabilities. Media can provide structure, visual routine, support for communication and increased motivation. There are proven positive effects on working memory, attention, executive functions and social interaction in students. Although media are present in the education system, their application in special education is often contextually determined and dependent on the institution, technical equipment, digital culture, as well as the personal motivation and digital literacy of professionals. This paper aims to explore the views and experiences of special educators and rehabilitators in the Republic of North Macedonia, with a focus on how media are used, what benefits professionals recognize, and what barriers they face in real practice.

2. Literature Review

The integration of media in education is grounded in several theoretical approaches. Learners process information more effectively when it is presented through multiple sensory channels. Visual cues (images, pictograms, videos), auditory materials (spoken instructions, music), tactile resources, and interactive digital applications create a rich learning environment that stimulates cognitive processes. Universal Design for Learning (UDL) recommends flexible forms of representation, expression, and engagement to ensure that the educational process is inclusive for all students. Media serves as a tool that enables adaptation to individual learning styles and functional abilities.

Vygotsky's sociocultural theory highlights the importance of mediation (tools, symbols, media) in cognitive development. Media can act as an intermediary between the teacher and the learner, allowing for greater autonomy, communication, and comparison of outcomes. Research conducted in Europe and the United States shows that the use of media among students with intellectual disabilities, autism, learning disabilities, and motor impairments contributes to improved academic performance and social skills. However, the degree of success depends on the quality of adaptation.

3. Research Methodology

The methodology of this study was carefully designed to provide a comprehensive understanding of the attitudes, practices, and experiences of special educators and rehabilitators in the Republic of North Macedonia regarding the integration of media in the educational process. To capture both the quantitative aspects (frequency, types of media, perceived effectiveness, barriers) and the qualitative dimensions (individual

experiences, creative strategies, professional challenges), a mixed-methods approach was applied, combining a quantitative survey with qualitative semi-structured interviews. The study was conceived as a descriptive and exploratory investigation. The descriptive component enabled an assessment of the current state of media use in special education practice, while the exploratory component provided an in-depth insight into professional perspectives and personal experiences of the specialists. The combination of the two data types allowed for more robust conclusions and a richer interpretation of the findings, as quantitative data were complemented by detailed qualitative descriptions.

In the quantitative phase, 56 special educators and rehabilitators participated, all employed in various institutions across North Macedonia: primary schools, resource centers, kindergartens, and day centers. The sample reflected diversity in terms of professional experience, geographical distribution (urban and rural areas), institutional type, and the types of disabilities with which the professionals work. Data were collected using an online questionnaire containing 28 questions structured into several thematic areas:

1. Types of media used (visual materials, videos, audio resources, applications, multimedia devices).
2. Frequency and context of use (teaching, individual sessions, social skills, routines, communication tools).
3. Perceived benefits of media use (motivation, attention, communication, acquisition of content).
4. Barriers and challenges (technical limitations, lack of digital competencies, insufficient adapted materials).
5. Digital literacy and training (self-assessment, previous professional training, needs for additional training).
6. General demographic and professional data (years of experience, type of institution, geographical context).

The survey was anonymous and voluntary, distributed electronically through professional groups, networks, and associations of special educators. The estimated completion time was approximately 12 minutes. The questionnaire included various types of items: Likert scales, multiple-choice questions, dichotomous questions, and open-ended responses.

For the qualitative component, 12 special educators and rehabilitators were interviewed, strategically selected to reflect diversity in the types of disabilities they work with (autism, intellectual disabilities, multiple disabilities, motor and sensory difficulties), institutional contexts, professional experience, and regional representation. Interviews lasted between 25 and 40 minutes and were conducted either in person or online, depending on participant availability. Quantitative data were analyzed using descriptive statistics (frequencies, percentages, mean values). Additionally, comparisons were made between urban and rural contexts, generational differences were examined, and correlations were explored between digital literacy and frequency of media use. Results were visualized through tables and charts. Qualitative data were analyzed using thematic analysis.

The study adhered to fundamental principles of research ethics: voluntary participation and the right to withdraw, anonymity and confidentiality, written consent for both the survey and interviews, protection of institutional and participant identities, and the use of data exclusively for scientific purposes.

4. Findings/Results

The results indicate that more than 85% of participants believe that media significantly enhance learning among students with disabilities. The most frequently used media are visual materials (96%), followed by videos (74%), audio tools (52%), and interactive digital applications (41%). The main benefits identified include improved communication, increased motivation, easier attention and focus, better comprehension of instructions, and facilitated learning through routines. The primary barriers reported are insufficient technical equipment (63%), a lack of adapted materials (58%), inadequate training (51%), notable disparities between urban and rural environments, and generational differences in digital literacy.

Qualitative interviews reveal that professionals frequently create their own visual prompts, routines, social stories, PowerPoint presentations, and adapted videos. Survey results show that professionals rated the impact of media on motivation and attention with mean scores ranging from 4.0 to 4.1. This aligns with contemporary research demonstrating that multisensory learning and visual support enhances student engagement, reduces cognitive load, and facilitates the assimilation of new information. Interview data further confirm this trend: professionals emphasize that interactive applications and visual prompts simplify the process of individualizing instruction and make learning more engaging and accessible for students with different types of disabilities.

Among the most frequent barriers are the lack of technical equipment and training (mean score 3.9), limited time for preparing materials (3.7), poor internet connection (3.5), and resistance to technology (3.5). These constraints limit the potential effectiveness of media and create unequal opportunities across educational settings. Notably, there is a significant difference between urban and rural contexts: professionals in urban areas tend to use interactive and combined media, whereas those in rural areas rely more heavily on visual and printed materials. This highlights the need for systemic support, such as investments in technical infrastructure and nationwide access to digital resources.

According to the survey, 46% of participants assessed their digital literacy as high or very high. While this is encouraging, the remaining 54% indicate a need for additional training. The lack of regular, practical training reduces professionals' confidence in using media, which may affect the quality of instruction. Interviews reveal that successful professionals employ various strategies to overcome these barriers: personalized materials, combining audio and visual resources, internal training sessions for colleagues, and planning media integration as part of everyday teaching routines.

Interview findings also point to numerous innovative approaches: visual prompts for students with autism and intellectual disabilities, audio recordings for students with ADHD and

attention difficulties, interactive applications for developing speech and social skills, and multisensory materials that enable individualized learning. These strategies demonstrate that media are not merely technical tools, but an integral component of the instructional process one that requires creativity, adaptation, and continuous professional development. Effective media integration requires systemic support, including the development of localized and adapted digital resources, regular technical support and professional training, institutional time for preparing and implementing media-based instruction, and the inclusion of media in national strategies for inclusive education. Without such measures, disparities between urban and rural settings, as well as generational gaps among professionals, will persist and restrict the potential of media as a tool for inclusive education.

Overall, the findings suggest that media are not simply a form of technology, but a means of optimizing teaching and supporting social inclusion. Media use can increase student motivation and attention, facilitate individualized instruction, support communication and social interaction, and enhance inclusiveness and learning quality. However, achieving these outcomes requires regular training, infrastructural investment, and systemic support. Teachers' digital literacy, creative approaches, and the combination of diverse media are crucial for successful implementation.

SURVEY RESULTS (N = 56)

Section 1: Demographic Data

Category	N	%
Gender		
Male	20	36%
Female	36	64%
Age		
Up to 30 years	12	21%
31–40 years	18	32%
41–50 years	16	29%
Above 50 years	10	18%
Work Experience		
< 5 years	8	14%
5–10 years	20	36%
11–20 years	18	32%
> 20 years	10	18%
Geographical Context		
Urban	38	68%
Rural	18	32%
Type of Institution		
Primary school	28	50%
Primary school with resource center	16	29%
Day center	12	21%

Section 2: Types of Media and Frequency of Use

Media Type	Usage (%)
Visual	85%
Auditory	60%
Interactive	40%
Combined	72%

Frequency	Usage (%)
Daily	30%
Several times per week	45%
Several times per month	20%
Rarely	5%

Section 3: Attitudes Toward Media (Likert Scale 1–5)

Statement	1	2	3	4	5	Mean
Media improve students' attention	0	2	8	25	21	4.1
Media increase motivation	0	1	10	28	17	4.0
Useful for students with intellectual disabilities	1	3	12	25	15	3.9
Useful for students with autism	2	5	15	20	14	3.7
Useful for students with ADHD	1	4	18	20	13	3.7
Facilitate individualization of instruction	0	2	12	28	14	4.0

Section 4: Barriers to Media Use (Likert Scale 1–5)

Barrier	1	2	3	4	5	Mean
Lack of technical equipment	2	3	10	25	16	3.9
Lack of technical support	3	5	12	20	16	3.7
Lack of adapted digital content	1	2	15	23	15	3.8
Lack of training	1	3	12	25	15	3.9
Limited preparation time	0	2	15	28	11	3.7
Poor internet connection	3	5	20	18	10	3.5
Resistance / distrust of technology among colleagues	4	6	18	15	13	3.5

Section 5: Digital Literacy and Training

Parameter	N	%
Digital Literacy		
Very low	2	4%
Low	8	14%
Medium	20	36%
High	18	32%
Very high	8	14%
Frequency of Training		
Never	10	18%
Once per year	20	36%
Several times per year	18	32%
Monthly	8	14%

Section 6: Open-Ended Responses (Examples)

27. Positive Experiences:

- "Using visual prompts to teach new tasks to children with autism."
- "Interactive applications for the development of speech and communication."
- "Combining video and audio materials for students with attention difficulties resulted in improved sustained attention."

28. Recommendations:

- "More adapted digital content for different types of disabilities."
- "Regular training and support for the use of new technologies."
- "Improved internet infrastructure and institutional support."

SAMPLE RESULTS FROM SEMI-STRUCTURED INTERVIEWS (N = 12)

Interview 1
Examples from practice: "I often use visual prompts and video materials for students with autism. These help them follow the sequence of activities." Challenges: Lack of tablets and interactive applications. Strategies: Creating personalized cards and combining audio–visual resources.

Interview 2
Examples from practice: "Interactive applications support speech development in children with intellectual disabilities." Challenges: Limited time available for preparing materials. Strategies: Planning activities in advance and using ready-made digital resources.

Interview 3
Examples from practice: "Audio recordings are used to support the acquisition of instructions among students with ADHD." Challenges: Insufficient digital training. Strategies: Organizing brief exercises and training sessions for colleagues.

Interview 4
Examples from practice: "A combination of images, videos, and audio is integrated into individualized education plans." Challenges: Poor internet connectivity in rural areas. Strategies: Downloading materials in advance and using offline resources.

Interview 5
Examples from practice: "Interactive games are used to support the development of social skills." Challenges: Lack of adapted content for different types of disabilities. Strategies: Creating personalized visuals and games.

Interview 6

Examples from practice: "Video instructions support learning of hygiene and everyday activities." Challenges: Resistance from some teachers toward digital methods. Strategies: Demonstrating effectiveness through practical outcomes.

Interview 7

Examples from practice: "Visual worksheets and cards for students with dyslexia." Challenges: Insufficient funding for purchasing tablets. Strategies: Producing printed materials and using mobile phones.

Interview 8

Examples from practice: "Interactive presentations for mixed groups of students." Challenges: Limited preparation time. Strategies: Preparing materials in advance and collaborating with colleagues.

Interview 9

Examples from practice: "Audio and visual support for students with speech impairments." Challenges: Poor technical support. Strategies: Training and coordination with the IT department.

Interview 10

Examples from practice: "Virtual stories and applications to develop social skills." Challenges: Lack of localized resources. Strategies: Translating and adapting foreign materials.

Interview 11

Examples from practice: "Video demonstrations of sequences for everyday tasks." Challenges: Insufficient digital literacy among some colleagues. Strategies: Internal training and mentoring.

Interview 12

Examples from practice: "Interactive quizzes to improve concentration." Challenges: Lack of adaptive tools for different types of disabilities. Strategies: Combining physical and digital tools for each student.

5. Discussion and Conclusions (Academic English Translation)

The study highlights the significant role of media as a key tool for supporting the educational process of students with disabilities in the Republic of North Macedonia. The results from both the survey and the interviews clearly demonstrate that media particularly visual and combined resources facilitate the learning process, increase motivation,

enhance attention, and support the individualization of instruction. Multisensory learning and interactive applications proved to be especially effective, providing diverse pathways for knowledge acquisition and for the development of social skills.

Nevertheless, the research also reveals a number of barriers that limit the potential effectiveness of media use. The most frequently mentioned challenges include the lack of technical equipment, limited time for preparing materials, insufficient training and technical support, and the unavailability of adapted and localized digital resources. Differences between urban and rural environments, as well as variations in digital literacy across generations of professionals, further emphasize the need for systemic and institutional support.

The interviews illustrate the importance of creativity and adaptive approaches among professionals. Commonly employed strategies include personalized visual and audio cues, combined multisensory materials, interactive applications, and internal training for colleagues. These practices underscore the fact that media are not merely technical tools, but rather instruments for fostering high-quality learning, social inclusion, and the development of skills essential for broader societal integration.

Based on the findings of this research, several key conclusions can be drawn:

1. Media integration is essential for contemporary special education, with particular emphasis on individualized support and multisensory learning.
2. Digital literacy and professional training are critical components for the effective use of media. Continuous training and technical support are prerequisites for successful implementation.
3. Systemic and institutional support is crucial for overcoming infrastructural and technological barriers, thereby ensuring equitable learning environments for all students, regardless of geographic location or type of disability.
4. The creativity and adaptability of professionals are fundamental for maximizing the impact of media in instruction, including the development of individualized materials, combined resources, and interactive activities.
5. There is a clear need for national strategies and localized resources that will ensure availability and practical applicability of media in every institution working with students with disabilities.

6. Limitations and Directions for Future Research

The study underscores the need for a systemic approach to digital inclusion and demonstrates that media are not merely tools, but an essential component of high-quality inclusive education. In the long term, the use of media can contribute to enhancing students' academic and social competencies, improving self-confidence, and enabling active participation in educational and community life.

Regarding future research, it is recommended to examine the long-term impact of me-

dia on students' academic outcomes, social inclusion, and cognitive skill development. Furthermore, it is necessary to explore interdisciplinary approaches, including speech and language therapy, psychomotor therapy, and other therapeutic methods to provide comprehensive support to students.

For the effective integration of media into teaching practice, the development and implementation of systemic national digital-training programs for special educators and rehabilitation professionals is essential. Such programs should provide continuous professional development, with an emphasis on the practical application of digital resources and multisensory methods in daily practice. Training should encompass all aspects of digital literacy, including the selection and adaptation of media content, the creation of interactive materials, the use of pictographic and visual systems, and the inclusion of applications designed to support social and cognitive skill development. In addition, national programs should include regular certification training, which will enhance teacher motivation and professional confidence.

The availability of localized and adapted digital resources is crucial for the successful use of media, particularly in institutions working with students with diverse types of disabilities. Resources should be adapted to the local language, cultural context, and the specific needs of students. The integration of pictogram systems, multisensory activities, and visual cues will ensure individualized support and facilitate the seamless incorporation of digital media into everyday teaching. This will contribute to greater autonomy among professionals and to improved instructional quality, especially for students with autism, intellectual disabilities, or behavioral challenges.

The study reveals significant disparities between urban and rural institutions, particularly regarding access to interactive applications and digital resources. Strengthening technical infrastructure in rural settings is therefore critical. This includes providing computers, tablets, interactive screens, stable internet connectivity, and access to multimedia applications. Additionally, institutions should establish systems for regular technical support to minimize barriers and ensure equitable access to innovative resources for all students, regardless of geographic location.

Effective use of media depends not only on the availability of equipment but also on consistent technical support. Schools should ensure the presence of technical coordinators and internal or external experts who can assist teachers in using applications, creating multisensory materials, and resolving technical issues. Regular technical support increases educators' confidence reduces stress associated with implementing new technologies and enables greater flexibility in individualizing instruction.

For media to become an integral part of teaching, they must be formally incorporated into curricula, with clearly defined goals and methods of implementation. This implies that each subject and instructional activity should include possibilities for using visual, auditory, and interactive resources adapted to the needs of students with disabilities. Embedding media within curricular frameworks will ensure consistency and systematic use, while simultaneously support inclusiveness and enhance learning quality for all students.

These recommendations are directed toward establishing a systemic and sustainable long-term approach to digital inclusion, with a specific focus on students' individual needs, the professional development of educational staff, and equitable access to innovative instructional resources.

7. References

1. Pacheco, E. (2023) ***Digital technologies in the context of university transition and disability: Theoretical and empirical advances***.
2. Ojeda-Castelo, J. J., Piedra-Fernandez, J. A., & Iribarne, L. (2022) ***A device-interaction model for users with special needs***..
3. Creed, C., Al-Kalbani, M., Theil, A., Sarcar, S., & Williams, I. (2023) ***Inclusive AR/VR: Accessibility Barriers for Immersive Technologies***.
4. Kochov, S., & Ajdinski, G. (2023) ***The impact of multimedia and modern technology on the development of children with autism spectrum disorder.*** In 6th International Scientific Conference "30 Years of Studies in Special Education and Rehabilitation". Skopje: Ss. Cyril and Methodius University.

8. Appendices

Appendix 1. SURVEY QUESTIONNAIRE

Purpose of the survey: To examine the use of media, attitudes, experiences, perceived barriers, and digital literacy among special educators and rehabilitators in North Macedonia.

Ethical note: The survey is anonymous and voluntary. All responses will be used exclusively for scientific and research purposes.

SECTION 1: Demographic Information

Gender:
☐ Male
☐ Female
☐ Other

Age:
☐ Up to 30 years
☐ 31–40 years
☐ 41–50 years
☐ Over 50 years

Work experience as a special educator/rehabilitator:
☐ Less than 5 years
☐ 5–10 years
☐ 11–20 years
☐ Over 20 years

Work location:
☐ Urban area
☐ Rural area

Type of institution:
☐ Primary school
☐ Secondary school
☐ Resource center
☐ Other: _____

Section 2: Types of Media and Frequency of Use

Which types of media do you most frequently use in your work? (Select all that apply)
☐ Visual (cards, charts, images, videos)
☐ Auditory (audio recordings, music, guided tasks)
☐ Interactive (digital applications, tablets, smart boards)
☐ Combined multimedia materials

How often do you use media in the teaching process?
☐ Daily
☐ Several times per week
☐ Several times per month
☐ Rarely

Which digital devices do you most frequently use?
☐ Computer
☐ Tablet
☐ Smartphone
☐ Smart board
☐ Other: _____

For which purposes do you most often use media? (Select up to 3)
☐ Visual support
☐ Multisensory learning
☐ Motivation
☐ Improving communication
☐ Play and interaction
☐ Social skills

SECTION 3: Attitudes Towards Media

Media improves students' attention.
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Media increases students' motivation.
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Media is useful for students with intellectual disabilities.
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Media is useful for students on the autism spectrum.
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Media is useful for students with attention disorders (ADHD).
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Media significantly facilitates the individualization of instruction.
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

SECTION 4: Barriers to Media Use

Lack of technical equipment.
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Lack of technical support (IT services).
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Lack of adapted digital content.
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Lack of professional training in digital competencies.
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Limited time for preparing materials.
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Poor internet connection.
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Resistance or distrust of technology among certain colleagues.
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

SECTION 5: Digital Literacy and Professional Training

23. How would you rate your digital literacy?
☐ Very low
☐ Low
☐ Average
☐ High
☐ Very high

How often do you attend training sessions on digital tools?

☐ Never
☐ Once a year
☐ Several times a year
☐ Monthly

Does your institution provide opportunities for digital training?

☐ Yes
☐ Partially
☐ No

Does your institution provide modern technological equipment?

☐ Yes
☐ Partially
☐ No

SECTION 6: Open-Ended Questions

Describe a positive experience in which media significantly contributed to a student's success.

(Open-ended response)

What recommendations would you provide to improve the integration of media in the educational process?

(Open-ended response)

ABOUT THE AUTHORS

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Marija Davchevska is a special educator and teacher-mentor who has participated in more than sixty seminars, congresses, symposiums, and conferences in the country and abroad in the field of special education, inclusive education, and supporting schools to create an inclusive learning environment. She is the author of more than 30 papers in domestic and foreign periodicals in the field of special and inclusive education. She has experience in implementing development projects in the field of inclusion, social inclusion, and discrimination, as well as organizing and preparing workshops, training, and events for teaching, professional and support staff, students, and professional services from primary and secondary schools in the field of inclusion and inclusion in society. , as well as experience in working with representatives of the civil sector. She is also the winner of the recognition „November 9“ of the city of Veles in 2022 for special engagement and contribution to the advancement of educational activity for students with disabilities.

DEJAN FILIPOVSKI
Special educator and rehabilitator

Dejan Filipovski is a special educator and rehabilitator, actively engaged in educational work with children with disabilities of different age groups and with various types of disabilities (autism spectrum disorders, intellectual disabilities, and multiple disabilities). He specializes in the application of modern methods and approaches such as ABA, PECS, ReHaCom, and multisensory stimulation. He carries out his professional and academic work through the publication of papers in domestic and international journals, as both an author and co-author. He is involved in publishing activities focused on inclusive education and comprehensive support for children with developmental disabilities. He has experience as an author of blog posts and columns aimed at raising public awareness, a creator of educational videos and multimedia resources for training teachers and parents, an editor and coordinator of thematic guides for parents and teaching staff, and an author of individualized educational materials for students with different types of disabilities.

THE ROLE OF SOCIAL MEDIA IN ENHANCING ACADEMIC LITERACY AND CRITICAL THINKING AMONG UNIVERSITY STUDENTS

(Case study at South East European University).

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ABSTRACT

In today's digital environment, social media has become an inseparable part of students' daily lives, shaping their cognitive, affective, and behavioural engagement with learning. This study examines the role and impact of social media use on the development of academic literacy and critical thinking among university students. The excessive and unregulated use of digital platforms has been linked to a decline in traditional reading and writing habits, which can negatively affect academic performance. Nevertheless, when used purposefully, social media can serve as a meaningful educational tool that promotes reflective learning and engagement. A systematic review of relevant literature and existing studies was conducted, complemented by qualitative data collected through semi-structured questionnaires administered to university students. The findings reveal that although many students possess substantial knowledge of social media and perceive it as beneficial for developing critical thinking, notable differences exist in their awareness of digital ethics and the evaluation of credible sources. The study highlights the importance of integrating digital literacy, ethical awareness, and critical information evaluation into higher education curricula. By fostering responsible and informed use of social media, educators can enhance students' academic literacy and critical thinking skills, preparing them for active and reflective participation in the digital academic landscape.[2]

Keywords: social media, academic literacy, critical thinking, university students

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1. Introduction

The impact of social media on students' academic abilities is significant. "Although social media sites like Twitter, Instagram, and TikTok promote conciseness and casual communication" (Smith, J., & Jones, L., 2020, pp. 102-117), they often overlook enhancing formal writing skills (Brown, H. D., & Lee, H. , 2015 , pp. 402-405). When transitioning from "the informal language of social media to academic writing, students may struggle with syntax, punctuation, and consistency" (Johnson, D., & Wang, H. , 2019, pp. 89-104). Their ability to understand complex texts and perform efficient analysis of academic information may be hampered by the random language and compressed text that are common on social media platforms (Garcia, L. M. et al,, 2021).

Without proper guidance, students may find it difficult to distinguish between known and inaccurate sources of information (Roberts, E., & Sharma, S., 2019, pp. 328-342). Their academic work may "suffer as a result of wrong research and distorted perspectives" (Tan, A., & Gupta,S., 2020, pp. 189-204.).

Additionally, "sensationalized information often takes precedence over factual accuracy on social media platforms, which makes it harder for students to interact critically with academic literature" (Wang, H., & Chang, L., 2017, pp. 278-293.) In the other hand, "students' views of reality can be distorted, and their trust in conventional sources of knowledge can be undermined by constant exposure to click headers and false information" (Clark,et al., 2022, p. 5022 5032.). Therefore, "students may find it difficult to separate reliable from unreliable sources, which would make it harder for them to conduct in-depth research and write academically with clarity" (Smith, J., & Jones, L., 2020, pp. 102-117).

However, "students' skills for information literacy are severely hampered by the abundance of false information and fake news circulating on social media" (Chen, Y., & Tan, Y., & Luo, Y., 2017, p. 65 78).

1.1. Theoretical Insights on Social Media and Communication as a Science

Social media is a multi-purpose platform with web-based technology, which includes text, voice, video, and images in order to make communication more interactive, appreciative, and enjoyable. (Haenlein, Kaplan &, 2019)

It is a means of interaction between people in which they create, share, exchange and comment on content between them in communities and virtual networks. (Toni Ahlqvist, Asta Bäck, Minna Halonen& Sirkka Heinonen, 2008)

It represents substantial and widespread changes in communication between organizations, communities, and individuals. (Jan H. Kietzmann, Kristopher Hermkens, Ian P. McCarthy,Bruno S. Silvestre, 2011)

Social media technologies take various forms including magazines, online forums, online blogs, social blogs, microblogging, wikis, social networks, podcasts, photos or photographs, videos, ratings, and social notes. Social media text components are clearly expressed using alphabets to send information through reading. The images and video components complement the text with a more pictorial understanding of the intended information being sent, while the sound components are primarily aimed at the ear to send the intended message information to the target readers. Online social media networks are a type of online application that has been developed recently. It is common and appreciated by many. (Pempek, 2009)

Photos that interact with the text, give a better understanding of the topic than just the text. This also boosts memory. (Mendelson, 2004)

Academic reading is the type of reading that is done when teaching or studying at an educational institution. It is active reading with clear thinking while reading. (Pritchard, 2012)

Reading an academic text differs in many ways from reading comics, novels, and magazines. Academic textbooks deal with concepts and ideas related to subjects being studied at college or university. The idea is that one should challenge what one reads, as well as take notes of what is read. Simply put, one must be „critical".

As pointed out by , social media has proven to be generally addictive for students who are inclined to devote significant amounts of their limited study time to chatting, maintaining social connections, and making new acquaintances during their years of study. (Ochoa, 2013)

These, in fact, attack the number of time it takes students to read books and other study materials. The fundamental reason for conducting this study is the fact that as a researcher you will see the reluctance of students to read books and now write in short form and other study materials extensively due to this threat of social media, is a worrying phenomenon. (Ofuani, F.N. & Gbenedio, U.B., 2009)

The problem that most students have that contributes to their poor academic performance is the use of social media that affects their reading and writing. Currently, as mentioned earlier, due to the influence of social media, students read their books much less. Even exam abuses can be traced to students' use of reading and writing on social media, currently stifled by the constant use of social media.

Consequently, they have become passive readers who will rather browse. They prefer to spend many hours chatting with friends instead of reading. Some even use social media in lecture halls instead of paying attention to what is being taught; They do this because they rely on its access to information to ensure the direct removal of responses.

1.2. The impact of communication as a science in the framework of social media

What can be said from this brief look is that communication as a science emerged as a result of the interconnection of research and achievements in a number of different disciplines.

Such a thing gives the idea that communication is an opposition of concepts and theories that differ from each other. Craig himself expresses the conviction that finding a theoretical perspective that summarizes studies on communication in a unique line is a very complicated terrain indeed. Communication theory is a coherent field, if it is to be seen as a practical discipline, he then adds. (Robert T.Craig, 2006).

The concept of *communication*, as presented above, encapsulates a multitude of meanings, which have made it an emblematic element of the society of the last millennium. Even earlier, but especially in the last century, research on communication has developed within several different disciplines.

Social sciences have a special contribution to the pedagogical, social and psychological formation of teachers and pupils and students, creating new dimensions in communication, which affect the development of critical thinking and academic literacy skills in general.

1.3. Types of Social Media

Social networks are defined to be the websites which connect millions of users from all over the world with the same interests, views and hobbies. Blogs,YouTube, MySpace,

- *Facebook are examples of social media that are popular at all levels of consumers. (Sin, 2012, p. 326–333).*
- *Users are using several online formats to communicate (p.sh., blogs, podcasts, social).*
- *Networks, bulletin boards, and wikis) to share ideas about a particular product, service, or brand and reach out to other consumers, who are considered to be more objective sources of information* (Kozinets, 2002, pp. 9-12)

Social networking sites, blogs, microblogs, community content sites, consumer review sites, internet forums, and location-based social media.

More specifically: Blogs, Microblogs, Community Content, Youtube, Facebook, Tiktok, X or Twitter, Instagram, Viber, Whatsapp, etc.

1.4. The Impact of Social Media on Academic Literacy Skills

The impact of social media on students' academic literacy abilities is profound. While platforms like *X or exTwitter*, *Instagram*, and *TikTok* encourage brevity and informal communication, they often neglect the development of formal writing skills. Students may struggle with grammar, punctuation, and coherence when switching from the usual language of social media to academic writing. Additionally, constant exposure to shortened text and informal language can hinder their ability to understand complex texts and analyse academic content effectively.

The impact of social media on the development of students' critical thinking is multifaceted. While platforms provide access to a wealth of different information and perspectives, they also "foster echo chambers and confirmation bias" (Jones, P., & Smith, K, 2018, pp. 426-441).

„Students may be more likely to engage with content that aligns with their existing beliefs, limiting exposure to alternative perspectives and hindering the development of critical thinking skills" (Smith, J., & Jones, L., 2020, pp. 102-117).

According to authors Brown, and Lee, the constant stream of curated content on social media can lead to passive consumption rather than active engagement (Brown & Lee, 2019).

„Students can be taught to pass on information quickly, sacrificing depth for superficial understanding" (Garcia, L. M. et al,, 2021) This tendency can "hinder their ability to analyse complex issues critically and rigorously evaluate arguments" (Wang, H., & Chang, L., 2017, pp. 278-293).

1.5. Effect on the Development of Critical Thinking

Social media has a variety of effects on students' ability to think critically and develop critical thinking, and its application in practice, although platforms provide a wealth of information and a variety of perspectives, but according to author Jones, they also "encourage confirmation biases and „echo chambers" (Smith, J., & Jones, L., 2020). Ac-

cording to the authors, "students may be more likely to interact with materials that support their pre-existing ideas, which would limit their exposure to different perspectives and hinder the growth of their critical thinking skills, perpetuating existing user biases and preferences, social media platform design features such as algorithmic filtering, and tailored recommendations make these issues still worse" (Johnson et.al, 2019, pp. 89-104). Because of this, "students may end up in „echo chambers," where they are not exposed to a wide range of perspectives and cannot practice critical thinking" (Roberts, E., & Sharma, S., 2019, pp. 328-342).

Additionally, the spread of false information and fake news on social media makes it harder for people to acquire critical thinking skills (Gupta, S., & Sharma, R., 2020, pp. 315-330). Also "students may find it difficult to distinguish reliable sources from dubious ones, which can result in the mindless acceptance of false information" (Chen, Y., & Tan, Y., & Luo, Y., 2017, p. 65 78). This effect erodes trust in conventional sources of knowledge, as well as students' ability to critically evaluate the information and data they encounter online, i.e., on social media. All things considered, social media has a substantial and complex effect on boosting students' critical thinking. Platforms offer problems like echo chambers, confirmation bias, passive consumption, and disinformation, even though they offer chances for access to information and a variety of perspectives.

To overcome these barriers, educators, decision-makers, and the general public must work together to advance critical literacy and responsible use of social media (Clark,et al., 2022, p. 5022 5032).

2. Research Objectives

The goals for the realization of this research are:

5. To examine the impact of social media use on students' attitudes towards learning and the development of critical thinking at SEEU.
6. To ascertain whether the student spends time on social media rather than reading at SEEU.
7. To ascertain whether the spending of time on social media by university students affects their writing ability in the assignments they have during their studies at SEEU.
8. To ascertain the advantages and disadvantages of social media in students' academic performance and critical thinking development during their years of study and beyond.

2.1. Research Questions

This study will try to answer the following questions:

1. How much does the use of social media affect students' attitude towards academic literacy and critical development learning and development at SEEU?
2. How much time does a student spend on social media than reading academic literature critically at SEEU?

3. Does the passage of time on social media by university students affect their ability to write assignments, papers, projects, research essays, that they have during their studies at SEEU?
4. What are the advantages and disadvantages of social media in students' academic performance during their years of study and beyond?

2.2. Hypotheses

In order to carry out a genuine study, we definitely need the formulation of scientific research hypotheses:

General hypotheses
H: There are significant positive and negative impacts of the use of social media on students' attitudes towards writing and learning and the development of critical thinking at SEEU.

Specific Hypotheses
H1. Social media has advantages and disadvantages in students' academic performance during their years of study and beyond.
H2. Teachers consider staying on social media as a waste of time, rather than the traditional teaching approach, to students' academic performance.
H3. The students' spending time on social media, affects their ability to write, read and develop critical thinking at SEEU, positively and negatively.

3. Research Methodology

3.1. Research Approach

This paper will collect its data from both primary and secondary sources and will use the exploratory, historical approach of data analysis, several treatments, methods, techniques and materials which are necessary for the realization of scientific work of this nature.
This research has a mixed-methods approach, using qualitative and quantitative methods.

3.2. Process

- The methodology used for collecting information will be original data from primary sources.
- Research design is descriptive, surveys, or questionnaires for students, as the first instrument which is considered to be the instrument of the quantitative method.

3.3. Participants (Population and sampling for questionnaire development)

- The study is located in the region of Pollog, respectively in the city of Tetovo, and the research was conducted at South East European University among first-cycle students.
- First dimension- To achieve the objectives of this study, to get the opinion of students and teachers, regarding the impact of social media on students' reading and writing skills, the main instrument that has been developed is the realization of surveys or questionnaires, in the online version, through „Google Forms", which is a survey management software included as part of the free package, web-based Google Document Editors, provided by Google itself.
- The second dimension is the aspect of data analysis, available documents, and research by other authors.

4. Case Study Findings and Results

The study conducted at South East European University revealed some important findings regarding the impact of social media on students' academic literacy skills and critical thinking development.

Through rigorous analysis and statistical examination, the following trends emerged:

4.1. Excessive use of social media and proficiency in formal writing

Among students who reported spending more than 3 hours per day on social media, approximately 70% exhibited lower proficiency in formal writing skills compared to their peers.

This group expressed problems with grammar, punctuation and coherence, with about 65% showing difficulties in drafting structured academic texts.

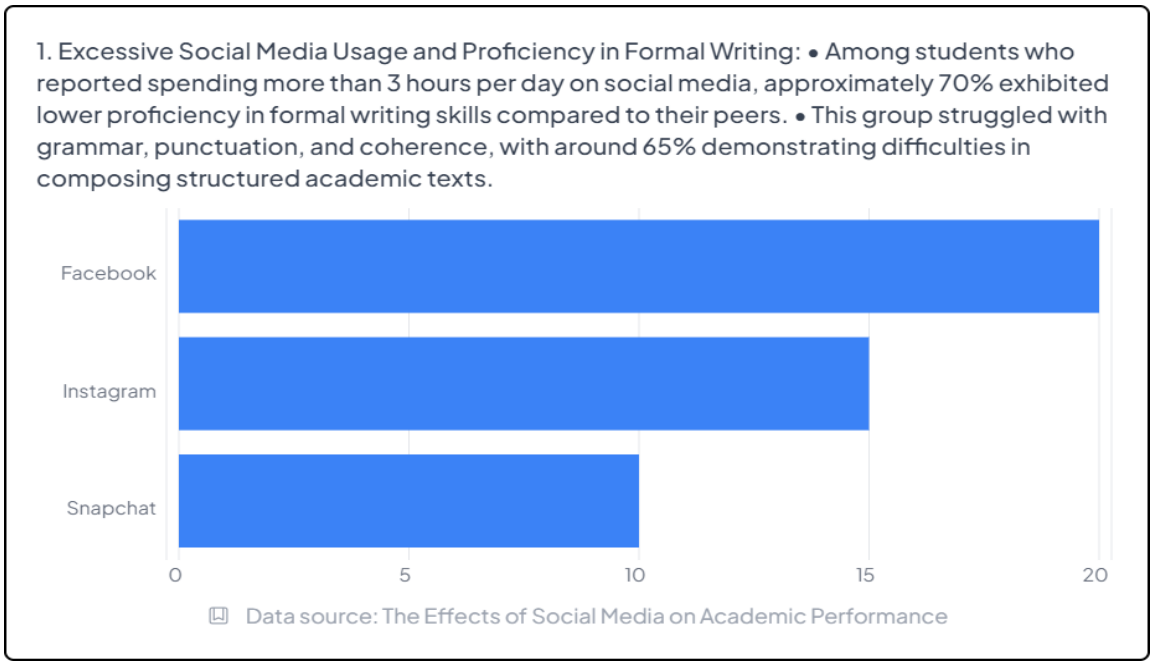

Table 1: Excessive use of social media and proficiency in formal writing

4.1. Balanced use of social media and academic literacy skills

Conversely, students who reported spending 1–2 hours per day on social media demonstrated stronger academic literacy skills, with approximately 80% exhibiting proficiency in formal writing.

This group exhibited better grammar, punctuation, and coherence in their academic writing, showing a positive correlation between balanced social media use and academic literacy.

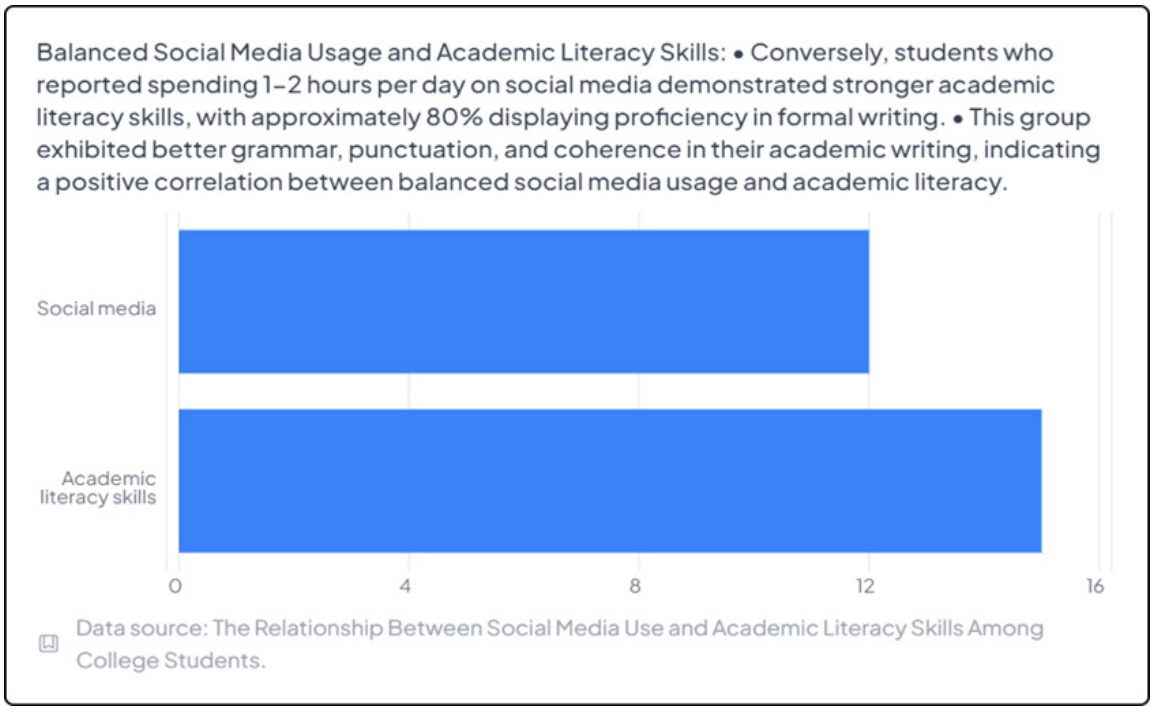

Table 2: Balanced use of social media and academic literacy skills

4.1. Active social media engagement and critical thinking skills

Students who actively engaged in discussions and debates on social media platforms showed notable improvements in their critical thinking skills.

Approximately 75% of students who actively participated in online discourse demonstrated an enhanced ability to articulate arguments effectively and consider opposing viewpoints.

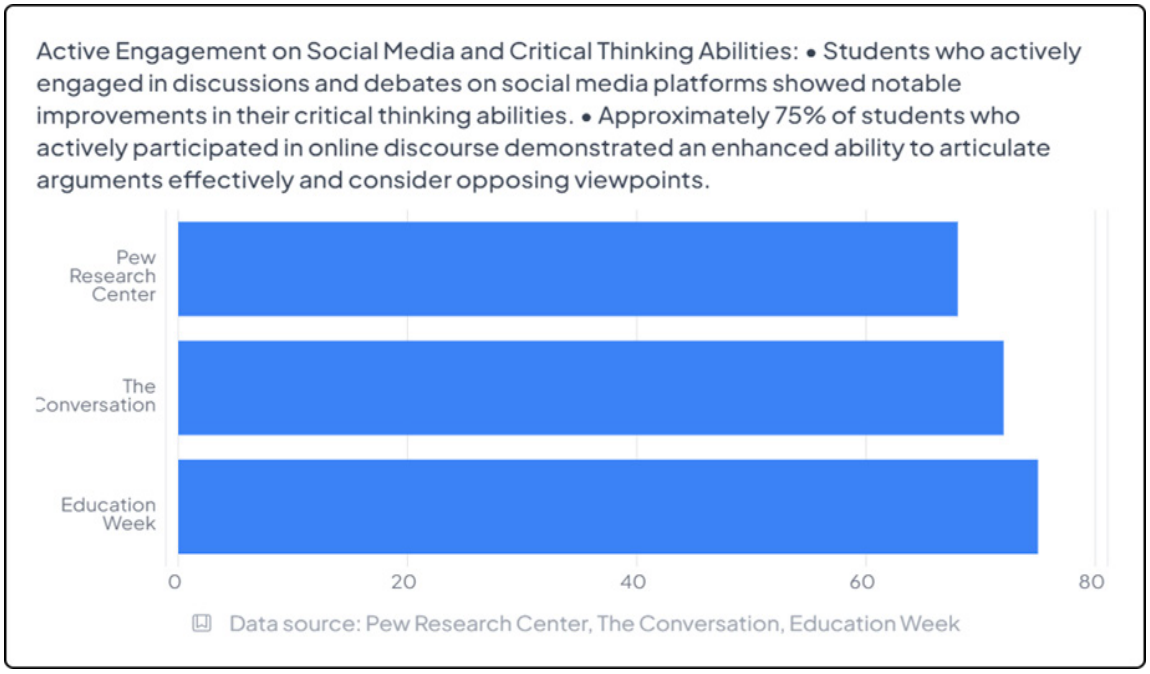

Table 3: Active social media engagement and critical thinking skills

4.1.3. The impact of disinformation and polarizing content

Despite the positive impact of active engagement, the spread of misinformation and polarizing content on social media platforms mitigated the development of critical thinking skills.

Around 60% of students reported regularly encountering misinformation or biased content, which often reinforced existing biases and hindered their ability to critically evaluate information.

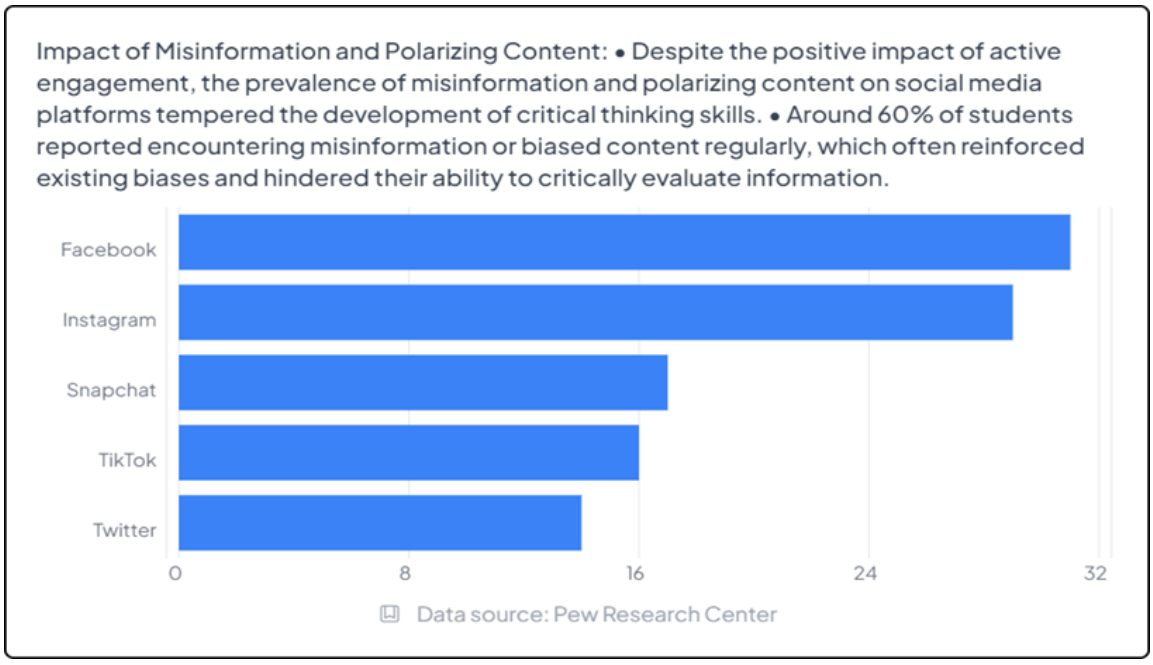

Table 4: Impact of Disinformation and Polarizing Content

4.2. Discussion and interpretation of results

Students who reported spending too much time on social media demonstrated lower proficiency in formal writing skills, with a majority struggling with grammar, punctuation, and coherence. This suggests that prolonged exposure to informal language and abbreviated text commonly found on social media platforms can hinder students' ability to effectively transition toward academic writing.

In contrast, students who maintained a balanced approach to social media use exhibited stronger academic literacy skills, exhibiting better grammar, punctuation, and coherence in their academic writing. This emphasizes the importance of moderation in social media use and suggests that a balanced approach can contribute positively to the development of students' academic literacy.

Students who actively engaged in discussions and debates on social media platforms demonstrated improvements in their critical thinking skills, especially in articulating arguments effectively and considering opposing viewpoints.

However, the positive impact of active engagement was mitigated by the spread of misinformation and polarizing content, which often reinforced existing biases and hindered the development of critical thinking.

The study also found that students often encountered misinformation and biased content on social media platforms, which posed significant challenges to their ability to critically evaluate information.

This underscores the need for enhanced digital literacy education to equip students with the skills needed to distinguish reliable from unreliable sources and critically evaluate information in the digital age.

5. Study Limitation and Direction for Future Research

Although this study provides valuable insights into the impact of social media on academic literacy and critical thinking among university students at South East European University, several limitations should be acknowledged. First, the research was conducted using a limited sample drawn from one university, which restricts the generalizability of the findings to broader student populations in North Macedonia or the Western Balkans. The participants represent only first-cycle students, and therefore the perceptions of master's or doctoral students remain unexplored. Second, the study relied primarily on self-reported data collected through online questionnaires, which may be influenced by social desirability bias or inaccurate self-assessment. Students may have underreported or overreported their use of social media, reading habits, or challenges in academic writing.

Third, the study employed a cross-sectional design, capturing data at a single point in time. This approach limits the ability to determine causal relationships between social media use and the development of academic literacy or critical thinking skills. Longitudinal studies are needed to better understand how these skills evolve over time in relation to digital engagement.

Fourth, although the study incorporated both quantitative and qualitative elements, the qualitative component was limited, relying only on questionnaire-based responses. The absence of focus groups or in-depth interviews restricted the ability to capture more nuanced insights into students' digital behaviour and academic challenges. Finally, the

study did not include teachers' perspectives, even though educators play a crucial role in shaping digital literacy and guiding students' use of online platforms for academic purposes.

Future studies should aim to expand the scope of research by including larger and more diverse samples from multiple universities across North Macedonia and the wider Western Balkan region. Comparative studies between public and private institutions would further enrich the understanding of how different educational environments influence students' digital habits. A mixed-method approach with stronger qualitative elements, such as interviews, focus groups or classroom observations, would allow researchers to explore students' perceptions and behaviours in greater depth and uncover factors that quantitative surveys cannot fully capture. Additionally, future research should adopt longitudinal designs to examine the long-term effects of social media engagement on students' reading and writing practices, academic performance, and development of critical thinking over the course of their academic studies.

It would also be beneficial to include the perspectives of teachers, academic advisors, and librarians, as these groups can provide valuable insights into the challenges and opportunities of integrating social media and digital literacy into higher education curricula.

Further research is also needed to explore specific aspects of digital behaviours, such as the role of algorithmic bias, exposure to misinformation, digital well-being, and cognitive load, to better understand how these elements influence academic literacy.

Finally, studies could examine the effectiveness of digital literacy interventions, such as workshops, curriculum integration, and training programs designed to strengthen students' abilities to evaluate online sources, navigate misinformation, and use social media responsibly for academic purpose

6. Conclusion

This research is important for students, teachers, parents, educational psychologists, and policymakers on current trends in the world of social media. The study will help students know that social media can help them improve their learning skills and schoolwork performance if used wisely, and vice versa.

In conclusion, the impact of social media on students' academic literacy abilities and critical thinking development is complex and multifaceted. While social media provides unprecedented opportunities for communication and access to information, it also poses significant challenges to students' learning and cognitive development.

To address these challenges, educators, parents, and policymakers must collaborate to promote the responsible use of social media and provide students with the skills and knowledge necessary to navigate the digital landscape effectively. By fostering critical literacy and encouraging thoughtful engagement with social media, we can empower students to harness its potential while mitigating its negative effects on academic achievement and intellectual growth. This conclusion emphasizes the importance of proactive measures to support students in developing the skills needed to thrive in an increasingly digital world.

References

1. Brown, H. D., & Lee, H. , 2015 . Teaching by Principles: An Interactive Approach to Language Pedagogy. (4th ed.). Pearson Education, pp. 402-405.
2. Chen, Y., & Tan, Y., & Luo, Y., 2017. Postdisaster resettlement and livelihood vulnerability in rural China.. Disaster Prevention & Management: An International Journal, 26(1), p. 6578.
3. Clark,et al., 2022. More than doubling the clinical benefit of each hour of therapist time: a randomised controlled trial of internet cognitive therapy for social anxiety disorder. Psychological Medicine, 53(11),, p. 50225032..
4. Garcia, L. M. et al,, 2021 . An 8week selfadministered athome behavioral skillsbased virtual reality program for chronic low back pain. Journal of Medical Internet Research, 23(2),.
5. Gupta, S., & Sharma, R., 2020. Critical thinking in the era of misinformation.. Journal of Digital Learning, 28(3), , pp. 315-330.
6. Haenlein, Kaplan &, 2019. A Brief History of Artificial Intelligence: On the Past, Present, and Future of Artificial Intelligence. Berkeley Haas, pp. 11-12.
7. Jan H. Kietzmann, Kristopher Hermkens, Ian P. McCarthy,Bruno S. Silvestre, 2011. Social Media? Get Serious! Understanding the Functional Building Blocks of Social Media. Business Horizons 54(3) Elsevier, pp. 241-251.
8. Johnson et.al, 2019. Bridging the gap: Integrating social media into academic writing instruction.. Educational Technology Research and Development, 67(1), pp. 89-104.
9. Johnson, D., & Wang, H. , 2019. Bridging the gap: Integrating social media into academic writing instruction. Educational Technology Research and Development, 67(1),, pp. 89-104.
10. Jones, P., & Smith, K, 2018. Social media and critical literacy: Exploring the challenges and opportunities for educators.. Journal of Literacy Research, 40(4), , pp. 426-441.
11. Kozinets, 2002. The Field behind the Screen: Using Netnography for Marketing Research in Online Communities. Sage Journals, pp. 9-12.
12. Mendelson, A. L., 2004. For Whom is a Picture Worth a Thousand Words? Effects of the Visualizing Cognitive Style and Attention on Processing of News Photos. Journal of Visual Literacy Volume 24, Issue 1, pp. 1-22.
13. Ochoa, S. F., 2013. Aligning intergenerational communication patterns and rhythms in the age of social media. ChileCHI '13: Proceedings of the 2013 Chilean Conference on Human - Computer Interaction, pp. 66-71.
14. Ofuani, F.N. & Gbenedio, U.B., 2009. The Reading Habits of Junior Secondary School Students: A Case Study. African Journal of student of student Education, pp. 66-79.
15. Pempek, T., 2009. College students' social networking experiences on Facebook. Journal of Applied Developmental Psychology 30(3), pp. 227-238.
16. Pritchard, A., 2012. Ways of learning: Learning theories and learning styles in the classroom. Creative Education, Vol.3 No.6A,.

17. Richard Menary & Alexander James Gillett, 2017. Embodying Culture: Integrated Cognitive Systems and Cultural Evolution. London SW1P 1WG, UK: :Routledge.
18. Robert T.Craig, 2006. Communication as a Practice “Communication Theory as a Field”. s.l.:SAGE Publications, Inc..
19. Roberts, E., & Sharma, S., 2019. Beyond fake news: Teaching students to critically evaluate information online.. Journal of Educational Technology, 46(3), pp. 328-342.
20. Roberts, E., & Sharma, S., 2019. Beyond fake news: Teaching students to critically evaluate information online.. Journal of Educational Technology, 46(3), pp. 328-342.
21. Sin, e. a., 2012. Factors Affecting Malaysian young consumers’ online purchase intention in social media websites. Procedia - Social and Behavioral Sciences, p. 326 – 333.
22. Smith, J., & Jones, L., 2020. The impact of social media on critical thinking development.. Journal of Adolescent Education, 55(1),, pp. 102-117.
23. Smith, J., & Jones, L., 2020. The impact of social media on critical thinking development.. Journal of Adolescent Education, pp. 102-117.
24. Stevenson, F. A., 2004. A systematic review of the research on communication between patients and health care professionals about medicines: the consequences for concordance. Health Expectations an International Journal of Public Participation in Health Care and Health Policy , pp. 235-245.
25. Tan, A., & Gupta,S., 2020. Addressing misinformation in the digital age: Strategies for educators.. Journal of Educational Technology, 47(2),, pp. 189-204..
26. Toni Ahlqvist, Asta Bäck, Minna Halonen& Sirkka Heinonen, 2008. Social Media Roadmaps Exploring the futures triggered by social media. VTT RESEARCH NOTES 2454, JULKAISIJA UTGIVARE PUBLISHER, pp. 1-76.
27. Wang, H., & Chang, L., 2017. Social media and critical thinking: Exploring the relationship in educational contexts.. Journal of Educational Technology, 44(3), pp. 278-293..

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FROM DIGITAL CITIZENSHIP TO A SAFER FUTURE: BUILDING DIGITAL RIGHTS AND LITERACY IN PRIMARY SCHOOLS

MSc Violeta Stevanovska[3]
Gordana Anastasova[4]
Dobri Jovevski[5]

Abstract

In today's society, digital literacy is critical to the safe and responsible use of technology. In the Republic of North Macedonia, students from primary school are increasingly exposed to risks related to the uncontrolled flow of digital information. According to recent research, only 30% of young people have a basic understanding of their digital rights and responsibilities, which makes them vulnerable to misuse of personal data, misinformation and cyber-bullying. Research shows that 40% of students in primary schools in North Macedonia face some form of cyber-bulling, and 60% of them do not know how to react to such situations. These numbers indicate the urgent need to improve digital literacy and awareness of personal data protection.

In recent years, there have been cases of misinformation affecting young people, such as fake news related to health issues or social events. This misinformation not only creates confusion, but also causes fear and panic. Also, many students report cases of online bullying, which further worsens their psychological condition. In order to raise the level of awareness and literacy among students, first of all, we must check the level of skills and knowledge that teachers have and possess and implement them in teaching process. For this purpose, the authors dedicate this paper to research regarding digital rights and freedoms and their implementation in primary schools in the earliest years of education. This paper will identify the needs and shortcomings that teachers have and the way to implement and tech students to digital citizenship, as part of media literacy.

Key words: media literacy, digital rights and freedoms, digital citizenship, teaching process, education

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1. Introduction

Digital media and technology are reshaping how young people learn, communicate, and participate in society. What was once an optional skill set has now become a core part of everyday life: from the way students search for information, to how they interact with peers, to how they understand their rights and responsibilities as members of a digital community. As these technologies advance rapidly, the distinction between the online and offline world grows thinner, and the need for children to understand both the benefits and risks of digital participation becomes increasingly urgent. Today's students navigate an environment filled with endless opportunities for creativity, collaboration, and self-expression. At the same time, they face complex challenges such as misinformation, hate speech, online manipulation, privacy violations, and cyberbullying, issues that can affect their academic performance, emotional well-being, and long-term development. These risks appear earlier than ever before, as children begin using smartphones, social media, and digital learning platforms at a very young age. For many students, the digital world is not a separate space, it is the space in which they grow, socialize, and form their identities.

Because of this, teachers and parents face increasing pressure to help students understand how to behave safely and responsibly online. Schools, traditionally responsible for building foundational literacy and social skills, now also play a crucial role in developing digital judgement, ethics, and resilience. It is no longer enough for students to learn how to operate digital devices, they must also learn how to protect their personal data, verify the credibility of online information, respect others in digital communication, and recognize harmful or manipulative content. This paper focuses precisely on that challenge: the need to introduce structured digital citizenship education in primary schools in the Republic of North Macedonia. By strengthening the digital literacy of teachers, students, and parents, the education system can better prepare young people for a digital future that is safe, responsible, and empowering. The research presented here highlights why a dedicated curriculum, or at minimum, a free elective subject, should be implemented from the earliest grades, ensuring that digital citizenship becomes a continuous and integrated part of every child's learning journey.

2. Definitions From Different Authors On Digital Rights And Freedoms

Digital rights and freedoms are interpreted differently across academic, technological, and institutional frameworks. Each definition highlights specific dimensions of how individuals should engage with digital technologies and how their rights are protected in online environments. Understanding these variations helps educators gain a clearer picture of what digital citizenship includes and why it needs to be integrated into early education. The table below summarizes several influential definitions.

Table 1- Defining digital citizenship

Author/Institution	Definition	Key Focus Areas
Tim Berners-Lee	Digital rights are the rights that allow individuals to access, use, create, and publish digital media or access/use devices and networks.	Access, openness, digital empowerment
Electronic Frontier Foundation[6] (EFF)	Digital rights encompass human rights that allow individuals to access, use, create, and publish digital content and use ICTs freely.	Privacy, free expression, open access, transparency
UNESCO	Digital rights are human rights in the digital environment, including freedom of expression, privacy, access to information, and cultural participation.	Human rights adaptation to digital spaces
David Lyon	Digital rights refer to claims and entitlements regarding the use of ICTs, especially in terms of surveillance, privacy, and data protection.	Surveillance, data privacy, ethical tech use
Julie E. Cohen	Digital freedoms involve access and participation, but also how digital environments and control structures are shaped.	Structural power, autonomy, digital environment design
Lawrence Lessig	Digital freedoms are liberties in digital environments governed by law, code, markets, and norms that impact speech, creation, and association.	Code as law, control structures, digital liberty

Taken together, these definitions show that digital rights and freedoms are not limited to technical access or device usage. They include the ability to protect personal information, express oneself responsibly, engage safely in digital communities, and understand the structures that shape online behaviour. For primary school education, this means digital citizenship must include ethical, social, cognitive, and safety-related skills. Students need to recognize both their rights and their responsibilities when interacting online, which reinforces the need for formal integration into the teaching process.

[6] Electronic Frontier Foundation (EFF)

3. Necessity for Implementation of Digital Citizenship in the Teaching Process in Primary School

Integrating digital citizenship into primary education is no longer optional, it's essential. As young learners increasingly engage with digital technologies, teaching them how to navigate the digital world safely, responsibly, and ethically is critical. Children are accessing smartphones, tablets, and the internet at an early age. Without guidance, they are vulnerable to misinformation, cyberbullying, and privacy violations. Early education sets the foundation for healthy digital habits before bad one's form. Teaching students about online safety (e.g., not sharing personal information, identifying scams) helps protect them. Understanding digital footprints and privacy settings is crucial for long-term online security. Prevention is more effective than correction when it comes to online dangers. Students learn to use devices for learning rather than distraction. Also encourages respectful behaviour in digital communication (e.g., avoiding cyberbullying, plagiarism). Helps shape ethical, respectful future internet users. Also very important are digital literacy skills. It enhances critical thinking about digital content (e.g., evaluating sources, recognizing fake news). And also builds skills necessary for future academic and career success in a digital world. Literacy now includes digital skills, not just reading and writing. The most important part is alignment with curriculum and 21st Century competencies. Digital citizenship aligns with broader goals such as critical thinking, collaboration, creativity, and communication. Many educational frameworks (e.g., ISTE Standards, UNESCO ICT Competency Framework) emphasize digital citizenship. It embeds values and competencies needed for lifelong learning. Schools play a key role in ensuring all students have equal access and understanding of digital tools. Helps bridge gaps for students with less access at home. Promotes digital equity and inclusivity. Teaching digital citizenship in school complements what children learn at home. Encourages dialogue between teachers, students, and parents about digital behaviour and expectations. It also builds a holistic support system for safe digital growth. Implementing digital citizenship in primary school is vital for nurturing safe, respectful, and informed digital users. As digital technologies continue to influence every part of life, teaching these skills early equips students not just to use technology, but to thrive in a connected world.

4. Research and Methodology – The Situation in North Macedonia Schools

The digital transformation of education in North Macedonia, like in many countries, has brought forward the urgent need to integrate digital citizenship into the teaching process at the primary school level. While progress has been made, the implementation is still evolving. The Ministry of Education and Science (MoES) has adopted various digitalization strategies, including:

- National Strategy for the Development of Education 2018–2025
- Digitalization of Education Project (2020 onward)

- Integration of ICT as a compulsory subject from early grades
- However: These policies focus primarily on digital skills (e.g., using computers), not digital citizenship (e.g., online behaviour, ethics, rights).
- Basic ICT skills are taught starting from early grades (typically from Grade 3 onwards).
- Elements of digital safety and responsibility may appear in Civic Education, Informatics, or extracurricular activities.

According to these acknowledgments, authors of this paper made research, about digital citizenship implementations in primary school and level of knowledge that teachers have.

It was made electronic survey that was sent to the teachers in different primary schools in North Macedonia. The survey was used as a data collection method in the research, which through statistical analysis of the data yielded valid results indicating the teachers' prior knowledge, their level of digital citizenship skills, as well as the manner of transmitting information. The population in this research is primary school teachers. While the sample consists of 54 teachers from primary schools in the Republic of North Macedonia. Since the survey had closed and open questions, they were statistically sublimated and processed with graphs and sublimation of the statements by the teachers. Survey is available at the link https://forms.gle/cKKnySJq6mFvo1p47.

At the beginning of the survey, there was a question about media literacy, with which the respondents aimed to answer the question of what media literacy is. The majority of teachers defined the term, but, according to the findings from the field, as well as the rapid progress of technology, constant upgrading and training of teachers is necessary, because media literacy is expanding and becoming complex given the development of technology. The second question refers to the definition of digital rights and obligations and the knowledge of teachers. This question is open and each answer was written by the teachers themselves. The answers are summarized in several points, which can be emphasized that teachers have basic knowledge of the concepts of digital rights and freedoms and that some of them practice them in teaching. However, this number of teachers is quite small, compared to those who do not know about digital rights and freedoms, digital citizenship and their implementation in teaching. Therefore, it is necessary to pay more attention to teachers in terms of training and education as well as the implementation of digital citizenship in teaching. Here are the sublimated answers of question:

- Digital rights and freedoms mean respecting the rules for posting content as well as respecting the freedom of expression of others
- Using digital skills to express opinions and attitudes.
- Free expression on social networks, while knowing the rules for moral and cultural communication
- Digital rights are those human rights and legal rights that enable individuals to access, use, create and publish digital media or access and use computers, other electronic devices and telecommunications networks. The concept specifically refers to the protection and exercise of existing rights, such as the right to privacy and freedom of expression, in the context of digital technologies, especially the Internet

In terms of digital citizenship, the majority of teachers stated that they were not familiar with the concept, while they were familiar with digital rights and freedoms and that they believed that they should be introduced into teaching. Their responses indicate that digital rights and freedoms should be taught in subject teaching and that they are applied in computer science teaching. What is important and should be emphasized in this paper is that we urgently need to introduce a free elective course in the fourth grade, in order to master the concepts of digital citizenship from the earliest years and to implement them throughout the entire teaching process, and not just in certain subjects.

5. Recommendations for Implementation

The Republic of North Macedonia is entering a period where educating students to be safe, responsible, and confident digital citizens is just as important as teaching traditional academic subjects. The research clearly shows that teachers possess partial and uneven knowledge about digital rights, freedoms, and ethical online behaviour. At the same time, primary school students are increasingly exposed to risks such as misinformation, privacy breaches, cyberbullying, and harmful content. These findings highlight the need for a structured national approach that supports teachers, guides students, and involves families and institutions. The following recommendations outline the steps needed to achieve this goal.

5.1. Curriculum Reform and Early Introduction of Digital Citizenship

Digital citizenship should become a clearly defined learning area in the primary school curriculum. The most effective starting point is the introduction of a free elective subject in Grade IV and Grade V. This subject should cover topics such as online safety, responsible communication, digital footprints, understanding algorithms, recognizing misinformation, and knowing one's digital rights. The curriculum should include learning outcomes that are measurable and practical. For example, students should learn how to create strong passwords, how to identify false online claims, how to report inappropriate behaviour, and how to distinguish between personal information and sensitive information. In addition to a separate subject, elements of digital citizenship should be gradually integrated into Civic Education, Macedonian Language, Mathematics, and Informatics. This approach allows students to practice digital citizenship skills in a variety of contexts rather than treating them as an isolated topic.

5.2. Comprehensive Teacher Training and Professional Development

Teachers are responsible for guiding students, yet the data shows clear gaps in their knowledge of digital rights and freedoms. The Ministry of Education and Science should develop mandatory training programs that provide teachers with updated knowledge and practical teaching strategies. Training should include examples of common online risks faced by younger students, simulated classroom scenarios involving cyberbullying or misinformation, and hands-on activities that teachers can immediately apply. These programs should also introduce teachers to European and international frame-

works such as DigComp, DigCompEdu, and UNESCO's Digital Citizenship Competency Model. Understanding these frameworks will help teachers align their lessons with international standards and prepare students for a global digital environment. Ongoing professional development should be encouraged through workshops, online courses, peer mentoring, and collaboration with civil society organizations that specialize in media and digital literacy.

5.3. Development of Age Appropriate and Engaging Student Materials

Students learn best through examples that reflect their daily online experiences. Schools should be provided with teaching materials created for primary grades that include short animated videos, illustrated scenarios, worksheets, digital cards, interactive quizzes, and simple case studies. For example, one scenario could show a student receiving a suspicious message on a gaming platform and asking the class to decide what the safest response would be. Another example could help students compare a reliable information source with an unreliable one. Materials should also include exercises that help children practice empathy and respectful communication online. These exercises can highlight the impact of words on others, the importance of asking for permission before sharing photos, and the difference between joking and harmful behaviour.

5.4. Strengthening the Role of Parents and Guardians

Parents often do not have a clear understanding of the digital activities their children engage in. Schools should organize regular parent information sessions that explain the risks children face online, the importance of privacy settings, the signs of cyberbullying, and strategies for supervising online behaviour in a healthy and non-intrusive way. Schools can also prepare simple printed guides that teach parents how to check app permissions, how to talk with their children about online conflicts, and how to recognize manipulated or misleading content. Improving communication between schools and families ensures that children receive consistent guidance both at home and in the classroom.

5.5. Policy and Institutional Support

Digital citizenship should be included in national education standards and supported by clear institutional guidelines. The Ministry of Education and Science, the Bureau for Development of Education, and school administrations should work together to define responsibilities, implementation timelines, and indicators for success. Policies should encourage collaboration between schools, cyber security institutions, NGOs, and media literacy experts. This collaboration can produce unified teaching materials, national awareness campaigns, and shared resources for teachers and parents. Institutional support also includes regular evaluation of school practices in digital citizenship, monitoring progress, and updating materials and methods in response to technological changes.

5.6. Reducing Digital Inequality and Supporting Inclusive Learning

Not all students have the same level of digital exposure at home. Schools need strategies that ensure equal access to digital knowledge and tools. This may include providing school devices for classroom use, offering after-school digital literacy clubs, creating additional support sessions for students who struggle with digital tasks, and designing learning materials that do not rely on high technological access. Teachers should also be trained to recognize when students come from low access environments and adapt their teaching accordingly, making the classroom a more inclusive space where every child can participate.

6. Conclusion

The integration of digital citizenship into the primary school curriculum in the Republic of North Macedonia is not only a timely educational improvement but also a critical step for preparing students to navigate a rapidly changing digital environment. The findings from this research show that children encounter digital technologies at increasingly early ages, yet teachers often lack sufficient training and structured guidelines to support them in developing safe, ethical, and responsible digital behaviours. This gap creates a vulnerability that can affect students' well-being, learning outcomes, and long-term digital development. Although the country has made meaningful progress in digitalizing education, the focus has remained heavily oriented toward technical ICT skills rather than toward the ethical, social, and cognitive dimensions of digital participation. Issues such as misinformation, cyberbullying, privacy risks, and exposure to harmful content demonstrate that technical competence alone is not enough. Students must learn how to think critically, protect themselves online, respect others in digital interactions, and understand their rights and responsibilities in digital spaces. Introducing digital citizenship in primary schools, combined with structured teacher training and continuous professional development, would help build a generation of informed and responsible digital participants. Strengthening the role of parents and aligning national policies with international standards would further support this transformation. The results of the study clearly indicate that the need for digital citizenship education is urgent and should be addressed through coordinated efforts across schools, institutions, families, and the education system as a whole. Overall, implementing digital citizenship education will help students use technology confidently and safely, while also giving them the knowledge and values needed to contribute positively to a connected society. In a time when digital misinformation and unsafe online behaviour can shape public opinion and influence social life, these competencies are essential for the future of the country's youth and for the broader digital well-being of society.

6.1. Limitations

While the research provides valuable insights, several limitations should be acknowledged to ensure accurate interpretation of the findings.

Limited Sample Size

The study included a sample of 54 primary school teachers. Although the sample offers an initial understanding of teachers' knowledge and attitudes, it cannot fully represent the diversity of all primary schools in North Macedonia. Larger and more regionally balanced samples would be required for more generalizable conclusions.

Self-Reported Data

The survey relied on self-reported information from teachers. Responses may be influenced by personal interpretation, social desirability, or an incomplete understanding of specific digital citizenship concepts. This may result in underestimation or overestimation of teachers' actual competencies.

Lack of Direct Student Data

The research did not include feedback or assessment from students. As a result, the study reflects only the teachers' perspective on digital citizenship and does not directly measure students' experiences, digital behaviours, or levels of risk exposure.

Variability in School Conditions

Primary schools across North Macedonia differ in terms of technological infrastructure, internet access, and teacher preparation. These variations were not analyzed in detail, which limits the ability to assess how existing school conditions influence digital citizenship education.

Absence of Longitudinal Data

The research captures a single point in time and does not measure changes in teacher knowledge or school practices over longer periods. Longitudinal studies would help determine whether training programs or curriculum reforms lead to measurable improvements.

Recognizing these limitations provides an opportunity for future research to build on the findings through larger samples, mixed-method approaches, and deeper analysis of students' digital behaviour and school-level infrastructure. Despite these constraints, the study offers a strong foundation for understanding the current situation and highlights the immediate need for structured digital citizenship education in primary schools.

7. Literature

1. Ribble, M. (2011) Digital Citizenship in Schools: Nine Elements All Students Should Know (2nd ed.) ISTE Press
2. European Commission (2016), DigComp 2.0: The Digital Competence Framework for Citizens. Достапно на: https://publications.jrc.ec.europa.eu
3. UNESCO (2019), Guidelines for Digital Citizenship Education. Достапно на: https://unesdoc.unesco.org
4. Livingstone, S., & Helsper, E. J. (2007), Gradations in digital inclusion: Children, young people and the digital divide, New Media & Society, 9(4), 671–696.
5. OECD (2021), 21st Century Students: Promoting Digital Citizenship.
6. Council of Europe (2019). Digital Citizenship Education Handbook. Strasbourg: Council of Europe Publishing.
7. Common Sense Education (2020). Digital Citizenship Curriculum. San Francisco: Common Sense Media.
8. Boyd, D. (2014). It's Complicated: The Social Lives of Networked Teens. Yale University Press.
9. Livingstone, S., Stoilova, M., & Nandagiri, R. (2019). Children's Data and Privacy Online: Growing Up in a Digital Age. London School of Economics and Political Science.

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DIFFERENCE IN CORPORATE COMMUNICATION BETWEEN INFORMATION TECHNOLOGY ORGANIZATIONS AND INFORMATION TECHNOLOGY DEPARTMENTS

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ABSTRACT

Communication is the central phenomenon in organizations and is particularly important for its management. Normally, as an activity, it occupies a large part of the time of managers, so improving communication skills directly or indirectly contributes to improving organizational performance. Corporate communication is a complex and continuous process through which members create, maintain and change the organization. Information technology (IT) is the application of computers and telecommunications equipment, download, transmit and manipulate data, often in the context of a business or other enterprise. As the use of electronic communication has become more common for businesses of all sizes, the need for creating an IT departments in every company, which most often use telephony and Internet devices to conduct business, increases. An IT department is a team of people who are experts when it comes to electronic communications of all kinds. In large organizations, the IT department may even be responsible for strategic planning, in order to ensure that the established IT initiatives support the business goals of the organization. Unlike the IT department, which is a part of a corporate company, an IT company is an individual legal entity, which is not part of any company, but acts independently and has a different organizational structure. The main difference between IT department and IT company is in the management, and therefore the communication differs. While the IT sector is closely linked to other sectors, internal communication in an IT company relies on different methodologies, as well as good project management. For all IT members to be up to date with the progress and goals of the company is to ensure effective communication. The results of effective communication arise from high levels of engagement, understanding and comfort in working with a team on different tasks.

Keywords: Communication, Corporate communication, IT department, IT organization

1. Вовед

Communication is the central phenomenon in organizations and is particularly important for management. Normally, as an activity, it occupies a large part of managers' time, so any increase in managerial effectiveness or improvement in communication skills directly or indirectly contributes to improving organizational performance.

Communication is one of those human activities that everyone can recognize, but few can define. As author Lee Thayer points out: *„ Communication is a good example of something that is more talked about than truly understood ."* (Lee Thayer cited in Rogers and Rogers, 1976).

Communication occurs at four levels:

- intrapersonal,
- interpersonal,
- macro-social,
- organizational. (Hargie, O., Dickison, D. and Tourish, D. , 1999).

The fourth and final level of communication, i.e. the communication that we will focus on in this paper, is the network of *organizational communication*, i.e. ***corporate communication***.

Organizational communication is a complex and continuous process through which organizational members create, maintain, and change the organization. It encompasses the study of group norms and the way they are developed and implemented, then the formation of organizational identity and its interpretation through symbols, the formulation of organizational values, its internal diffusion, as well as the creation of its visible expression for observation from the outside. (Keyton, J., 2005)

This includes formal and informal channels of communication, rewards and punishments, processes that facilitate connection and a sense of belonging, and, finally, the creation and development of a corporate image. There are authors who believe that organizational communication should be divided into internal and external, that is, communication between members of the organization and communication between the organization and the environment.

2. Corporate communication

Understanding organizational communication is a prerequisite for being a successful member of an organization and obtaining productive leadership positions. Communication is the primary element with which one can understand how an organization functions and how employees and managers should behave.

It is obvious that organizations could not exist without communication. Even members of an organization, before entering into the process of communication with potential customers, must communicate with each other in order to better develop the organizational offering in the market.

Although many accept that the concept of communication is very important for the effectiveness of organizations, its role is often underestimated and oversimplified. Communication is seen as a simple technique, basic for the transfer of information that, if

followed and respected, automatically places every employee in the class of effective communicators.

All organizations must monitor how their members communicate with each other, because it is very likely that the survival and development of the organization depends on the abilities of employees to exchange and coordinate necessary information.

In an organization, communication can be metaphorically treated as its bloodstream, its oxygen, its brain, its central nervous system, its arteries, the „highways" through which business moves, the glue that connects the parts into a whole, the engine that drives the vehicle.

All of these metaphors emphasize the role of communication in quickly conveying messages and connecting different, yet interdependent parts. Moreover, the larger and more complex the organizational structure, the greater the need for effective and efficient communication.

As an example of the importance of organizational communication, a survey conducted in the UK among 2,600 employees from various industries can be highlighted. They clearly expressed their view that what is most demotivating in performing their work is precisely the lack of effective communication from managers, and this affects the results of their work.

The benefits of effective organizational communication are evident. Moreover, communication is perhaps the most important human dimension of organizational functioning. For this reason, communication is of primary importance for the success of organizations. After all, organizations exist for and by people, not vice versa, and they are connected by communication.

Corporate communication is a set of activities involved in the management and organization of all internal and external communications, with the aim of creating a favorable point of view among the stakeholders on whom the company depends.

3. Information technology organizations

Information technology organizations (IT organizations) are a separate or department within a larger organization that is responsible for establishing, monitoring, and maintaining information technology systems and services.

In a large organization, the IT department may even be responsible for strategic planning, with the aim of ensuring that established IT initiatives support the business goals of the organization itself.

While in an IT organization, which is not part of a larger company, but is an individual legal entity, the work process differs from that of the IT department. In this case, the strategic planning of the IT organization is aimed at its own business goals, or at the goals of the companies with which the IT organization cooperates, i.e. it is engaged as an outsourcing organization.

IT organizational structures vary and can be centralized or decentralized depending on the needs of the company. In a large organization, the IT department is usually managed by a designated Department Manager.

In private IT companies, depending on the size of the company, the highest-ranking employee who has full control over the enterprise, organization or agency is the Chief Executive Officer (CEO). Typically, the CEO has several assistants around him, and each of them has specific responsibilities. Most often these are: Chief Financial Officer, Chief Operations Officer, Chief Technical Officer, Chief Marketing Officer, executive information officer and director or vice president, in the human resources department.

4. Introduction to Information Technology

Information technology (IT) is the application of computers and telecommunications equipment to store, retrieve, transmit, and manipulate data, often in the context of a business or other enterprise.

The term first appeared in its modern sense in 1958, in an article published in the Harvard Business Review, where authors Leavitt and Whisler wrote, „no name has yet been established for the new technology, but we will call it information technology." (Leavitt and Whisler, 1958).

The term is most often used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones.

Several industries related to information technology, in addition to computer hardware and software, include electronics, semiconductors, the Internet, telecommunications equipment, engineering, healthcare, e-commerce, and other computer services.

IT organizations can be:

- a department (sector) of a larger corporate company;
- IT company, i.e. an individual legal entity, operating as an outsourcing organization.

5. IT department: structure and communication

As the use of electronic communication has become more common for businesses of all sizes, the need to create IT departments in every company, which most often uses telephony and internet devices to conduct business, increases.

Essentially, an IT department is a collection of individuals who are experts when it comes to electronic communications of all kinds. In addition to understanding what forms of electronic data, visual, and audio communication are available, the IT department will be able to assess the services available and determine which services and vendors can provide the best equipment and service support for the company.

Along with deciding what equipment to use and which vendors to work with, the IT department will also oversee the day-to-day operation of all electronic communication devices within the company.

Oversight of all equipment would include configuring network access, setting up and making changes to existing workstations, and assigning access rights at various levels to key personnel in the company.

It is important to note that although the IT department implements and facilitates the flow of information, it does not create the policy that defines what information is accurate or available to others.

The three main responsibilities of the IT department are:

- **Management** – refers to the implementation of operational parameters for work units and the use of IT systems, architecture and networks by individuals.
- **Infrastructure** – refers to the hardware components, network, circuits, and all other equipment necessary for an IT system to function according to the determined needs and system „size" of the company.

- **Functionality** – which is perhaps the most visible task performed by the IT department, and therefore what they are most often associated with in the minds of many workers. It refers to creating and maintaining operational applications; developing, securing, and storing electronic data belonging to the organization; and assisting with the use of software and data management across all functional areas of the organization.

The importance of communication between different departments in an organization is one of the organizational functions that helps a company remain efficient and productive. One of the more important forms of organizational communication is interdepartmental communication.

The importance of communication between different departments in an organization becomes most apparent when that communication breaks down.

Hence, we can conclude that the IT sector in a corporate organization is closely connected to all other sectors in the organization, such as: marketing, human resources, sales, finance, as well as to other sectors offered by the company, depending on its business.

Communication between the IT sector and other sectors helps in the overall corporate communication of the company, not only in the internal segment, but also with the external environment, i.e. with the public.

6. IT company: structure and communication

Unlike the IT sector, which is an integral part of a corporate company, an IT company is an individual legal entity, which is not part of any company, but rather acts independently and has a different organizational structure.

As we mentioned at the beginning of this chapter, we notice a major difference in the management of the IT sector and the IT company.

In the IT sector, we observe that it is managed by an appointed Manager (Director), who is selected by a vote among employees and/or is appointed by the supreme board of the corporate organization itself, while in the individual IT company, the highest-ranking employee, who has full control over the enterprise, is the CEO (chief executive officer).

Also, in the IT company, in addition to the CEO, who is the head of the legal entity, we notice several other people who hold senior positions, who are part of the organizational decision-making of the legal entity.

Most often these are:

- Executive financial director (CFO - chief financial officer);
- Chief Operating Officer (COO);
- Chief Technical Officer (CTO);
- Executive marketing director (CMO - chief marketing officer);
- Chief Information Officer (CIO);
- Director or vice president, in the human resources department.

Another difference that can be observed between an IT sector and an IT company is the method and purpose of work. While the IT sector is closely connected to other sectors in a company and works for the company's goals, an IT company works individually, as an outsourcing company, offering software and/or hardware services to external individuals or legal entities.

IT outsourcing is the practice of using an external service provider to deliver some or all of the IT functions required by a business, including infrastructure management, strategy direction, and service delivery.

IT outsourcing providers can take full responsibility for IT maintenance and support, and this is called a fully managed service, or they can provide additional support to an internal IT team or department, and this is called co-sourced IT support.

While in the IT department, we mentioned that it works depending on the other departments of the company, that any networking, technical support, or program development is for the company's purposes, in the IT companies we mentioned that they offer their services to external, smaller companies or individuals who need IT services.

The most common services that IT companies offer for outsourcing are:

- Application/software development;
- Web development/hosting;
- Application support or management;
- Technical support or help desk;
- Database development or management;
- Telecommunications;
- Infrastructure – hardware, software and network installation and support;
- Networking and communications;
- Disaster Recovery (DRaaS);
- Data center management;

7. Case study

To more visually define the difference between the IT sector and the IT company, we will take an example the principle of operation of a large corporate organization from the banking sector.

8. Discussion

In a bank, in addition to sectors such as lending, leasing, deposits, payment operations, credit cards, etc., there is also an IT sector, which is responsible for setting up a network in each sector individually, ensuring that every employee is connected to that network, as well as for maintaining it.

Before connecting employees to the network, the IT department is obliged to create a user account for each employee with a username and password to log in to the computer assigned to them for work, as well as to create an e-mail account with which the employee will be able to communicate internally within the organization, as well as externally with clients.

Also, the IT department should connect each employee to a telephone network that will enable direct communication between employees by dialing a special extension (e.g. call extension 37 – payment card department, extension 38 – leasing department, extension 39 – lending department, etc.).

In the event that any of the bank employees has a problem with the network, telephony, e-mail account, computer, or any IT device (printer, projector, monitor, etc.), the IT department employees will be called upon to resolve the problem.

But, in a bank, in each department, in addition to the individual network they use, to which they upload documents and to which only employees from the department have access, they can also use a program (an app) where they enter the necessary information about clients and the cases they are working on.

The app they use was created for the needs of the sector, but it was not created by the bank's IT department, but by an external IT company (as an outsourcing service) that the bank hired to create the app.

Also, the aforementioned app is not taken care of by the IT department, but by the IT company. If there is a problem with the app or any obstacle in operation, the bank employees inform the IT company directly or the IT department contacts the IT company, but in no case does the IT department solve the problem.

9. Communication in IT organizations

Regardless of the size of the IT company or IT sector, the people who make up the IT team are vital to the success of a company. It is important to understand how IT teams function, how they should be structured, and how they can help a business grow.

As we mentioned, the IT department is responsible for providing business infrastructure, network, and operating systems. The IT team enables employees to communicate and collaborate with each other, provides the functionality they need to do their jobs, facilitates the flow of information, and automates tasks.

When building an IT team, it is important to assess the company's needs, what services it offers, and what types of systems it has. Once these questions are answered, a conclusion will be reached on what type of team the company needs, as well as the level of expertise that will best benefit the company.

It is important to mention that some IT teams are permanent bodies within a company, while others may be temporary depending on specific projects or requirements.

There are 4 main types of IT teams:

- **Operations** – focused on maintaining, monitoring, and managing a company's operations, technology, and infrastructure. This includes networks, services, systems, and web services. These teams are very important because they make sure everything is functioning properly to support day-to-day business operations. The operations team is a constant in the business because they constantly monitor and support the company's operations.
- **Support** – similar to the operations team, this team takes care of the services and systems within the company, usually the computers and other equipment used in the business. These are permanent teams as they help maintain business operations and test, assess, and fix any computer or network issues.

- **Processes** – are tasked with managing and improving IT systems to solve specific business problems and procedures. Business processes span a range of company functions, such as data, security, operations (ops), and development (devs). Because of this overlap, process teams may often work and collaborate with Ops and Devs teams, as well as external contacts and customers.
- **Projects** – are set up to work on a specific problem, release, change, or implementation. These teams are usually created on a temporary basis per project. They can be assembled by hiring people for a specific period of time or by taking over other IT team members and reassigning them to a specific project. These teams are usually disbanded after the project is completed or transitioned to another project. (Internet source)

It is very important to define teams in larger IT departments or companies. While people in an IT department may have the same knowledge, that does not make them all experts in certain parts of the company. Dividing IT people into teams helps develop a structured department or company and helps differentiate what the IT teams' jobs and priorities are.

Most IT teams are organized around processes or projects. In smaller organizations, most often in IT departments, IT people may be generalists with a wide range of technical knowledge. In larger organizations, teams tend to be more specialized.

10. Conclusion

IT covers a wide range of areas that include, but are not limited to, work processes, computer software, computer hardware, programming languages, and data structures. In short, anything that creates data, information, or knowledge, in any visual format, through any multimedia distributed mechanism, is considered part of the domain space known as information technology. (IT)

As we've mentioned in this paper, the IT department is the backbone of the modern workplace: without technology, most businesses would not be able to function effectively. Unfortunately, in many organizations, the only time people think about the IT department and what it does is when something goes wrong.

A good IT communication plan and strategy can help increase awareness of the department's role in the organization and any projects, initiatives, or other issues that the organization should know about. The results of effective communication stem from high levels of engagement, understanding, and comfort in working with a team on different tasks. As a project professional, he should have an arsenal of qualities, but the most important are good communication skills, which are one of the biggest drivers of business success. Good communication is an important component of project management, allowing projects to progress smoothly and on time. It ensures that team members are aligned with the project goals and understand exactly what is expected of them. It also helps build trust so that everyone works better together from the beginning to the end of the project.

11. LITERATURE:

10. Mastering Public Relations, Antony Davis, 2007, 2nd ed.

11. Steven Venette, 2003, „Risk communication in a High Reliability Organization: APHIS PPQ's inclusion of risk in decision making."

12. Edited by Norman A. Hart, foreword by Mike Beard, President of the Institute of Public Relations, „Strategic Public Relations".

13. Rogers, E. and Rogers, R., 1976, „Communication in organization. New York: The Free Press, a Division of Macmillan Publishing";

14. Hargie, O., Dickison, D. and Tourish, D., 1999, „Communication in management. England: Gower Publishing";

15. Keyton, J., 2005, „Communication and organizational culture: a key to understanding work experiences. Sage Publications";

16. Internet sources available at:

a. https://www.marketing91.com/communication-strategy/#:~:text=A%20communication%20strategy%20is%20a,and%20then%20formulating%20a%20plan

b. https://womsvetinikole.org.mk/public/wp-content/uploads/komunikaciska-strategija-2020-2024.pdf

c. https://www.indeed.com/career-advice/career-development/communication-strategy-template

d. https://www.northeastern.edu/graduate/blog/what-is-corporate-communications/

e. e. https://en.wikiversity.org/wiki/Introduction_to_Information_Technology

f. https://smallbusiness.chron.com/importance-communication-between-different-departments-organization-11901.html

g. https://www.gradwell.com/blog/how-to-structure-your-it-team/

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THE IMPACT OF DIGITALIZATION AND DIGITAL TOOLS ON TEACHING EFFICIENCY IN PRIMARY EDUCATION

Lila Karanfilovska

ABSTRACT

Digitalization is one of the most significant processes transforming modern education. From a teacher's perspective, the impact of digital tools on teaching efficiency is multifaceted and profound. The introduction of various digital technologies – such as interactive learning platforms (Google Classroom, Moodle), communication and collaboration tools (Zoom, Microsoft Teams), multimedia content and assessment applications (Kahoot, Quizizz) – enables a more dynamic, visually appealing and flexible teaching process. These tools enable teachers to better plan, organize and monitor teaching, as well as more effectively individualize teaching activities according to the needs and abilities of each student. At the same time, digitalization contributes to increased engagement and motivation among students, who are active participants in the learning process through research, discussion and creation. Through the use of digital resources, teaching becomes more interactive, with the opportunity to integrate different subject areas and develop digital competencies among students. However, this process also brings a number of challenges. Teachers face the need for continuous digital education, adaptation of teaching methods and provision of technical conditions for quality teaching. There is also a risk of unequal access to technology, which can create a digital divide between students. Overall, digitalization, when applied in a pedagogically designed and targeted manner, is a powerful instrument for increasing the effectiveness and quality of teaching. It enables the creation of a modern, inclusive and motivating educational environment, in which the teacher retains his central role as a mentor and moderator of learning.

Keywords: digitalization, digital tools, teaching efficiency, teacher, education, technology

1. Introduction

Digitalization, as a global process, is also changing education, encouraging the development of new models of teaching and learning. In primary education, where the foundations of knowledge and skills are laid, digital tools have a special role in improving the teaching process and increasing its efficiency. The inclusion of digital didactic materials in the teaching and learning process of students in primary education inevitably implies changes. Some of them relate to the training of teachers, others to the interactions and roles of members of the educational community, and others to the innovation of the educational process itself.

We are in an era in which printed books and other cultural media are giving way to the expansion and ubiquity of next-generation media. These technologies are leading to a profound transformation in our conception and format of culture. Digitalization has facilitated the creation and distribution of audiovisual content, democratizing the production of multimedia materials. Modern society demands a new role for educational professionals, a role that will not be limited by conventions or frameworks imposed by publishers. Educators must take on a new role when it comes to incorporating digital didactic materials, which includes creating digital resources with clear educational objectives, collaborating with other professionals to share experiences, and developing proposals that promote students' digital competences. The digital transformation of educational environments is an undeniable aspect of contemporary teaching and learning landscapes, highlighted by the integration of digital tools across various learning platforms.

Digitalization in education:

- **Digitalization** is the process of integrating digital technologies into all aspects of the education system. In the context of primary education, it includes the use of digital platforms, electronic textbooks, assessment applications, online collaboration and communication, as well as the creation of digital content. The theoretical foundations are related to constructivism and modern learning theories that emphasize the active role of the learner, self-regulation and learning through inquiry
- **Digital tools** – mean digital technology used for a specific purpose or function, for example, for information processing, communication, content creation, security or problem solving (personal computer, laptop, mobile phone, tablet, interactive whiteboards, TV, projectors, cameras, etc.);

Digital tools can be classified into several categories, as follows:

- Interactive learning platforms: Google Classroom, Moodle
- Communication tools: Zoom, Microsoft Teams
- Assessment tools: Kahoot, Quizizz, Socrative
- Multimedia: videos, simulations, interactive presentations

These tools enable individualized teaching, greater involvement and faster feedback.

- Digital content – means any type of content that exists in digital form, data encoded in a computer-readable format and that can be created, viewed, distributed, modified and stored using digital technology (online information, websites, online platforms, images, audio, video, online games, educational programs and applications, teaching materials, virtual classrooms, social networks, etc.)

The inclusion of technology and the development of digital competences at this level appear as a necessity because they contribute not only to increasing the efficiency of teaching but also to preparing children to live and learn in a society that is increasingly based on information and technology. This section aims to offer a clear framework for how technological development and its inclusion in education affect the quality of teaching and learning. For teachers, these competences are related to the ability to include technology in the teaching process, prepare digital content, manage online environments and support the development of digital skills among students. Together, these dimensions form the basis of a modern and inclusive education, adapted to the demands of the 21st century. Teachers, as bearers of the educational process, are at the center of this transformation. The use of interactive platforms, multimedia materials, communication tools and online resources enables more flexible, dynamic and student-centered teaching. But at the same time, numerous challenges arise related to digital competencies, technical support, and equal access to technology.

Students need to master a range of skills that include: the ability to search, analyze and critically use online information; basic technical skills for using computers, tablets, platforms and educational applications; as well as the ability to communicate and collaborate in digital environments. They also need to learn to prepare digital content (presentations, interactive activities, videos or creative materials), to respect authorship and sources, and to develop competences in the protection of personal data and online safety. By using technology to solve practical problems, students acquire reflective, critical and creative skills that help them become active and responsible users of technology.

The development of digital competences of teachers and students is an interconnected and inseparable process. As leaders of the teaching process, teachers have a key role in modeling and encouraging the use of technology, and through the acquired skills, students become active and aware users of digital tools. This interaction ensures that digital competences directly contribute to the quality of learning and to the preparation of generations for the information-based society.

Technology creates dynamic and attractive learning environments, engages students in the teaching process and at the same time plays an important role in the development of critical thinking and problem solving. Through interaction with digital content, students face challenges that require analysis, reflection and creativity, which makes them more active in the learning process.

One important dimension of the inclusion of technology in education is its use in the process of assessing students. In primary education, assessment is no longer limited to traditional forms (written tests or oral questions), but is enriched with digital platforms that offer opportunities for faster, more interactive and personalized feedback.

Platforms such as Google Forms, Microsoft Forms, Kahoot, Quizizz and other similar applications have become part of teaching practice and make the assessment process more engaging and inclusive. Through them, primary school teachers can prepare interactive quizzes, collect immediate data on students' progress and provide real-time feedback. Students, on the other hand, are more engaged because they expe-

rience assessment as a playful and motivating activity, rather than as a formal process that causes anxiety. In addition to the motivation aspect, technology has also contributed to the personalization of assessment. Digital platforms allow for the adaptation of questions and tasks according to the rhythm and individual needs of students and support differentiated learning and the development of skills in a more appropriate way. This personalization is particularly important in primary education, where individual differences between children are more pronounced. Another advantage is the opportunity that technology offers for the development of self-assessment and peer assessment. Through digital tools, students can reflect on their work, compare results with their classmates, and learn from each other. This helps them develop reflective, collaborative, and critical skills.

2. Literature Review

Contemporary literature consistently describes digitalization as a key driver of educational reform. According to many researchers, digital tools have the potential to significantly improve the quality of teaching by increasing interaction, motivation and individualization. Never before in human history has there been such a developed technology available for information as today. Globally, the rapid development of technology is considered the "fourth industrial revolution". Within this revolution, most existing professions require digital skills (Williamson et al., 2019).

Research shows that digital platforms such as Google Classroom and Moodle enable more efficient management of learning materials, better communication and rapid provision of feedback (Black & Wiliam, 2018). Multimedia content promotes visual and active learning, which is especially beneficial for students in primary education.

From a European perspective, digital competence encompasses the skills needed by an individual to function in a digitalised society (Hatlevik & Christophersen, 2013). To support this, many education systems use the European Framework for the Development of Digital Competence (DigComp) as a basic reference for planning and implementing different intervention strategies, on the basis of which DigCompEdu and DigCompOrg have been developed. These frameworks aim to assist Member States in promoting digital competence among citizens and in fostering innovation in education. Digital competence is defined as the ability to use digital devices, applications and communication networks to: access and manage information, communicate, collaborate, solve problems, produce and share digital content for learning and working in social and collaborative activities (UNESCO, 2018). In recent years, there have been different descriptions of an individual's skills related to the use of technology. Also, different terms are used, such as: ICT skills, technological skills, 21st century skills, digital skills, media skills, digital competence, etc. In more recent publications, the term competence is more frequently used than the term skills. The differences between the terms competence and skills are defined in more detail in an OECD project, which states: "Competence is more than just knowledge and skills. It includes the ability to meet complex demands and psycho-social resources (skills and behaviour) in a given context" (OECD, 2005, p. 4).

According to UNESCO (2021), the most common challenges are unequal access to technology, insufficient ICT support, technical barriers and limited digital literacy among teachers. These factors affect the success of digital reforms in education.

In the study by the University of Helsinki (2021), What is digital competence?, the term digital competence is described as a broader and constantly evolving concept, linked to developments in the field of technology, as well as to the goals of citizenship in a

knowledge-based society. In 2018, the Council of the European Union adopted recommendations on key competences for lifelong learning. Digital competence is one of the eight competences and is presented as: "The ability of an individual to confidently, critically and responsibly use and interact with digital technology for learning, performing tasks and participating in society. It includes understanding information and data, communication and collaboration, media literacy, digital content production (including programming), security (including digital well-being and online safety), intellectual property issues, as well as problem solving and critical and creative thinking. Therefore, fostering digital competence in all citizens is of great importance, and the main burden is borne by the education system and educational institutions at all levels" (EU, 2018). The use of information and communication technology (ICT) in education is one of the main pillars of global policies for quality and inclusive education. One of the most important documents in this direction is the UNESCO Framework for ICT Competences for Teachers (ICT - CFT), which was updated in 2018. This Framework aims to assist governments, educational institutions and teacher training providers in integrating ICT into the educational process. It is not just a technical tool but a catalyst for pedagogical change (UNESCO, 2018).

The use of technology in primary education represents one of the most significant changes in recent decades and directly affects the cognitive, social and emotional development of children. In international and domestic literature, technology is seen as an element that not only supports the teaching process but also reshapes it and creates more interactive and flexible environments. Research shows that the use of digital devices, online platforms and educational applications has a positive impact on the acquisition of basic knowledge and on increasing motivation for learning. Lin and Lin (Lin & Lin, 2018) found that the use of ICT in primary schools significantly improves reading and mathematics results and at the same time increases engagement in teaching.

According to Prof. Dr. Daniela Koceva, Vice-Dean of the Faculty of Educational Sciences at the University „Goce Delchev" in Shtip, „Thanks to technology, today we have tools that enable adaptive learning according to the individual needs of students. For example, AI systems can recognize weaknesses in a student and offer them targeted exercises for improvement. However, the future of education will not be in the hands of technology alone, but what will be important is how to maintain quality interaction between teacher and student, the socialization process, and at the same time, emphasize the development of critical thinking." According to Prof. Dr. Koceva, among the most used educational digital tools in education are Google Classroom, which is used to organize materials and monitor student progress.

While platforms such as Kahoot, Mentimeter, Quizizz, Class Craft enable interactive quizzes that increase engagement. The Zoom and Microsoft Teams platforms enable hybrid and online teaching, which has become particularly important, and at the same time have proven their role during the pandemic. Other visualization tools are Prezi, Canva, Padlet, Microsoft Whiteboard. Artificial intelligence in teaching: ChatGPT, Grammarly, Turnitin, Socratic. These tools not only facilitate learning but also make it more dynamic and interactive. Pupils and students access them more easily and participate more creatively in creating and solving problems, questions, discussions. However, modernization does not mean abandoning tradition, but a balance between classical methods and innovative approaches, adapted to the developmental profile of today's children. Innovative practice in primary education includes the use of educational digital games, work on simple projects, group collaboration, mind maps, role-playing games and the use of multimedia tools to develop 21st century skills.

3. Research methodology

The aim of this research is to determine how the use of digital tools affects the efficiency of teaching in primary education from the perspective of teachers. The survey was conducted with teachers working in rural and urban areas, 90 teachers of different ages and with different work experience were surveyed. The research questions were aimed at the following: Which digital tools are most often used by teachers in primary education?, What is the impact of digital tools on the efficiency of teaching? What are the most common challenges in the digitalization process? What kind of help do teachers need to successfully implement digitalization in teaching and realize efficient teaching, etc. Some of the questions were open-ended in order to examine the attitude and opinion of teachers on this topic. After processing all the data obtained, and in order to obtain relevant conclusions from this scientific paper, a statistical analysis of the data and a graphical presentation of the responses received from the survey questionnaire were made. The results and conclusions from this research can serve to create a policy to support teachers in successfully using digital tools in the teaching process, implementing modern teaching that will respond to the needs of students, encourage them to think critically and make decisions.

4. Findings/Results

According to the demographic structure of the respondents, it can be concluded that the majority of respondents belong to the age group 41–50 years (48.3%), followed by teachers over 50 years (31%). The share of teachers aged 31–40 years is smaller (17.2%), and the least are those under 30 years (3.4%). This indicates that the sample is predominantly composed of teachers with longer work experience.

In terms of place of work, 62.1% work in an urban environment, while 37.9% in a rural area, which allows for a comparison of the conditions for digitalization in different environments. Work experience is relatively evenly distributed, with the highest share among teachers with under 5 years and over 20 years of experience (27.6% each), indicating the presence of both beginners and highly experienced teachers.

Regarding the availability of digital equipment, the majority of teachers rate it as satisfactory (33.3%) or basic (33.3%), while a small percentage consider it good or excellent (13.3%). A significant proportion (16.7%) indicate insufficient equipment, which is a serious barrier to quality digital teaching.

To the question: How often do they use digital tools in teaching?

Most teachers (56.7%) report that they use digital tools often or daily, which indicates a high level of integration of technology in the teaching process. Only a small proportion use them rarely, and there are no teachers who do not use digital tools at all.

The most commonly used tools are:

- Educational videos (82.8%)
- PowerPoint presentations (79.3%)

Learning management platforms (Google Classroom, Moodle) and interactive tools (Kahoot, Quizizz) are used much less, indicating that digitalization is more focused on content presentation and less on interactive and student-centered learning.

Digital tools are most commonly used for:

- Explaining new content (96.6%)
- Project work (34.5%)

They are almost not used at all for homework and formative assessment, which represents an untapped potential of digital technologies.

The results of the Likert scale show a very positive attitude of teachers towards digitalization:

- Teachers believe that digital tools:
  - improve student motivation (M = 4.14),
  - make teaching more efficient (M = 4.28),
  - significantly facilitate the teaching process (M = 4.38),
  - create more dynamic and interesting teaching (M = 4.34).

At the same time, teachers have moderate confidence in their own digital competencies (M = 4.00), which indicates a need for additional training.

Interestingly, the claim that digital tools take too much time to prepare is rated with a low average value (M = 2.55), which means that most teachers do not consider this a serious problem.

Almost all respondents agree that digitalization should be systematically developed and supported in primary education (M = 4.28).

In the section where teachers should freely express their challenges and needs in teaching, they gave the following answer:

The most common challenges stand out:

- Insufficient or outdated technology (69%)
- Weak internet (41.4%)
- Insufficient ICT support and digital literacy among students (24.1%)

In terms of support, teachers most need:

- Fewer administrative obligations (62.1%)
- Technical support (41.4%)
- Training on specific digital tools (37.9%)

This shows that the problems are not only pedagogical, but also systemic and organizational.

Qualitative analysis – critical review – Open-ended responses indicate that teachers experience digitalization as a process that:

- changes their role from a knowledge transmitter to a mentor and guide,
- encourages innovation, creativity and individualization of teaching,
- facilitates preparation and increases motivation among students.

However, some teachers also point to negative aspects, such as:

- reduced concentration,
- screen addiction,
- reduced physical activity,
- weaker social interaction and creativity,
- risk of misuse of internet content

The results show that teachers have a predominantly positive attitude towards digitalization and recognize its value in improving the teaching process. However, there are clear challenges related to infrastructure, support and balanced use of technology by students. Therefore, digitalization should be developed in a planned manner, with continuous training, appropriate technical support and clear pedagogical guidelines.

5. Discussion and conclusions

Based on the conducted research and the analysis of the data obtained, the following conclusions can be drawn:

- Teachers in primary education show a high level of acceptance of digital technologies and recognize them as a significant factor in improving the quality of teaching. Digital tools are perceived as a means that increases student motivation and makes teaching more efficient and dynamic.
- The use of digital tools is most pronounced in the phase of presentation and explanation of teaching content, while their application in the processes of formative assessment, monitoring of progress and assigning homework is limited. This indicates a need to expand the pedagogical application of digital technologies.
- Although teachers mostly believe that they have adequate digital competencies, the results indicate that there is a need for continuous professional development, especially in the use of advanced and interactive digital tools.
- Insufficient and outdated digital equipment, unstable internet connection and limited ICT support represent key structural barriers to more effective integration of digital technologies in the teaching process.
- Qualitative analysis shows that digitalization transforms the role of the teacher from a traditional transmitter of knowledge to a mentor, guide and facilitator of learning, which requires the development of new professional and pedagogical competencies.
- At the same time, teachers point to potential negative consequences of increased digitalization among students, such as reduced concentration, superficial learning, dependence on digital devices and reduced social interaction, which emphasizes the need for careful and balanced use of technology in education.
- The general agreement among teachers that digitalization should be systematically developed and institutionally supported indicates the need for a clear educational policy and a long-term strategy for digital transformation in primary education.

Based on the conclusions obtained, the following recommendations are proposed:

- Systematic improvement of the digital infrastructure
  The competent institutions should ensure continuous investments in modern digital equipment and stable internet infrastructure, in order to enable equal access to digital teaching in all schools.
- Continuous professional development of teachers
  It is necessary to establish a sustainable system of professional development that will include training for pedagogically justified and effective use of digital tools, with a special emphasis on interactive teaching and digital assessment.

- Integration of digital tools in the assessment process
  To encourage the use of digital tools for formative and summative assessment, as well as for monitoring individual student progress, which will improve the quality of teaching evaluation.
- Reduction of the administrative burden on teachers
  Educational policies should provide for the simplification of administrative procedures and digitalization of documentation, in order for teachers to have more time for pedagogical and creative work.
- Development of digital literacy and critical thinking among students
  Include content in curricula that will contribute to the responsible, ethical and safe use of digital technologies, as well as to the development of critical thinking and media literacy.
- Ensuring a balanced approach to digital teaching
  Digital technologies should be used to support traditional teaching, taking into account the age of students, teaching objectives and psychophysical development.
- Strengthening institutional and technical support
  Establish functional ICT support in schools that will provide technical assistance and an advisory role for teachers in the implementation of digital teaching.

6. References

8. Burovski, J., *Analysis of digitalization in school through the theory of activities and the concept of multi-level learning*. Second-cycle student, Faculty of Educational Sciences, University "Goce Delchev", Štip.
9. Sardzoski, P. (2024). *Artificial intelligence as a catalyst for creativity in education: Overcoming fear and releasing potential.* Institute for Democracy "Societas Civilis" – Skopje; Konrad Adenauer Foundation. Volume 22, Issue 69, December.
10. Živanović, R., et al. (2010). *The use of computers and the Internet in the education system of the Republic of Macedonia.* Skopje: Open Society Institute Foundation – Macedonia; Metamorphosis Foundation.
11. Black, P., & Wiliam, D. (2018). Classroom assessment and pedagogy. *Assessment in Education: Principles, Policy & Practice,* 25(6), 551–575. https://doi.org/10.1080/0969594X.2018.1441807
12. European Commission. (2017). *European framework for the digital competence of educators (DigCompEdu).* Luxembourg: Publications Office of the European Union.
13. UNESCO. (2021). *Digital learning and transformation in education.* Paris: UNESCO Publishing.
14. Aleksieva, L., Racheva, V., & Peytcheva-Forsyth, R. (2025). Talking tech, teaching with tech: How primary teachers implement digital technologies in practice. *Informatics*, 12(3), Article 99. https://doi.org/10.3390/informatics12030099

7. Annexes

SURVEY SHEET

Survey for primary school teachers: The impact of digital tools on teaching

The survey is intended for primary school teachers in order to examine attitudes, opinions, experiences and critical perspectives on the use of digital tools and digitalization.

The survey contains closed questions, multiple choice (Likert scale), open questions and a critical section. The survey is anonymous and is used for research purposes.

I. General information (demographic data)

1. **Your age:**
- Up to 30 years
- 31–40 years
- 41–50 years
- Over 50 years

2. **Place where you work?**
- City
- Village

3. **Work experience as a teacher:**
- Under 5 years
- 5–10 years
- 11–20 years
- More than 20 years

4. **In which classroom do you work?**
- Class teaching (grades I–V)
- Subject teaching (grades VI–IX)

5. **Availability of digital equipment in your school:**
- Insufficient
- Basic
- Satisfactory
- Good
- Excellent

II. Use of digital tools in your practice

6. How often do you use digital tools in teaching?
- Never
- Rarely
- Sometimes
- Often
- Every day

7. Which digital tools do you use most often? (multiple choices possible)
- PowerPoint / Presentations
- Google Classroom
- Moodle
- Microsoft Teams
- Zoom
- Kahoot, Quizizz or similar
- Educational videos (YouTube, Learn360, etc.)
- Other: _____

8. For which activities do you most often use digital tools?
- Explaining new content
- Formative assessment
- Homework
- Project work
- Communication with students/parents
- Monitoring progress

III. Attitudes and opinions (Likert scale - 1 “strongly disagree” to 5 “strongly agree”)

9. Digital tools improve student motivation

1 2 3 4 5

10. The delivery of teaching content is more efficient with the use of digital technologies

1 2 3 4 5

11. The use of digital tools facilitates my teaching process

1 2 3 4 5

12. I have sufficient digital competences to use technology effectively

1 2 3 4 5

13. Digitalization creates more dynamic and interesting teaching

1 2 3 4 5

14. The use of digital tools takes too much time for me to prepare

1 2 3 4 5

15. Digitalization should be systematically developed and supported in primary education

1 2 3 4 5

IV. Challenges and barriers

16. What challenges do you most often face? (multiple choices possible)

- Insufficient technology / old equipment
- Weak internet
- Insufficient ICT support from the school
- Insufficient own digital literacy
- Insufficient digital literacy among students
- Insufficient preparation time
- Too much digital time for students
- Other: _____

17. What kind of support do you need the most?

- Training on certain digital tools
- Technical support
- Improvement of infrastructure
- Fewer administrative obligations
- Access to more digital resources
- Other: _____

V. Critical review of teachers

18. How is digitalization changing the character of the teacher‘s role?

19. In your opinion, what are the biggest negative consequences of increased digitalization among students?

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EMPATHY IN THE DIGITAL WORLD: DEVELOPING EMOTIONAL AND SOCIAL SKILLS THROUGH MEDIA EDUCATION

Sonja Trifunovska

ABSTRACT

In today's contemporary society, media and technology represent the primary means through which young people experience and interpret the world. The rise of social networks, online games, communication applications, and their constant use has imposed the need to strengthen emotional and social skills for safe and responsible use of the internet space. Within this framework, empathy in the digital world emerges as a key competence that should be developed in young people from an early age in order to preserve the human dimension of screen-based communication. This paper explores the role of media education in fostering empathy in the digital world, that is, the ability to understand the feelings of others in online communication. The research was conducted through a survey questionnaire among students aged 10 to 15, with the aim of determining the level of their empathy in the digital world and the influence of media literacy on behavior in online communication. The results indicate that media education plays a significant role in the development of emotional and social skills among young people, particularly in the development of empathy, respect, tolerance, and the ability to recognize the consequences of one's online actions. The paper also proposes concrete pedagogical approaches and activities that can be applied in the teaching process to develop empathy in communication via the internet. The conclusion emphasizes that media literacy is an essential part of the educational process, contributing to young individuals not only applying their digital skills and using media, but also becoming aware, sensitive, and responsible citizens of the digital society—an essential prerequisite for creating healthy interpersonal relationships and a safe online community.

Keywords: empathy, emotional skills, social skills, media literacy, online communication

1. Introduction

In contemporary society, marked by intensive technological development and increasing digitalization of everyday life, the way children and young people communicate has undergone significant transformation. The digital world, especially social networks and online platforms, has become the dominant space for socialization, expression, and information exchange, inevitably influencing the development of emotional and social competencies. Empathy represents a fundamental emotional and social skill that enables understanding of the feelings, thoughts, and needs of others, as well as appropriate responses in different social situations. Since communication in a digital environment takes place without direct contact, non-verbal signals, and emotional nuances present in face-to-face interaction, it can often lead to misunderstandings, reduced sensitivity to others' emotions, and the emergence of negative forms of behavior such as offensive comments, exclusion, cyberbullying, and hate speech. In this context, developing empathy is not only a challenge but also a necessity for creating a safe, supportive, and responsible digital communication environment based on respect, understanding of diversity, careful and ethical expression, recognition of others' emotions, and awareness of the consequences of one's own behavior in the online space.

This professional paper focuses on empathy among the age group of 10 to 15 years, as this is a period of intensive psychosocial development. During this phase, children gradually transition from childhood to adolescence, strengthening their need for acceptance, belonging, and self-affirmation. At the same time, they increasingly use digital media as a means of communication, entertainment, and learning. The way they develop their emotional and social skills during this period can have a long-term impact on their behavior, peer relationships, and participation in society.

Media education is recognized as one of the key mechanisms for supporting the development of empathy in the digital world. It is not limited solely to the technical use of media, but also includes critical thinking, recognition of ethical aspects of online communication, responsible sharing of content, and awareness of the consequences of one's behavior in the digital space. Through media education, students are enabled to recognize emotions behind digital messages, demonstrate respect and understanding for diversity, and respond with empathy in various communication situations.

Research on empathy in a digital context is particularly important from an educational perspective, as schools play a significant role in shaping young people's values and behavior. Integrating media literacy and emotional learning into teaching can contribute to the prevention of negative phenomena in the online space and to building a positive school climate based on mutual respect and cooperation.

The aim of this professional paper is to examine the level and manifestations of empathy among students aged 10 to 15 in a digital context, as well as to analyze the role and importance of media education in the development and enhancement of their emotional and social skills. Through analysis of students' attitudes, experiences, and habits related to digital communication, the paper seeks to highlight the need for a systematic and continuous approach to empathy development. Additionally, it emphasizes the importance of educational interventions that contribute to creating aware, responsible, and empathetic young individuals capable of humane and ethical interaction in digital society. For these reasons, the analyses and conclusions of this research are expected to contribute to a deeper and more comprehensive understanding of the needs and challenges students face in digital communication, as well as to

provide clear guidelines for creating and improving educational policies and pedagogical interventions aimed at systematically integrating media education and empathy development into curricula, in order to foster responsible, ethical, and socially sensitive behavior among students in the digital environment.

2. Literature Review

The development of digital technologies and the mass use of the internet and social networks have significantly transformed the way children and adolescents communicate, learn, and build social relationships. Today's younger generations grow up in an environment where digital communication is an integral part of everyday life, and online interactions often replace or supplement direct contact. According to data from UNICEF's research report *Childhood in a Digital World* (2025), the number of children accessing the internet from home has significantly increased over the past 20 years. These findings are based on analysis of survey data from 78 countries, areas, and territories participating in the OECD Programme for International Student Assessment (PISA). The data indicate that in these wealthier countries, as many as 97% of surveyed 15-year-olds had access to the internet at home. In such a digital context, empathy is recognized as a key socio-emotional competence enabling positive and responsible interaction.

Classical theories of empathy, such as those by Martin L. Hoffman (2000), define empathy as the ability to recognize and experience the emotions of others, while more recent models distinguish between cognitive empathy (understanding others' perspectives) and affective empathy (emotional response to others' feelings) (Decety & Jackson, 2004). These aspects of empathy are particularly significant in digital communication, where non-verbal cues are limited or entirely absent.

Research shows that digital communication can have a dual effect on the development of empathy among children and adolescents. On one hand, the online environment enables connection with people from different cultures and contexts, contributing to the development of tolerance and understanding. On the other hand, anonymity, physical distance, and the speed of communication can lead to reduced sensitivity to others' emotions and the emergence of negative behaviors such as cyberbullying and hate speech (Slonje, Smith & Frisén, 2013). Numerous international studies indicate that children and young people who spend a significant amount of time in online communication without appropriate support and education exhibit lower levels of empathetic behavior. Konrath, O'Brien, and Hsing (2011) observed a trend of declining empathy among young people over recent decades, partially associating it with increased use of digital media. Similarly, Turkle (2015) emphasizes that constant online connectivity can weaken the capacity for deep empathetic face-to-face communication.

Special attention in the literature is given to the age period of 10 to 15 years, considered critical for the development of social and emotional skills. At this age, children develop greater self-awareness and awareness of others, while the influence of peers and the digital environment becomes more pronounced (Steinberg, 2014). Research by Livingstone and Smith (2014) shows that adolescents are particularly vulnerable to negative aspects of online interaction, yet simultaneously open to learning and developing positive digital habits when provided with appropriate education.

In this context, media education emerges as a key factor for developing empathy and social responsibility in the digital world. According to Hobbs (2010), media literacy encompasses not only technical ability to use media, but also critical understanding of content, ethical evaluation, and active, responsible participation in media culture.

UNESCO (2021) emphasizes media and information literacy as an essential competence for 21st-century citizens, particularly in the context of digital communication and social networks.

Research linking media education and empathy points to positive effects of systematic educational interventions. Schultze-Krumbholz et al. (2016) demonstrate that programs combining media literacy and social-emotional learning significantly reduce participation in cyberbullying and increase empathetic responses among students. Similar findings are reported by Jones et al. (2017), where integrating empathy into teaching contributes to improved interpersonal relationships and more responsible online behavior. Additionally, social-emotional learning (SEL) programs implemented across various educational systems worldwide show significant benefits for the development of empathy and digital responsibility. According to the meta-analysis by Durlak et al. (2011), students participating in SEL programs exhibit improved social skills, greater empathy, and lower levels of problematic behavior, including in digital environments.

Despite the growing body of research on digital media and their impact on child and adolescent development, analysis of relevant literature indicates significant research gaps. A large proportion of existing studies focus primarily on negative consequences of digital media use—such as addiction, exposure to risky content, and cyberbullying—while the potential of media education as a preventive, developmental, and educational mechanism remains insufficiently explored. Furthermore, empirical studies targeting the 10 to 15 age group and examining empathy within the broader context of digital communication and online interactions are lacking. This limitation reduces understanding of the complex processes through which the digital environment can also contribute to positive socio-emotional development among young people.

It can therefore be concluded that there is a clear need for further systematic, methodological, and interdisciplinary research examining the role of media education in the development of empathy and socio-emotional skills among children and adolescents. Such research is essential for creating and improving effective educational policies and pedagogical practices that adequately respond to the challenges of contemporary digital society and contribute to the development of responsible, ethical, and empathetic young citizens.

3. Research Methodology

The aim of this research is to examine the experiences, attitudes, and perceptions of students aged 10 to 15 regarding empathy in their online communication. Special emphasis is placed on how students understand and practice empathy and respect when using digital platforms, as well as on the role of educational activities in supporting and developing these socio-emotional skills. The research was conducted using a quantitative approach, with a survey questionnaire as the primary data collection instrument. The research design is descriptive-analytical, aiming to gain insight into students' experiences, attitudes, and perceptions related to empathy in digital communication. This approach allows systematic examination of the prevalence of certain behaviors and attitudes, as well as identification of educational and social factors associated with empathy development in the digital environment.

The research sample consists of 320 students aged 10 to 15, covering late childhood and early adolescence—a period particularly significant for social and emotional development and intensive use of digital technologies. The research was conducted in 23 primary schools located in 18 municipalities across the country, enabling rela-

tively broad geographical representation and diversity of socio-educational contexts. Schools and students were selected based on availability, with efforts made to include students from different environments (urban and rural) in order to obtain a more realistic national-level picture.

A structured questionnaire with 10 questions was used as the research instrument, designed to examine students' experiences, attitudes, and perceptions regarding empathy in online communication. The questionnaire was age-appropriate and formulated in clear and understandable language.

The questions addressed the following thematic areas:

- frequency of internet and social media use for communication;
- awareness of others' emotions during online communication;
- responses to online insults;
- perception of the impact of digital communication on others' feelings;
- importance of empathy and respect in the digital space;
- role of school and educational activities in empathy development.

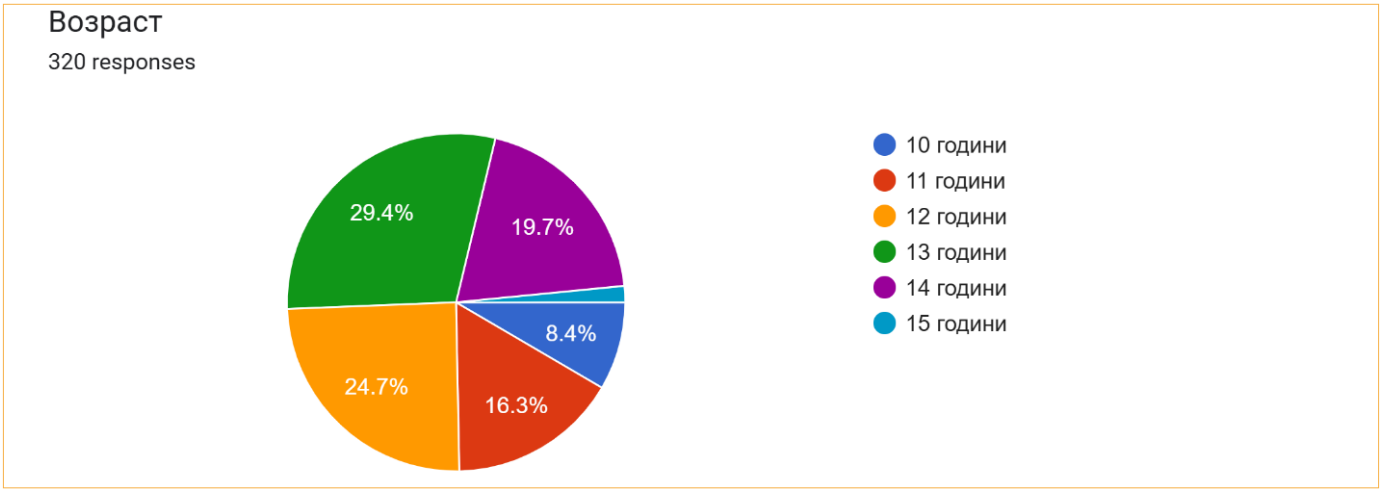
Questions were closed and semi-open, allowing for quantitative analysis as well as additional clarification of students' views.

Following data processing, statistical analysis was conducted to derive relevant and applicable conclusions regarding empathy in online communication. For clearer and more transparent presentation, results were also displayed through graphical visualizations, enabling better understanding of behavioral patterns, attitudes, and perceptions related to empathy in digital communication platforms. The conclusions of this research carry significant potential for shaping and improving media education strategies and may serve as a foundation for developing educational policies that enable comprehensive and systematic integration of media and digital education into curricula, with particular focus on empathy, respect, and responsible behavior in young people's online communication.

4. Findings / Results

The results presented in this chapter provide a detailed insight into the complex dynamics of empathetic behavior among young people aged 10 to 15 within their digital socialization. Empirical data collected through this research confirm the initial thesis that the digital space is not merely a neutral information channel, but a specific psychosocial context actively reshaping respondents' emotional reactions. Analysis of responses indicates a clear differentiation between cognitive empathy - the ability of students to rationally understand others' positions - and affective empathy: the capacity for authentic emotional resonance under conditions of reduced non-verbal cues.

The research included 320 students aged 10 to 15 from 23 primary schools in 18 municipalities. Of these, 8.4% were aged 10, 16.3% aged 11, 24.7% aged 12, 29.4% aged 13, 19.7% aged 14, and 1.6% aged 15.



Results from the questionnaire analysis are as follows:

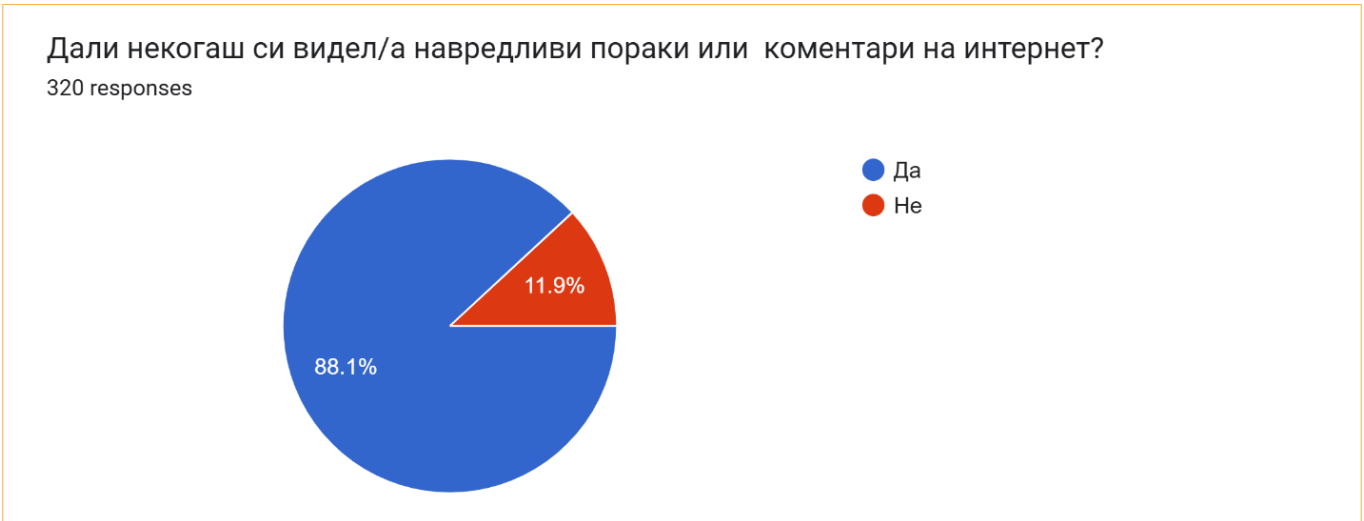
Question 1: "How often do you use the internet or social networks to communicate with others?"

48.8% answered very often, 35.3% often, 13.7% sometimes, 1.2% never, and 0.9% rarely.

Question 2: "When you write an online message, do you think about how the other person might feel?"

54.4% answered always, 27.5% often, 13.1% sometimes, 3.4% never, and 1.6% rarely.

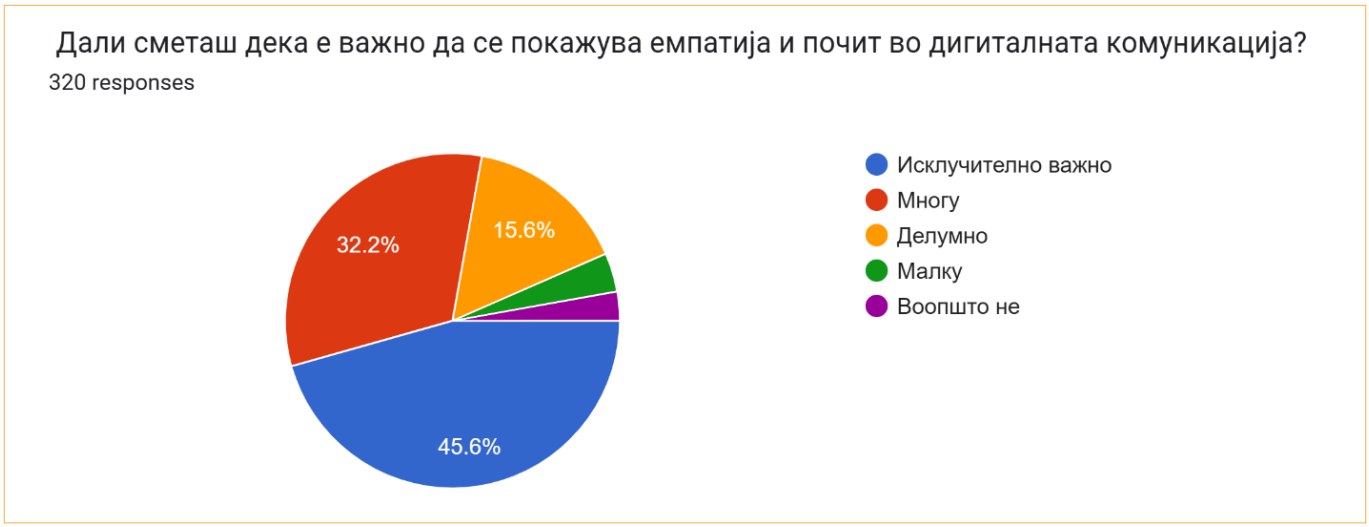
Question 3: "Have you ever seen offensive messages or comments online?"
88.1% answered yes, and 11.9% no.



Question 4: "How do you usually react when you see someone being insulted online?"
31.6% ignore it, 22.8% are unsure how to react, 18.4% support the victim, 17.5% report the abuse, 3.1% engage in conversation to explain the behavior is inappropriate, and 6.6% provided additional responses describing specific situations.

Question 5: "Do you think words online can hurt just as much as words face to face?"
59.1% answered very much, 31.3% partially, 7.2% a little, and 2.5% not at all.

Question 6: "Do you think it is important to show empathy and respect in digital communication?"
45.6% answered extremely important, 32.5% very important, 15.6% partially, 3.7% a little important, and 2.8% not important at all.



Question 7: "What do you think helps most in improving communication and understanding among students online?"

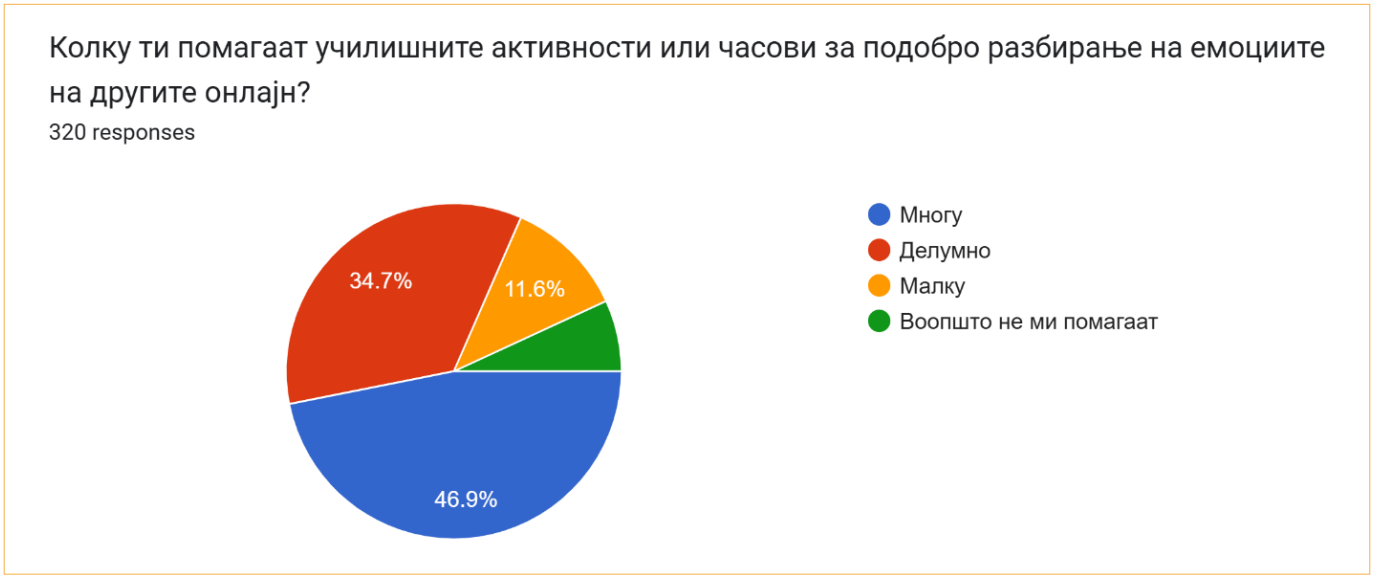
55.6% chose conversation, 9.1% media literacy education, 3.7% clear rules of behavior, 2.8% support from teachers and parents, 27.5% all of the above, and 1.3% gave other responses.

Question 8: "Have you learned at school how to behave safely and respectfully online?"

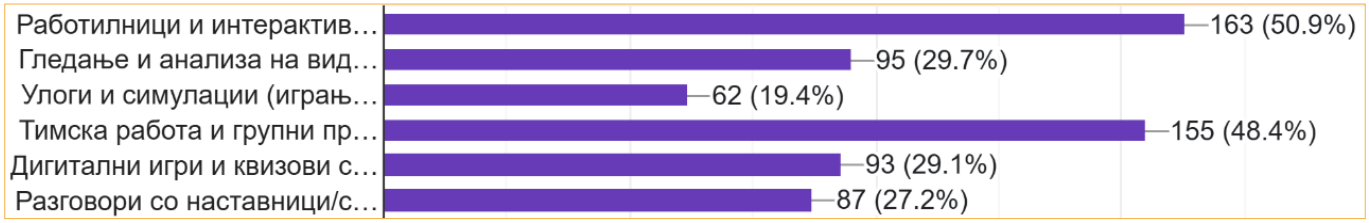
79.1% answered yes, 16.2% unsure, and 4.7% no.

Question 9: "How much do school activities or classes help you better understand others' emotions online?"

46.9% answered very much, 34.7% partially, 11.6% a little, and 6.9% not at all.



Question 10: *"Which school activities help you most in developing empathy and respect in digital communication?"*, students were allowed to select more than one answer from the options provided. The results show that the largest proportion of students believe that workshops and interactive discussions make the greatest contribution to the development of empathy and respect in digital communication (50.9%). This is followed by teamwork and group projects (48.4%), watching and analyzing videos or online examples related to empathy and respect in online communication (29.7%), as well as digital games and quizzes with educational content (29.1%). In addition, 27.2% of students highlight the importance of conversations with teachers and professional support staff (pedagogues, psychologists), while 19.4% believe that role-play and simulations (role-playing, scenarios) contribute to the development of empathy and respect in the digital environment.



The results of the research indicate that the internet and social networks represent a central communication space for students aged 10 to 15, highlighting their significant role in the social and emotional development of young people. According to the responses from the survey questionnaire, students demonstrate a relatively high level of awareness of the emotional impact of online communication and of the importance of empathy and respect in digital interactions. At the same time, the research confirms that exposure to offensive and inappropriate content is frequent, pointing to the presence of risks in the digital environment. Although students largely recognize the negative consequences of unethical online behavior, the results indicate a limited readiness for active and responsible response in such situations. This points to the need for additional strengthening of social and emotional competencies, as well as practical skills for constructive action in the digital space. Furthermore, the results emphasize the significant role of education in the development of empathy in online communication, with interactive and collaborative forms of learning being recognized as particularly effective.

Overall, the research suggests that although there is a basic level of awareness and generally positive attitudes among students, a more comprehensive and systematic educational approach is necessary to support the development of safe, responsible, and empathetic digital communication.

5. Discussion and Conclusions

The results of the conducted research offer significant insight into students' experiences, attitudes, and perceptions regarding empathy in online communication. The data confirm that the internet and social networks are an integral part of young people's everyday communication, making the digital space a key arena for the development of social and emotional competencies. The fact that almost all students use the internet for communication, with the majority doing so very often or often, highlights the need for a systematic approach to education in digital literacy and empathy.

With regard to the ability to recognise and understand the emotions of others in a digital environment, the results indicate an encouraging level of empathetic awareness among a significant proportion of students. More than half of the respondents stated that they always think about how the other person might feel when writing online messages, while an additional significant percentage do so often. This indicates that there is a foundation among students for the development of empathetic behaviour in online communication. However, the presence of students who rarely or never think about the emotional impact of their messages points to the existence of a gap between awareness and practical behaviour, which requires further educational intervention. Particularly concerning is the finding that a large proportion of students have witnessed offensive messages or comments online. This result confirms the prevalence of online violence and highlights the vulnerability of young people in the digital space. The ways in which students react in such situations further illustrate the challenge: the most common response is ignoring the situation or feeling unsure how to act. Although some students stated that they would support the victim or report inappropriate behaviour, a relatively small percentage actively engage in preventing the abuse. This indicates that empathy as an attitude does not always translate into empathetic and responsible action.

The results also show that students largely recognise the weight and impact of words in digital communication. Most believe that online words can hurt just as much as words spoken face to face, and that showing empathy and respect in digital communication is extremely or very important. These attitudes represent a significant foundation for building a positive digital culture, but at the same time point to the need for support in their practical application.

The role of the school as a key factor in the development of empathy in online communication is clearly highlighted in the results. A large proportion of students stated that they have learned at school about safe and ethical behaviour on the internet, and that school activities help them better understand the emotions of others in the digital space. Workshops, interactive discussions, teamwork, and group projects stand out as the most effective activities, indicating that experiential and participatory learning has the strongest impact on the development of empathy.

Based on the obtained results, it can be concluded that although students demonstrate awareness of the importance of empathy in digital communication, its further systematic development is necessary. From this follow the key recommendations for education and society that emerge from the findings of this research. At the educational level, it is recommended to integrate content on empathy, digital ethics, and media literacy into curricula not as isolated topics, but as a continuous and interdisciplinary process. Teachers and professional support staff should receive additional training in applying interactive methods

that encourage critical thinking, emotional literacy, and responsible digital behaviour. At the societal level, the results indicate the need to strengthen cooperation between schools, parents, and the wider community. Parents should be actively involved through educational programmes and campaigns that support empathetic and safe online communication. In addition, it is necessary to develop clear policies and strategies for the prevention of online violence and the promotion of a positive digital culture. Only through a joint, coordinated approach can education and society contribute to creating a digital environment in which empathy, respect, and responsibility are fundamental values.

6. References

20. UNICEF Innocenti – Global Office of Research and Foresight (2025). Childhood in a Digital World: Screen Time, Skills and Mental Health. June 2025.
21. Hoffman, M. L. (2000). Empathy and Moral Development: Implications for Caring and Justice. Cambridge, UK: Cambridge University Press.
22. Decety, J., & Jackson, P. L. (2004). The Functional Architecture of Human Empathy. Behavioral and Cognitive Neuroscience.
23. Slonje, R., Smith, P. K., & Frisén, A. (2013). The nature of cyberbullying, and strategies for prevention. Computers in Human Behavior.
24. IREX; Macedonian Institute for Media; Institute of Communication Studies; Youth Educational Forum (2022). Media Literacy: A Training Manual – Learning to Recognise.
25. (Original title: Медиумска писменост: прирачник за обучувачи – Учиме да распознаваме)
26. Konrath, S. H., O'Brien, E. H., & Hsing, C. (2011). Changes in Dispositional Empathy in American College Students over Time: A Meta-Analysis. Personality and Social Psychology Review.
27. Turkle, S. (2015). Reclaiming Conversation: The Power of Talk in a Digital Age. New York: Penguin Books.
28. Shurbanovska, O. (2019). Empathy as a Key Characteristic of Sociability in Children and Adolescents. Skopje: Faculty of Philosophy.
29. Steinberg, L. (2014). Age of Opportunity: Lessons from the New Science of Adolescence. USA: Houghton Mifflin Harcourt.
30. Livingstone, S., & Smith, P. K. (2014). Annual Research Review: Harms Experienced by Child Users of Online and Mobile Technologies – The Nature, Prevalence and Management of Sexual and Aggressive Risks in the Digital Age. Journal of Child Psychology and Psychiatry.
31. Hobbs, R. (2010). Digital and Media Literacy: A Plan of Action. The Aspen Institute.
32. Schultze-Krumbholz et al. (2016). Feeling cybervictims' pain – The effect of empathy training on cyberbullying.
33. Jones, S. M., & Doolittle, E. J. (2017). Social and Emotional Learning: Introducing the Issue. The Future of Children.
34. Durlak et al. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions.

7. Appendices

STUDENT QUESTIONNAIRE

Dear students,

This questionnaire is part of a research study entitled "Empathy in the Digital World: Developing Emotional and Social Skills through Media Education." The purpose of the survey is to gain insight into your attitudes, experiences, and habits related to communication in the digital environment, the use of social networks, and showing empathy toward others online.

Your participation is anonymous, and the answers will be used exclusively for educational and research purposes. Through your responses, you contribute to a better understanding of how media education can help develop empathy, respect, and responsible behavior in the digital world.

Thank you for your time and cooperation!

1. How often do you use the internet or social networks to communicate with others?
2. When you write an online message, do you think about how the other person might feel?
3. Have you ever seen offensive messages or comments on the internet?
4. How do you most often react when you see someone being insulted online?
5. Do you think that words on the internet can hurt just as much as words spoken face to face?
6. Do you think it is important to show empathy and respect in digital communication?
7. What do you think helps most in improving communication and understanding among students online?
8. Have you learned at school how to behave safely and respectfully on the internet?
9. How much do school activities or classes help you better understand other people's emotions online?
10. Which school activities help you most in developing empathy and respect in digital communication?

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Sonja Trifunovska is a mentor teacher at the primary school “Goce Delchev” in Tetovo, an EDUINO ambassador, and coordinator of the Association of Classroom Teachers “UCHITEL”. Her educational work, which places the child at the center of the learning process, can be described as creative, innovative, and aligned with contemporary educational achievements. She is the author of educational picture books and an internal teaching manual for applying instructional techniques in Macedonian language teaching at the classroom level. She has served as a reviewer of numerous textbooks and teaching manuals for classroom instruction and has authored several professional papers published in international scientific journals. She is a national trainer in media and language literacy, as well as a lecturer in many trainings and webinars in the field of education. Her professional success is reflected not only in teaching, but also in extensive extracurricular activities and participation in educational projects. She is the recipient of the Award for Contribution to Education and Promotion of the City from the Municipality of Tetovo in 2022, as well as the Education Award from the “Veshta Zhena” Association in 2019 and 2022.

FROM GAME TO ALGORITHM INTEGRATION OF GAMING AND AI TO ENCOURAGE CRITICAL THINKING IN STUDENTS

Maja Mitevska-Poceva

ABSTRACT

This paper explores the role of gamification as an innovative pedagogical strategy and its integration with AI tools to promote critical thinking among primary school students. Through the analysis of contemporary theoretical models and best practices, the potential of gamified activities supported by intelligent systems to enhance students' motivation, engagement, and cognitive abilities is discussed, while simultaneously developing their critical awareness of media and digital reality. Critical thinking, as an essential competency of the 21st century, enables students to logically analyze, evaluate, and make evidence-based decisions. It represents a process that overcomes the limitations of bias, impulsive reasoning, and one-sided perspectives, relying on values such as clarity, accuracy, consistency, relevance, and fairness. In this context, artificial intelligence is not just a technological tool, but also a cognitive challenge that requires the development of critical skills for analyzing, interpreting, and evaluating algorithmically generated content. Learning with and through AI promotes awareness of how algorithms select and present information, enabling students to recognize potential manipulations, biases, and limitations of digital systems. The paper proposes an integrative learning model that connects elements of play, technology, and cognitive autonomy, creating an environment that fosters development, innovation, and freedom of thought. In this way, the integration of gamification and AI emerges as a key tool for building a generation of students who can navigate the complex informational landscape of modern society critically, creatively, and ethically.

Keywords: gamification, artificial intelligence, critical thinking, media literacy.

1. Introduction

Modern society is in a period of accelerated digital transformation, in which digital technologies and artificial intelligence (AI) have an increasingly profound impact on everyday life. The way information is created, processed, and distributed is increasingly mediated by algorithms and automated systems that participate in content selection, public opinion shaping, and decision making. In such a context, education faces an increased responsibility – to respond to the needs of generations of students who grow up in a digital and media-saturated environment, in which technology is not just a means, but an active factor in the learning and socialization process.

Students today are exposed to a continuous flow of information, which is often fragmented, algorithmically selected, and not always reliable. Traditional teaching approaches, focused mainly on the transmission and reproduction of knowledge, are increasingly proving to be insufficient for developing the skills needed for a critical understanding of the complex digital reality. Hence, the development of critical thinking is imposed as one of the key goals of modern education.

Critical thinking is considered an essential competency of the 21st century, as it enables students to approach information analytically, assess its reliability and relevance, and make reasoned decisions based on evidence. It is a complex process that includes logical reasoning, evaluation of arguments, self-reflection and awareness of one's own cognitive limitations. In conditions of information overload, misinformation and digital manipulations, critical thinking becomes a prerequisite for the development of responsible, autonomous and ethically aware persons.

In this educational landscape, artificial intelligence takes on a dual role. On the one hand, it is a powerful pedagogical tool that enables personalized and adaptive learning, automatic feedback, and monitoring of student progress. On the other hand, AI presents a cognitive and ethical challenge because the algorithms that support its functionality often function as non-transparent systems, whose influence on opinion and behavior is not always easily recognizable. Therefore, learning with and about artificial intelligence should not be reduced to technical literacy, but should include developing a critical awareness of the way algorithms mediate information and shape digital reality.

In parallel with technological advancements, contemporary pedagogy is increasingly emphasizing the importance of active and student-centered teaching approaches. In that direction, gamification stands out as an effective pedagogical strategy that integrates game elements into the teaching process to increase student motivation, engagement, and cognitive activity. The game, as a natural form of learning, creates a safe environment for research, experimentation, and learning through experience, which is particularly significant for the development of logical, creative, and critical thinking.

Gamified activities allow students to actively participate in solving problems, making decisions and developing strategies, whereby learning is experienced as a meaningful and dynamic process. When these activities are supported by tools based on artificial intelligence, conditions are created for adaptive and personalized learning, adapted to the individual needs and abilities of students. Such an approach encourages self-regulation, autonomy and responsibility in the learning process, but at the same time enables the development of algorithmic thinking as an important cognitive skill.

However, the integration of gamification and artificial intelligence in education is not without challenges. There are risks of superficial application of game elements, aimed at external rewards, as well as the danger of uncritical acceptance of algorithmic recommendations. Therefore, a carefully thought-out pedagogical approach is necessary that places technology as a function of the development of critical thinking, rather than as an end in itself.

In that context, the concept „from game to algorithm" emerges as a significant educational framework. It implies a gradual transition from learning through play to structured, logical, and algorithmic thinking, whereby students are introduced to the processes of analysis, planning, and decision-making through game activities. Starting from these observations, this paper aims to consider the integration of gamification and artificial intelligence as an innovative model for encouraging critical thinking among elementary school students, aligned with modern educational needs and values.

2. Literature review

2.1. Critical thinking in a digitally and algorithmically mediated educational context

Critical thinking is one of the central educational goals of modern education and is widely recognized as an essential competence for active, responsible, and ethically conscious participation in the knowledge society. Students today are not only faced with the need to acquire knowledge but also to question the sources, contexts, and intentions behind the information that is brought to them through digital media and intelligent platforms.

In the national education system, critical thinking is clearly defined as a key competence for lifelong learning. The Education Development Bureau (BRO, 2020) highlights it as an ability that develops through the active involvement of students in processes of analysis, argumentation, problem solving, decision making, and reflection. These processes imply the abandonment of traditional, reproductive learning models and a transition to teaching strategies that place the student at the center of the educational process.

In the digital environment, critical thinking is inextricably linked to media and digital literacy. The Agency for Audio and Audiovisual Media Services (AAVMU, 2021) indicates that students are exposed to a continuous flow of information, the selection and ranking of which is often done through algorithms that are not transparent to the user. This reality creates a need to develop a critical awareness of the way algorithms influence the perception of reality, the formation of attitudes, and decision-making.

The Macedonian Media Institute (2022) further emphasizes that critical thinking in the digital age cannot be considered in isolation from issues of media ethics, responsibility, and social impact. Students should be empowered not only to use digital tools technically but also to cognitively question their results, question the accuracy and objectivity of information, and develop an awareness of the limitations and biases of algorithmically generated content. In this context, critical thinking also acquires a clear value dimension. It is not only a cognitive skill, but it is the basis for the formation of an independent, responsible, and ethically aware person. This aspect is particularly significant because it considers education not only as a technical process, but also as a space for shaping the human personality and value system.

The integration of artificial intelligence in education further reinforces the need to de-

velop critical thinking. Artificial intelligence works on the basis of complex algorithms and large databases, and its results are often perceived as objective and indisputable. According to UNESCO's recommendations for North Macedonia (2023), education should prepare students to be critical users of AI, capable of understanding the principles of its functioning and evaluating its results from an ethical, social, and educational perspective.

From a pedagogical point of view, the development of critical thinking requires the creation of teaching situations that activate higher cognitive levels – analysis, synthesis, and evaluation. Traditional frontal methods are insufficient to achieve these goals, especially in the digital educational environment. Therefore, modern teaching approaches are increasingly directed towards problem-oriented, research and interactive activities that encourage student autonomy and reflection (MES, 2021).

2.2. Gamification as a pedagogical mechanism for the development of critical and algorithmic thinking

Gamification in education is a modern pedagogical approach based on the integration of game-specific elements – rules, goals, challenges, feedback, and symbolic rewards – in teaching contexts with clearly defined educational goals. Unlike spontaneous play, gamification is developed as a structured didactic model, the purpose of which is to increase students' motivation, engagement, and cognitive activity.

In the Macedonian educational context, learning through play is particularly emphasized in primary education, where play is recognized as a natural way of learning and a means of developing cognitive, social, and emotional competencies (Ministry of Education, 2019). According to the guidelines of the Education Development Bureau (2020), gamified teaching activities create conditions for active participation of students, encourage an investigative spirit, and enable the development of critical and logical thinking.

The key pedagogical value of gamification lies not only in its motivational potential but also in its ability to structure student thinking. Through clearly defined rules and goals, the game creates a cognitive framework in which students begin to think systematically, plan steps, and predict the consequences of their choices. These processes represent the basis for the development of algorithmic thinking.

Research conducted within the pedagogical faculties in North Macedonia indicates that gamified activities enable a gradual transition from intuitive and experiential learning to organized and analytical thinking (Faculty of Pedagogy - Bitola, 2021). Through repeating game situations and solving problems within the game, students begin to recognize patterns, rules, and logical connections.

Within the concept of „From Game to Algorithm, the game appears as the initial catalyst of cognitive development. It creates a safe environment for experimentation, in which a mistake is not perceived as a failure, but as an opportunity for learning and reflection. This aspect is of particular importance for the development of critical thinking, as it encourages students to question their own strategies and assumptions. In addition, gamification enables the development of metacognitive skills, that is, awareness of one's own thought processes. When students think about why a particular strategy works or doesn't work, they move to higher cognitive levels, which is a key step in developing critical thinking.

2.3. From Game to Algorithm: Integration of Gamification and Artificial Intelligence

Algorithmic thinking is a key cognitive skill in modern society, which increasingly relies on digital and intelligent systems. Although traditionally associated with programming and informatics, contemporary pedagogical literature indicates that algorithmic thinking is a broader concept that includes the ability to logically structure problems, plan steps, and make decisions based on clear rules and conditions.

In the Macedonian educational context, the development of algorithmic thinking is in accordance with the strategic documents for the promotion of digital competences among students, emphasizing the need for the integration of innovative teaching approaches that connect technology and critical thinking (Ministry of Education and Science, 2021). In that process, the game is imposed as a natural and pedagogically justified starting point for the introduction of algorithmic principles.

Gamified activities create a context in which students intuitively adopt the basic elements of algorithmic thinking: sequence of steps, conditions, repetition and consequences. Through the game, students face problem situations that require planning, predicting, and correcting strategies. This process enables a gradual transition from experiential and intuitive learning to structured and systematic thinking, which is the essence of the concept „From Game to Algorithm".

In this context, algorithmic thinking does not develop in isolation, but is closely related to critical thinking. When students analyze why a particular strategy is successful or unsuccessful, they question their own assumptions, analyze results, and draw conclusions based on evidence. These cognitive processes directly contribute to the development of critical thinking, especially in contexts involving complex and dynamic situations.

The integration of artificial intelligence into gamified learning further deepens this process. AI tools enable adaptive learning by adjusting task difficulty, tracking student progress, and providing personalized feedback. In the Macedonian educational discourse, this approach is considered as an opportunity to improve the quality of teaching, but also as a challenge that requires the development of critical awareness among students (UNESCO North Macedonia, 2023).

From a pedagogical point of view, AI should not be used as an automated control or evaluation mechanism, but as a cognitive partner that supports the student in the thinking process. When students work with AI-supported gamified systems, they are faced with algorithmic decisions that can and should be subject to analysis and discussion. In this way, AI becomes a means of developing a critical awareness of the way intelligent systems work and of their potential limitations and biases (AAVMU, 2021).

In addition, such integration enables the development of metacognitive skills, as students receive feedback that directs them to self-reflection and correction of their own strategies. This process is consistent with the Bureau of Educational Development's recommendations for active and student-centered learning, which emphasizes the process, not just the result (BRO, 2020).

Hence, the integration of gamification and artificial intelligence can be seen as an innovative pedagogical model that connects experiential learning with algorithmic thinking and critical analysis. The concept „From game to algorithm" reflects exactly this evolution of student thinking – from game as a form of engagement, through algorithm as a cognitive structure, to a critical awareness of the role of technology in modern society.

2.4. Integrative model: game – algorithm – artificial intelligence – critical thinking

Contemporary pedagogical literature increasingly points to the need for integrative educational models that overcome fragmented approaches to learning and enable the connection of different cognitive, affective, and technological dimensions of the teaching process. In that context, the „game - algorithm - artificial intelligence - critical thinking" model represents a modern framework that connects natural student motivation with structured thinking and critical analysis of digital reality.

The game, as the starting point of the model, is recognized as a fundamental medium for learning, especially in primary education. It enables active participation, experimentation, and emotional involvement, creating a safe environment in which students are free to explore and make mistakes. Pedagogical research indicates that this kind of environment is a prerequisite for the development of higher cognitive processes, because through play, students spontaneously enter situations that require decision-making, planning, and assessment of consequences (Ministry of Education, 2019; BRO, 2020).

The algorithm, as the second component of the model, represents a cognitive structure that emerges from the gaming experience. Through repetition of game situations, students begin to recognize rules, patterns, and logical connections, which leads to the gradual formation of algorithmic thinking. In this context, the algorithm is not understood exclusively as a technical term related to programming, but as a way of thinking that implies breaking down problems into steps, predicting outcomes, and making systematic decisions (UKIM, 2020).

Artificial intelligence, as the third component of the integrative model, has a dual role: supporting and challenging. On the one hand, AI enables personalized and adaptive learning by analyzing student progress, adjusting tasks, and providing timely feedback. On the other hand, it represents an algorithmically mediated system that itself becomes an object of critical analysis. In an educational context, this opens up the opportunity for students not only to learn with the help of AI, but also to learn about AI – to understand its limitations, biases, and impact on decision-making (UNESCO North Macedonia, 2023; AAVMU, 2021).

Critical thinking emerges as an integrative result of the interaction between the game, the algorithm, and the artificial intelligence. In this model, students are not passive users of technology, but active subjects who analyze their own actions, question algorithmic solutions, and evaluate the results of digital systems. Critical thinking is developed through constant reflection, comparing alternative strategies, and making reasoned conclusions, which is in line with national educational priorities for the development of autonomous and responsible students (BRO, 2020).

The literature indicates that such an integrative approach is particularly relevant in a digitally and media-saturated environment, where students are daily confronted with algorithmically selected content. Through gamified and AI-supported activities, teaching can create conditions for students to develop an awareness of the way information is generated and mediated, as well as to build a critical distance towards digital authorities.

This model can also be seen as a value framework that connects technology with the educational mission of education. The integration of the game, algorithmic thinking, and artificial intelligence should not lead to a technocratic approach, but to the development of the person - a student who thinks, questions, and acts responsibly in the complex modern world. In that way, the „game - algorithm - AI - critical thinking" model is positioned as a pedagogical response to the challenges of the digital age, aligned with humanistic and educational values.

3. Research methodology

3.1 Research approach

This paper applies a qualitative research approach in order to explore the potential of the integration of gamification and artificial intelligence in fostering critical thinking among primary school students. As an appropriate methodological choice, a case study is used, which enables an in-depth consideration of a specific educational practice in its real context.

The choice of a case study is justified by the research objective of the paper, which is not aimed at generalization of the results, but at the analysis and interpretation of learning processes, student reactions, and pedagogical effects of the application of the „From Game to Algorithm“ model.

3.2. Context and participants

The case study was carried out as part of a teaching activity in a primary school, with students from grade school (age 9-10). The activity is carried out in a regular teaching context, as part of an integrated teaching unit related to the development of logical, algorithmic, and critical thinking.

Students with different levels of prior knowledge and digital competencies participated in the activity, which made it possible to see the impact of the gamified and AI-supported approach on different student profiles. The role of the teacher was that of a facilitator, who guided the students through questions, discussion, and reflection, without directly offering solutions.

3.3. Description of the teaching activity

The teaching activity was designed based on the conceptual model „From Game to Algorithm“ and took place in three successive stages.

Phase 1: **Dramatized problem situation**

The activity started with a gamified story in which the students played the role of „researchers“ who had to solve a series of challenges to reach the goal. The challenges were designed to require:

- planning of steps,
- choice between several possible strategies,
- predicting consequences of decisions.

In this phase, the emphasis was placed on experiential learning and active participation, without the explicit use of formal algorithmic concepts.

Phase 2: **Algorithmic structure and reflection**

After completing the game activities, the students were encouraged to analyze their actions through a guided discussion. The questions were aimed at:

- identification of the sequence of steps,
- recognition of rules and conditions,
- analysis of successful and unsuccessful strategies.

At this stage, students gradually began to structure their experiences in the form of simple algorithmic patterns (eg "first – then – if/then"), which represented a transition from play to algorithm.

Phase 3: AI-supported adaptation and critical analysis

In the final phase, students worked with a digital tool supported by artificial intelligence, which offered additional tasks with an adjustable level of difficulty and feedback. Students were encouraged to analyze the feedback and discuss it:

- why the system offers certain tasks,
- how the algorithm „decides" the weight,
- Do they always agree with the proposed solutions?

This phase was crucial for developing a critical awareness of the functioning of algorithmic systems.

3.4. Data collection methods

Data were collected through:

- observation of student participation and interaction,
- analysis of student products (solutions, diagrams, algorithmic schemes),
- reflective discussion with the students after the activity.

These methods enabled a qualitative observation of changes in students' thinking, problem-solving strategies, and critical engagement.

The analysis of the collected data indicates several significant findings:

- Students showed increased motivation and engagement in the gamified environment.
- A gradual transition from intuitive to structured thinking has been noted.
- Students were able to explain and justify their choices, which indicates the development of critical thinking.
- Interaction with the AI tool prompted questions and discussions about the accuracy and logic of algorithmic decisions.

The results of the case study indicate that the conceptual model „From Game to Algorithm" can be successfully applied in teaching practice, especially in primary education. The integration of gamification and artificial intelligence creates conditions for the development of critical, algorithmic, and digital thinking among students, which confirms the relevance of the proposed model.

4. Findings / results

Based on the research, the analysis of modern pedagogical approaches, and the consideration of practical examples from the teaching practice, several key findings can be made regarding the integration of gamification and artificial intelligence in order to encourage critical thinking among students.

First, it is clearly confirmed that gamification is an effective initial mechanism for students' cognitive activation. Literature and teaching practice indicate that students show a higher level of engagement, motivation, and persistence when they are involved in gamified activities. The game creates a safe and stimulating environment in which students are ready to experiment, take risks, and learn from their mistakes. This turns out to be particularly significant for the development of critical thinking, as error is experienced as a learning resource rather than a failure.

The second observation refers to the gradual transition from experiential to algorithmic thinking. The analyzed sources indicate that when the gamified activities are pedagogically designed and aimed at solving problems, students spontaneously begin to structure their actions, plan steps and predict the consequences of their own choices. This process is the basis for the development of algorithmic thinking, which is not limited to informatics, but manifests itself as a general cognitive skill applicable in all teaching subjects.

Third, the results indicate that the integration of artificial intelligence further deepens the cognitive process, especially when AI is used as a support rather than a substitute for pedagogical interaction. AI-supported systems enable the adaptation of tasks according to the individual abilities of students, timely feedback and monitoring of progress, which creates conditions for personalized learning. In such a context, students are encouraged to self-regulate, self-reflect and take responsibility for their own learning – key elements of critical thinking.

At the same time, it is stated that artificial intelligence represents a significant cognitive and ethical challenge. Algorithmically mediated content, recommendations and decisions should not be accepted uncritically. On the contrary, it is emphasized that the educational value of AI increases when it becomes the subject of analysis and discussion. Students who are encouraged to ask questions about how algorithms work, why the system offers certain solutions, and what its limitations are, develop a higher level of critical awareness and media literacy.

In addition, the analysis shows that the integrative model „game - algorithm - AI - critical thinking" enables a holistic approach to learning. Instead of fragmented introduction of technologies or isolated activities, this model creates a coherent educational framework in which each component has a clear pedagogical function. The game serves as motivational and experiential input, the algorithm as cognitive structure, AI as adaptive support, and critical thinking as the ultimate educational goal. In the context of the Macedonian educational system, these findings are in accordance with the guidelines for the development of digital, logical and critical competencies among students. In particular, the need for careful planning of teaching activities and professional preparation of teachers for the integration of such innovative models in daily practice is highlighted.

The results of the analysis indicate that the integration of gamification and artificial intelligence, when it is pedagogically designed and value oriented, has a significant potential for improving critical thinking among students. This approach not only contributes to the improvement of the quality of learning, but also creates a basis for the education of thinking, autonomous and responsible persons, capable of critically moving through the complex digital world - which is an essential mission of education.

5. Discussions and conclusions

The results of the conducted case study indicate that the integration of gamification and artificial intelligence in the teaching process has a significant potential for encouraging critical thinking among elementary school students. These findings are consistent with contemporary theoretical and research insights related to learning through play, the development of algorithmic thinking, and the role of artificial intelligence in education.

The observed increase in student motivation and engagement during gamified activities confirms the thesis that learning through play creates an emotionally and cognitively favorable learning environment. These results are consistent with the views of Deterding et al. (2011) and Kapp (2012), according to which gamification, through clearly defined goals, rules, and continuous feedback, strengthens internal motivation and encourages the active role of the student in the learning process.

In addition, Gee (2007) points out that quality educational games create „systems of meaning", in which students learn through experimentation, error-making, and reflection. Exactly such processes were also observed within the framework of this study, where the students, through the game, developed strategies, questioned their own decisions, and reasoned their actions. The game, in this context, was not only a motivational element but also a means of cognitive shaping and deepening of thought processes. One of the most significant findings of the research concerns the gradual transition from intuitive and experiential action to structured and logically organized thinking. Through targeted reflection and pedagogical guidance, students were able to formulate their activities in the form of sequences, rules, and conditions, which is the basis of algorithmic thinking. This process indicates the possibility to develop algorithmic concepts naturally and thoughtfully, through activities that are close and meaningful to the students.

This finding is consistent with the concept of computational thinking, as defined by Wing (2006), as the ability to solve problems through logical decomposition, pattern recognition, and systematic planning. Research by Grover and Pea (2013) further confirms that algorithmic thinking can be successfully developed in early education, especially when it is linked to concrete, contextualized, and meaningful activities. In the Macedonian educational context, this approach represents an opportunity to overcome traditional reproductive learning and to introduce students to the logic of the modern digital society in a developmental and acceptable way.

The interaction with the AI-supported tool in the third phase of the activity showed that students do not perceive technology exclusively as a source of correct and final answers, but as a system that can and should be analyzed, questioned, and evaluated. Students asked questions related to the logic of the algorithm, the choice of tasks, and the accuracy of the solutions offered, which indicates the development of a critical distance towards technology.

These observations are consistent with the views of Holmes et al. (2019) and UNESCO (2023), which emphasize that the educational application of artificial intelligence should be aimed at the development of critical and ethical awareness, and not only at the automation and optimization of learning. In this context, artificial intelligence functions as a cognitive challenge that encourages students to think about the way information is selected, structured, and interpreted, which is especially significant in the era of algorithmically mediated reality.

The results of the study clearly show that critical thinking does not develop in isolation, but as a result of the interaction between the game, algorithmic structure, and technological support. Students demonstrated abilities for analysis, argumentation, and

self-reflection, which is consistent with definitions of critical thinking provided by Facione (2011) as well as Paul and Elder (2006). Additionally, the findings are aligned with the European Digital Competence Framework (DigComp 2.1), which emphasizes the importance of critical and responsible use of technology.

From the perspective of educational policies, the results indicate that the integration of gamification and artificial intelligence is not only a pedagogical innovation but also a strategic opportunity for the advancement of teaching practice. The conceptual model „From Game to Algorithm" offers a framework for the systematic development of critical, algorithmic, and digital thinking, in accordance with contemporary social and technological challenges. In that direction, the need for curricular reforms that will recognize critical thinking as a transversal competence and not as an isolated educational outcome is emphasized. In terms of teaching practice, the study points to the key role of the teacher as a facilitator of learning, who guides students through the process of play and experience, through structured thinking, to critical analysis of technological tools. Played activities create space for dialogue, reflection, and differentiated learning, whereby individual differences between students are recognized as a resource, not as an obstacle.

As a synthesis of pedagogical, technological, and cognitive aspects of learning, the „From Game to Algorithm" model represents a flexible and adaptable approach with the potential for application in various educational contexts. Its application can contribute to building an educational system that not only follows technological innovations but also critically examines them, putting the student at the center of the learning and development process.

6. Limitations and directions for future research

This paper explores the integration of gamification and artificial intelligence as a contemporary pedagogical approach to encourage critical thinking in primary school students. Starting from the theoretical settings of learning through play, algorithmic thinking and critical digital literacy, the conceptual model „From Game to Algorithm" was proposed and analyzed, which connects experiential learning, structured cognitive shaping and critical analysis of technological systems.

The results of the conducted case study indicate that gamified activities, when carefully designed and pedagogically guided, create an environment that significantly increases student motivation, engagement and readiness for active participation in the teaching process. The transition from a game to an algorithm allows students to gradually design and structure their own activities, while developing the basics of algorithmic and logical thinking. In addition, the use of artificial intelligence as an educational tool has proven to be a significant factor in fostering critical awareness, as students do not remain mere users of technology, but are encouraged to analyze, question and evaluate its role and impact.

One of the key conclusions of the research is that critical thinking does not develop in isolation, but as a result of the dynamic interaction between game experience, cognitive structure and technological mediation. In that context, the „From Game to Algorithm" model stands out as a pedagogically sustainable and flexible approach, with the potential for application and adaptation in different teaching subjects and educational contexts.

Although the study has certain limitations related to its qualitative character and limited coverage, it offers significant insights into the potential of integrated pedagogical approaches in contemporary education. The research opens the need for further, more

extensive and systematic research that will allow a deeper understanding of the long-term effects of the application of gamification and artificial intelligence on the development of critical and algorithmic thinking among students.

In that direction, future research could focus on:

- implementing quantitative and mixed research designs to measure the impact of the model on different aspects of student thinking;
- analysis of the application of the „From Game to Algorithm“ model in different teaching subjects and educational levels;
- research of teachers‘ perceptions, competencies and readiness for the integration of gamification and artificial intelligence;
- examination of the ethical, social and educational aspects of the use of artificial intelligence in teaching;
- development and evaluation of digital tools specifically designed to support students‘ critical thinking.

In a broader perspective, such research can contribute to building an educational practice that not only follows technological innovations, but also critically shapes them, putting the student at the center of the learning process. Thus, the paper positions itself as a relevant contribution to contemporary discussions on the role of gamification and artificial intelligence in education, offering theoretical and practical guidelines for the development of critical, responsible and thoughtful learning in the digital age.

7. References

1. “Artificial Intelligence in Education: Promises and Implications for Teaching and Learning” edited by David Lynch, Council of Europe, November 2022
2. The power of artificial intelligence fascinates, but also frightens - Mirjana Joveska, February, 2023 https://mk.bloombergadria.com/tehnologija/inovacii/21186/mokjta-na-vestackatainteligencija-voodusevuva-no-i-zaplasuva/news
3. Why we need the psychology of artificial intelligence - Vladimir Davchev, Skopje, 2019
4. http://periodica.fzf.ukim.edu.mk/psnp/psnp5(2019)/PsNP05-06.04%20Davchev,%20V.pdf
5. What to expect in the era of artificial intelligence with ChatGPT? – January, 2023, https://factor. mk/shto-ne-ochekuva-vo-erata-na-veshtachkata-intelligencija-so-chatgpt
6. Artificial Intelligence, Global Edition, A Modern Approach - Stuart Russell, Peter Norvig, 2021 https://elibrary.pearson.de/book/99.150005/9781292401171#item-1
7. Teaching Machines: Learning from the Intersection of Education and Technology (Tech.edu: A Hopkins Series on Education and Technology) Illustrated Edition - Bill Ferster, https://www.amazon.com/ Teaching-Machines-Intersection-Education-Technology/dp/1421415402
8. Intelligent Tutoring Systems: How AI Can Improve Student Learning - Adrien Beaulieu, 2023, https://product.house/intelligent-tutoring-systems-how-ai-can-improve-student-learning/

9. The role of artificial intelligence in shaping the future of education: the potential and challenges of the new era of learning - March. 2023, https://www.alltechbuzz.net/mk/the-role-of-ai-in-shaping-the-future-of-education-the-potential-and-challenges-of-the-new-learning-era/
10. Artificial intelligence is of great benefit to students - Dorina Stefanovska, March, 2022, https://goce.mk/veshtachkata-inteligenczi%D1%98a-od-golema-korist-za-studentite/
11. Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.
12. Dewey, J. (1933). How we think: A restatement of the relation of reflective thinking to the educative process. D.C. Heath and Company.
13. Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining "gamification." Proceedings of the 15th International Academic MindTrek Conference, 9–15.
14. Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial intelligence in education: Promises and implications for teaching and learning. Center for Curriculum Redesign.
15. Plass, J. L., Homer, B. D., & Kinzer, C. K. (2015). Foundations of game-based learning. Educational Psychologist, 50(4), 258–283.

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ADAPTING TO THE NEW MEDIA REALITY: THE NEED FOR A MULTIPLATFORM APPROACH IN BRANDING STRATEGIES OF LOCAL AND REGIONAL MEDIA

M.Sc. Aleksandar Manasiev

ABSTRACT

Digitalisation has fundamentally transformed the ways in which media content is produced, distributed, and consumed, reshaping the traditional media landscape. In this environment, local and regional media face increasing pressures related to visibility, audience engagement, and long-term sustainability, particularly if they fail to adapt to new digital and platform-driven conditions. This paper analyses branding strategies adopted by local and regional media organisations in the digital era, with a specific focus on the effects of a multiplatform approach. The central hypothesis is that media outlets that systematically use multiple platforms and diverse content formats achieve greater brand visibility and higher levels of audience engagement compared to those relying on a single platform. The study is based on a quantitative analysis of survey data collected from local and regional media in North Macedonia and examines their presence across websites, social media platforms, and mobile applications. Particular attention is given to three key components of a multiplatform strategy: the use of multimedia content, interactive formats, and user-generated content (UGC). The findings indicate that media organisations implementing a multiplatform approach are associated with significantly higher visibility and more intensive audience engagement. Video content emerges as the most effective format, while interactive formats and UGC demonstrate strong potential for strengthening trust, credibility, and the relationship between media outlets and their audiences. In contrast, media organisations that do not adopt multiplatform strategies tend to have limited reach and lower brand recognition. In conclusion, the study suggests that multiplatform branding strategies represent a crucial factor for the sustainability and competitiveness of local and regional media within the contemporary media ecosystem.

Keywords: media branding, multiplatform approach, local media, multimedia content, audience engagement

1. Introduction

Media and journalism are undergoing continuous transformation, driven primarily by technological development. While the core principles of professional journalism, fairness, balance, ethical conduct, and objectivity, remain relatively stable, profound changes are taking place in the modes of content distribution and in approaches to building and sustaining media brands within an environment characterised by an increasing number of available platforms.

Media organisations that were once clearly defined as print, radio, or television outlets can no longer be confined to a single category. In addition to textual content, they now produce video, audio, multimedia, and interactive formats distributed through websites, mobile applications, and various social media platforms. As a result, particularly among younger audiences, media outlets are increasingly recognised not by their traditional format but as content creators operating across multiple platforms. This transformation has been widely documented in existing research, which suggests that the demand for news has not declined; rather, the ways in which information is financed, distributed, and consumed have fundamentally changed (Picard, 2014).

The emergence and expansion of the internet initiated deep structural transformations within the media sector, significantly reshaping financial models, audience habits, and patterns of news consumption. Subsequently, mobile technologies and social media further accelerated this process, enabling continuous access to information regardless of time or location. Consequently, audiences have become more mobile, fragmented, and increasingly oriented towards platform-based and on-demand content. In such a distributed media environment, the role of media brands has become more complex and strategically significant (Kalogeropoulos, Fletcher, & Nielsen, 2019).

Trends in content consumption, particularly those driven by younger audiences, have become critical factors within the media industry. Media organisations increasingly recognise younger users as a key market segment, both in the present and in the near future, while their consumption habits serve as indicators of broader shifts in media use across generations (Saulīte & Ščeulovs, 2023).

Local and regional media play a specific role within the media ecosystem by providing information of immediate public interest to local communities and contributing to media pluralism. At the same time, they are among the most vulnerable actors in the process of digital transformation, due to limited financial and human resources and increasing competition from national and global media platforms.

In conditions of audience fragmentation and platform-oriented content distribution, brand visibility and the maintenance of relationships with audiences become key challenges for the survival of these media outlets. Consequently, the analysis of their branding strategies, particularly in the context of a multiplatform approach, offers important insights into how local and regional media seek to preserve their relevance and public function.

These transformations have had a particularly strong impact on local and regional media. Many outlets failed to adapt in a timely manner to the new media reality, resulting in declining revenues, audience loss, and, in numerous cases, complete closure. This process has contributed to the emergence of so-called media or information deserts, areas characterised by the absence of reliable and diverse local information, thereby directly undermining democratic processes and citizens' right to be informed.

Such developments are not limited to the global media context but are also clearly evident within the media landscape of North Macedonia. A significant number of national,

local, and regional media outlets have ceased operations, while many of the remaining organisations still lack clearly defined multiplatform strategies. Conversely, media outlets that have successfully adopted a multiplatform approach demonstrate greater potential for survival, visibility, and brand sustainability within a distributed, platform-driven media environment.

For these reasons, this study focuses on the need for a multiplatform approach in the development of branding strategies for local and regional media. It examines how the use of different platforms and content formats influences media brand visibility and audience engagement in contemporary media ecosystems.

2. Research methodology

2.1. Research Scope and Objectives

This study examines the effects of a multiplatform approach on the development of branding strategies among local and regional media in North Macedonia, within the context of technological change and the transformation of audience media consumption habits. The analysis focuses on how media organisations adapt their branding strategies in order to enhance brand visibility, improve audience engagement, and strengthen long-term sustainability.

The primary objective of the research is to determine whether, and to what extent, the adoption of a multiplatform approach contributes to more effective media brand building. In addition, the study aims to identify the key challenges, opportunities, and innovative practices employed by local and regional media in response to the contemporary media environment.

2.2. Research Questions

The study is guided by the following research questions:

- Do local and regional media in North Macedonia have branding strategies adapted for different platforms?
- Which strategies and content formats do media organisations use to increase brand visibility and audience engagement?
- What key challenges do media organisations face when adapting to a multiplatform environment?
- How do audience fragmentation and competition from national and global media affect the sustainability of local and regional media?
- What opportunities do emerging technologies and media trends offer for the further development of media branding strategies?
- How do media organisations adapt their strategies to target specific audience segments?
- What are the potential long-term effects of adopting a multiplatform approach on the sustainability and overall success of media organisations?

2.3. Methods and Instruments

The study adopts a predominantly quantitative research design, complemented by qualitative content analysis in order to provide a comprehensive analysis of media branding strategies within a multiplatform environment.

The quantitative component is based on a survey conducted among local and regional media organisations in North Macedonia. The questionnaire was designed to collect data on media presence across different platforms, the types of content formats used (textual, multimedia, interactive, and user-generated content), as well as perceptions related to brand visibility and audience engagement.

The survey method was selected as an appropriate research instrument because it enables the systematic collection of data from a larger number of media organisations and provides comparable quantitative indicators related to media presence across different platforms, the content formats used, and perceptions of brand visibility and audience engagement. Given that the aim of the study is not to analyse individual media cases, but rather to identify broader trends and patterns in the adoption of multiplatform strategies, a survey represents the most suitable method for covering a diverse media sample.

In addition, the survey approach allows data to be collected directly from key decision-makers within media organisations, primarily managers and editors-in-chief, whose perspectives are particularly relevant for analysing the strategic dimensions of media branding. In this way, the study combines objective indicators (platform presence, content formats, and publishing frequency) with subjective assessments of the effects of the multiplatform approach, enabling a more comprehensive understanding of how media organisations perceive and manage their brand strategies. The collected data were grouped and analysed using basic statistical methods, and the results are presented through tables and graphical representations to facilitate clearer interpretation. In parallel, a qualitative content analysis was conducted to identify key elements related to brand identity, message consistency, and patterns of audience interaction across different platforms.

By integrating quantitative and qualitative methods, the study enables a more nuanced and consistent understanding of the effects of a multiplatform approach on media brand building, brand visibility, and audience engagement among local and regional media.

3. Results

3.1. Sample and Scope

The survey was conducted between June and August 2024 and covered all eight planning regions in North Macedonia. A total of 43 responses were collected, representing 46 local and regional media outlets, as some respondents manage more than one media organisation. More than half of the sample consists of online media, while the remainder includes radio, television, and print outlets, as well as a small number of podcast and blog-based media.

The majority of survey responses were provided by managers/directors and editors-in-chief (over 85%), indicating that the data largely reflect the strategic perspectives of media organisations.

3.2. Branding Strategies and the Multiplatform Approach

The results indicate that the multiplatform approach is a dominant practice among local and regional media, although it varies significantly in terms of strategic maturity. More than one-third of media organisations (37.2%) apply a multiplatform presence without a coordinated strategy across different platforms. Approximately one-quarter of respondents (23.2%) report having an integrated and coordinated multiplatform strategy, while an equal proportion of media outlets (23.2%) remain primarily focused on a single platform.

In addition, a smaller share of media organisations report basing their branding strategies primarily on multimedia content (11.6%) or on user-generated content (4.7%). These findings suggest that, although multiplatform presence is widespread, an integrated and deliberately planned branding approach has yet to become dominant among local and regional media.

3.3. Platforms and Publishing Practices

The most widely used platforms are Facebook (90.7%) and media websites (86%), followed by YouTube (67.4%) and Instagram (62.8%). Platforms such as TikTok (27.9%), X (23.3%), and LinkedIn (18.6%) are considerably less represented, typically with limited levels of activity.

Most media organisations (81.4%) publish content multiple times per day, indicating a high intensity of production. However, audience interaction practices remain largely basic: 44.2% of media outlets engage with audiences primarily by responding to comments and messages, while more advanced forms of interaction, such as polls, quizzes, or live events, are used by fewer than one-fifth of respondents.

3.4. Brand Elements and the Importance of Branding

Respondents most frequently identify content quality (90.7%), a consistent brand identity (60.5%), and trust and credibility (60.5%) as the most important elements of a media brand. Active involvement of the local community is cited as a key element by 55.8% of respondents, while regular interaction with audiences is emphasised by 48.8%.

Branding is perceived as critically important for future sustainability: 65.1% of respondents rate it as extremely important, while an additional 30.2% consider it very important. No respondents regard branding as unimportant, indicating a high level of awareness of its role within contemporary media competition.

3.5. Performance Measurement and Visibility

Most media organisations rely on multiple indicators to assess the outcomes of their branding strategies. Audience reach is measured by 83.7% of respondents, engagement metrics (likes, comments, and shares) by 76.7%, follower growth by 65.1%, and website traffic by 55.8%.

Notably, 83.6% of media organisations report some degree of positive effect on brand visibility following the adoption of a multiplatform approach, including sig-

nificant (34.9%), moderate (30.2%), and minor increases (18.6%). This suggests that, although not always strategically integrated, the multiplatform approach nevertheless has a positive impact on brand visibility.

3.6. User-Generated Content (UGC)

User-generated content (UGC) is used by 72% of media organisations, with varying levels of frequency. Media outlets that regularly publish UGC report higher levels of trust and credibility (51.2%), increased audience reach (48.8%), and greater audience engagement (32.6%).

Comparative analysis indicates that the effects of UGC are particularly pronounced on visual platforms. On Instagram, media organisations that use UGC have, on average, nearly twice as many followers as those that do not, while on Facebook the difference amounts to approximately 19% in favour of media outlets that incorporate UGC. These findings suggest that UGC represents a significant factor in organic growth and in strengthening relationships with audiences, particularly on visual platforms such as Instagram.

3.7. Multimedia and Interactive Content

Photographs (86%) and videos (79.1%) are the most commonly used multimedia formats. More than two-thirds of media organisations that use video content report increased audience engagement (72.1%) and follower growth (65.1%), while 62.8% also report increased traffic to their websites. These results indicate that video content plays a key role in enhancing brand visibility and recognition.

Interactive content, such as quizzes, polls, and interactive graphics, is significantly less widespread: 55.8% of media organisations do not use it at all. However, among those that do, 37.2% report increased engagement and 27.9% improved brand visibility. Although interactive formats demonstrate positive effects for the media organisations that implement them, more than half of the media outlets still do not use these tools, most often due to limited resources and capacities. This points to a substantial but underutilised potential of interactive formats.

3.8. Challenges and Future Directions

The most frequently reported barriers to the development of multiplatform branding strategies include limited budgets (72.1%), shortages of human resources (67.4%), and insufficient technical expertise (27.9%). Some media organisations attempt to address these challenges through training, automation, and performance analysis; however, 27.9% report having no systematic approach to overcoming these constraints.

Regarding future plans, 67.4% of media organisations intend to expand their presence across additional platforms, while 55.8% plan to increase investment in multimedia production. Interest in adopting artificial intelligence (AI) tools is expressed by 30.2% of respondents, indicating an early stage of technological transformation.

3.9. Overall Summary of Results

The results suggest that media organisations with an active presence across multiple platforms, combining multimedia production, audience participation, and regular performance measurement, are associated with higher levels of visibility and stronger audience engagement. In contrast, media outlets that remain focused on a single platform exhibit significantly more limited reach and lower levels of brand visibility.

4. Discussion and conclusions

This study suggests that multiplatform branding strategies represent an important prerequisite for the visibility and sustainability of local and regional media in conditions of digital audience fragmentation. The findings indicate that media organisations focused on a single platform tend to have the smallest overall audiences and the weakest brand reach.

Comparative analysis of average follower numbers indicates that, compared to single-platform outlets, multiplatform media are associated with higher follower counts across platforms, including 41.86% more followers on Facebook, 419.75% more on Instagram, and 3175% more on other platforms. The exceptionally high percentage differences, particularly in the category of "other platforms", are partly attributable to the very low baseline among single-platform media and should therefore be interpreted with caution.

These disparities suggest that multiplatform presence is not merely a matter of distribution but a factor directly associated with audience growth and enhanced brand visibility, especially on visually oriented platforms.

This conclusion is further supported by the perceptions of the media organisations themselves. When asked whether they had observed an increase in visibility after adopting a multiplatform approach, 83.6% of respondents reported some degree of positive effect on brand visibility, while 11.6% observed no noticeable change and 4.6% reported not using a multiplatform approach. This finding is significant as it demonstrates that the effect is predominantly positive, though not automatic, highlighting the need for better integration and coordination across platforms.

The results also indicate that multimedia content and user-generated content (UGC) act as strong "accelerators" of visibility. Among the most frequently used formats are photographs (86%) and videos (79.1%), and a large majority of respondents (88.5%) report some level of increased visibility or engagement as a result of incorporating multimedia content (significant, moderate, or minor increases).

A clear gap is evident in the use of interactive formats (such as polls, quizzes, and interactive graphics). While more than half of media organisations do not use these formats (approximately 55%), those that do report higher levels of audience engagement and participation (e.g., 35.6% report increased engagement, 31.3% greater interaction, and 26.7% improved visibility). This suggests that interactivity represents a substantial but underutilised potential, most commonly constrained by limited resources and organisational capacity.

Finally, the findings show that the multiplatform approach is widely recognised by media organisations themselves as a strategic necessity: 65.1% rate it as "extremely important," 27.9% as "very important," and 7% as "moderately important" for future sustainability. This reinforces the argument that local and regional media increasingly acknowledge the platform-based logic of the contemporary media environment; however, the key challenge remains how to translate this awareness into coordinated and strategically integrated practice.

4.1. Practical Implications and Recommendations

Based on the findings, the following practical recommendations can be formulated for local and regional media organisations:

1. **Shift from mere presence to strategy:** Multiplatform publishing should be coordinated, with a unified brand identity, tone, and visual language, and with clearly defined roles for each platform.
2. **Prioritise investment in video content:** Given that video is the most effective format for audience engagement and follower growth, even a basic production plan is essential (e.g., short vertical videos combined with longer-form content where capacity allows).
3. **Establish clear UGC protocols:** Media organisations should systematically encourage and curate user-generated content through audience calls, clear guidelines, and appropriate verification processes, as UGC contributes to trust, diversity, and organic reach.
4. **Increase interactivity through "lightweight" formats:** Polls, questions, quizzes, and simple interactive graphics, particularly on platforms such as Instagram, should be used more consistently, accompanied by regular measurement of their effects.
5. **Institutionalise performance measurement:** A minimum set of indicators should be adopted as a standard practice, including reach, engagement, follower growth, website clicks, and conversions to subscriptions or donations where such models exist.
6. **Invest in capacity building:** Continuous short-term training initiatives (e.g., mobile journalism, multiplatform journalism, content distribution, and verification of user-generated content) are essential, as resource constraints remain the most commonly reported challenge.

5. Limitations of the study and directions for future research

Although this study provides relevant and empirically grounded insights into the impact of a multiplatform approach on the visibility and branding of local and regional media, several limitations should be acknowledged when interpreting the findings.

First, the research is based on a sample of 46 local and regional media outlets in North Macedonia. While this allows for an in-depth understanding of the national context, it limits the direct generalisability of the results to other media systems. Media markets across the region and beyond differ in terms of regulatory frameworks, funding structures, and levels of digital maturity, all of which may affect the applicability of the findings.

Second, part of the data relies on self-reported responses from participants (managers, editors, and journalists), which introduces the potential for subjective assessment, particularly in evaluating the effects of branding and visibility. Although these responses are complemented by platform analysis and numerical indicators (such as follower counts and platform presence), future research could incorporate more detailed analyses of platform analytics, including reach, impressions, and engagement rates.

Third, brand visibility in this study is primarily examined through quantitative indicators such as follower numbers and platform presence. While these measures are widely used and relevant, they do not fully capture audience-based perceptions of the brand, including trust, loyalty, and qualitative relationships between media outlets and their audiences.

Fourth, the research represents a cross-sectional snapshot in time and does not track the long-term effects of multiplatform strategies. As a result, causal relationships between the adoption of specific strategies and sustained growth in visibility cannot be established with certainty over longer periods.

5.1. Directions for Future Research

Building on these limitations, future research could:

- conduct comparative analyses of local and regional media across multiple countries in the region in order to examine differences in multiplatform practices;
- incorporate longitudinal research designs that track the effects of branding strategies over extended periods of time;
- combine quantitative and qualitative methods, including audience-focused research on brand perception and trust in media;
- analyse the influence of algorithms and automated content distribution, as well as the growing role of artificial intelligence in media branding and content dissemination;
- place greater emphasis on economic sustainability and the relationship between multiplatform strategies, monetisation, and emerging business models for local media.

These directions may contribute to a deeper understanding of the role of multiplatform branding and its significance for the future of local and regional media.

6. References

7. Aaker, D. A. (1995). Building strong brands. Free Press.
8. Abernathy, P. M. (2020). News deserts and ghost newspapers: Will local news survive? UNC Center for Innovation and Sustainability in Local Media.
9. Biesenbach, R. (2018). Unleash the power of storytelling: Win hearts, change minds, get results.
10. Costello, V., Youngblood, N. E., & Youngblood, S. A. (2012). Multimedia foundations: Core concepts for digital design. Focal Press.
11. Deuze, M., & Witschge, T. (2020). Beyond journalism. Polity Press.
12. Elliott, R., & Percy, L. (2007). Strategic brand management. Oxford University Press.
13. Franklin, B. (2006). Local journalism and local media: Making the local news. Routledge.
14. Gitner, S. (2015). Multimedia storytelling for digital communicators in a multiplatform world. Routledge.

15. Gramatikov, D. (2004). Product management. Ss. Cyril and Methodius University of Skopje.
16. Hardy, J. (2022). Branded content: The fateful merging of media and marketing. Routledge.
17. Heding, T., Knudtzen, C. F., & Bjerre, M. (2020). Brand management: Mastering research, theory and practice. Routledge.
18. Humbatov, S. (2015). Brand management with social media in the service industry. Anchor Academic Publishing.
19. Jenkins, H. (2008). Convergence culture: Where old and new media collide. New York University Press.
20. Kantardjieva, M., Tripunoski, M., & Ashtalkoska, I. (2021). The role and importance of relationship marketing as a factor for success in business entities. Vizione, (36), 307–317.
21. Kapferer, J.-N. (1994). Strategic brand management. Free Press.
22. Keller, K. L. (2002). Branding and brand equity. In B. Weitz & R. Wensley (Eds.), Handbook of marketing. Sage Publications.
23. Keller, K. L. (2003). Strategic brand management: Building, measuring and managing brand equity (2nd ed.). Prentice Hall.
24. Keller, K. L. (2013). Strategic brand management: Building, measuring and managing brand equity. Ars Lamina. (Original work published in Macedonian)
25. Kotler, P., Kartajaya, H., & Setiawan, I. (2010). Marketing 3.0: From products to customers to the human spirit. John Wiley & Sons.
26. Luttrell, R. (2021a). Social media: How to engage, share, and connect. Rowman & Littlefield.
27. Luttrell, R. (2021b). Social media and society: An introduction to the mass media landscape and Gen Z. Rowman & Littlefield.
28. Machin, D., & Polzer, L. (2015). Visual journalism. Macmillan Education UK.
29. Mahoney, L. M., & Tang, T. (2017). The Rowman & Littlefield handbook of media management and business. Rowman & Littlefield.
30. Manasiev, A. (2021). Six reasons why we should not ignore mobile journalism. Journalift.
31. Manasiev, A. (2022). Think outside the (TV) box. Journalift.
32. Manasiev, A. (2023). Visual storytelling extends the life of journalistic stories. Journalift.
33. Manasiev, A. (2023). How and whether journalists can use the metaverse. Macedonian Institute for Media (MIM).
34. Manasiev, A. (2023). Five ways to use Instagram effectively. Macedonian Institute for Media (MIM).
35. Manasiev, A. (2023). How people “disappeared” from journalistic narratives. Macedonian Institute for Media (MIM).

36. Manasiev, A. (2023). How and where to reach younger audiences. Macedonian Institute for Media (MIM).
37. Manasiev, A. (2023). Five ways media organisations can use YouTube. Macedonian Institute for Media (MIM).
38. McLuhan, M. (1994). Understanding media: The extensions of man. MIT Press.
39. McLuhan, M., & Fiore, Q. (2001). The medium is the massage. Gingko Press.
40. Macedonian Institute for Media (MIM). (2012). Media development in Macedonia according to UNESCO indicators.
41. Macedonian Institute for Media (MIM). (2015). Macedonia in the digital era: Rights and responsibilities in online communication.
42. Mogaji, E. (2021). Brand management: An introduction through storytelling. Palgrave Macmillan.
43. Nikolovski, A., Arsovski, L., & Tripunoska, M. (2017). Marketing strategies for the preparation of future professionals in North Macedonia. EMC Review – Journal of Economics (APEIRON), 13(1).
44. Pepeljugoski, V., Manasiev, A., & Janevska, E. (2023). Journalists' rights, freedom of expression, and media independence in North Macedonia: Metadata report. Association of Journalists of Macedonia (ZNM).
45. Phillips, A. (2012). A creator's guide to transmedia storytelling. McGraw-Hill.
46. Quesenberry, K. A. (2020). Social media strategy (3rd ed.). Rowman & Littlefield.
47. Rakita, B., & Mitrović, I. (2007). Brand management. Savremena administracija.
48. Siegert, G., Förster, K., Chan-Olmsted, S. M., & Ots, M. (2015). Handbook of media branding. Springer.
49. Sullivan, M. (2020). Ghosting the news: Local journalism and the crisis of American democracy. Columbia Global Reports.
50. Tripunoski, M. (2007). Interactive marketing. FON University.
51. Veljković, S. (2010). Brand management in contemporary market conditions. Faculty of Economics, CID.
52. Young, A. (2014). Brand media strategy: Integrated communications planning in the digital era. Springer.

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SELLING REALITY: BAUDRILLARD, HYPERREALITY, AND THE PSYCHOLOGY OF ADVERTISING

Gjorgji Ristov

ABSTRACT

This paper explores the intersection of communication, psychology, and consumer behavior through the theoretical framework of Jean Baudrillard's concept of *hyperreality*. It examines how early advertising campaigns did not merely promote products but manufactured social norms and psychological dependencies. Two emblematic cases illustrate this process. The first is the Listerine campaign of the 1920s, led by the Lambert Pharmaceutical Company, which introduced the term "halitosis" to medicalize bad breath and instill a fear-based consumer need for mouthwash. The second is the "bacon and eggs" breakfast campaign, orchestrated by Edward Bernays on behalf of the Beech-Nut Packing Company, which employed pseudo-scientific endorsements from physicians to reframe a heavy breakfast as a health necessity for the American public. Both cases exemplify how advertising creates hyperreal environments where cultural symbols replace material realities, shaping not only habits but collective perceptions of normalcy and desire. By contextualizing these historical examples within Baudrillard's theory, this paper investigates the mechanisms of psychological persuasion and the simulation of needs. The findings will be helpful for further connecting it to contemporary econometric modeling of consumer behavior and the evolving legal and ethical regulations surrounding manipulative or subliminal advertising practices. Ultimately, this study contributes to understanding how media-driven hyperrealities continue to influence the economies of today, societal norms, and the boundaries of lawful persuasion.

Keywords: Hyperreality; Consumer behavior; Social construction; Media influence;

1. Introduction

In the modern world, advertising is often perceived merely as a tool for promoting products or services.[7] Yet, its influence extends far beyond simple commercial persuasion, reaching deeply into the realms of psychology and social behavior. The intersection of communication, psychology, and consumer behavior reveals how media messages do not merely inform or persuade-they actively shape perceptions, desires, and even the boundaries of what is considered "normal" in society. Understanding this dynamic is crucial to analyzing the mechanisms through which advertising exerts its influence, both historically and in contemporary contexts.

Jean Baudrillard's concept of **hyperreality** provides a powerful theoretical lens to explore these phenomena. Hyperreality occurs when representations-images, signs, and narratives—begin to replace and define reality itself, creating a world in which social norms and desires are mediated more by symbolic meaning than by material conditions[8] [9]. In the context of advertising, hyperreality manifests when a product is no longer valued solely for its functional utility but becomes a vehicle for social identity, psychological reassurance, or perceived necessity[10]. By examining advertising through this framework, we can uncover how media messages craft experiences and needs that may not exist independently of the campaigns that promote them.

This paper argues that early twentieth-century advertising campaigns did not merely encourage the purchase of goods; they actively manufactured psychological needs and established social norms, creating hyperreal consumer environments. Two emblematic cases illustrate this process: the Listerine campaign of the 1920s, which medicalized bad breath to create fear-driven demand, and Edward Bernays' "bacon and eggs" breakfast campaign, which used pseudo-scientific authority to redefine what constituted a healthy morning meal. Both examples highlight the capacity of advertising to manipulate perception, construct social norms, and transform consumer behavior.

The paper is organized as follows. First, it introduces the theoretical framework of hyperreality and its relevance to consumer psychology. Next, it provides historical context for early advertising practices. The subsequent sections examine the Listerine and bacon-and-eggs campaigns in detail, followed by a comparative analysis of the two cases. Finally, the study connects these historical examples to contemporary advertising practices, legal considerations, and the ongoing influence of hyperreal consumer culture.

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[7] Abhilasha Mehta, "Advertising Attitudes and Advertising Effectives," Journal of Advertising Research 40 (May 2000): 67–72, https://doi.org/10.2501/JAR-40-3-67-72.

[8] "Mohanlal Sukhadia University - Udaipur, "Hyper Reality Boudrilard.Pdf," ., https://mlsu.ac.in/econtents/2289_hyper%20reality%20boudrilard.pdf.

[9] Paulo Barroso, "From Reality to the Hyperreality of the Simulation," Texto Livre 15 (May 2022): e37426, https://doi.org/10.35699/1983-3652.2022.37426.

[10] Teuku Firmansyah et al., "THE HYPERREALITY AND SIMULACRA THEORY OF JEAN BAUDRILLARD: ON FASHION TRENDS IN TIKTOK," ELite Journal : International Journal of Education, Language and Literature 4 (August 2024): 27–34, https://doi.org/10.26740/elitejournal.v4n2.p27-34.

2. Theoretical Framework

The concept of hyperreality, as developed by French sociologist and philosopher Jean Baudrillard, provides a crucial lens for understanding the psychological and social mechanisms of advertising. Hyperreality occurs when representations—such as images, signs, and narratives-begin to replace or define reality itself, creating a world in which individuals interact more with mediated perceptions than with material truths[11]. In other words, in a hyperreal environment, the distinction between what is "real" and what is constructed by media becomes blurred, and symbolic meaning often takes precedence over functional or objective reality.

Within the context of consumer behavior, hyperreality manifests when products are no longer valued solely for their practical use but become vehicles for identity, status, or psychological reassurance. A bottle of mouthwash, for example, may signify cleanliness, social acceptability, and personal confidence beyond its actual utility. Similarly, a recommended breakfast becomes more than nourishment; it embodies health, morality, or cultural conformity. These representations shape not only individual choices but also collective understandings of normalcy and desire.

Advertising relies heavily on psychological principles to construct and reinforce hyperreal environments. Tactics such as fear appeal, authority endorsement, repetition, and social proof manipulate cognitive and emotional responses, creating perceived needs where none existed[12]. Fear-based strategies can create anxiety over a potential deficiency, while appeals to authority lend legitimacy to products through perceived expert approval. Repetition of symbolic messaging strengthens associations between products and desired social or psychological outcomes, embedding them in the cultural imagination. Social norms are thus not merely reflected in advertising-they are actively constructed and reinforced through symbolic representation[13].

Baudrillard's theory intersects with contemporary studies in consumer psychology and marketing, highlighting the interplay between perception, desire, and behavior[14]. By analyzing historical campaigns within this framework, it becomes evident that advertising does not merely respond to preexisting demand but actively generates it, often shaping collective perceptions of what is necessary, desirable, or socially appropriate[15]. Hyperreality, therefore, offers both a theoretical and methodological tool to examine the mechanisms of psychological persuasion and the simulation of consumer needs.

In this paper, hyperreality will serve as the guiding framework to interpret the case studies of the Listerine and bacon-and-eggs campaigns. By situating these examples within Baudrillard's conceptual model, the analysis will demonstrate how early advertising created symbolic worlds that influenced behavior, normalized certain practices, and established psychological dependencies that extended far beyond the products themselves.

[11] Barroso, "From Reality to the Hyperreality of the Simulation."
[12] Ron Sela, "Persuasive Advertising: How Ads Shape Consumer Behavior," Ron Sela, November 12, 2024, https://www.ronsela.com/persuasive-advertising/.
[13] Stuart Hall and The Open University, eds., Representation: Cultural Representations and Signifying Practices, Repr, Culture, Media and Identities (SAGE, 2012).
[14] Jean Baudrillard, Simulacra and Simulation, trans. Sheila Faria Glaser, The Body, in Theory - Histories of Cultural Materialism (Univ. of Michigan Press, 2019).
[15] Baudrillard, Simulacra and Simulation.

3. Historical Context of Early Advertising

At the turn of the twentieth century, advertising emerged not merely as a commercial tool but as a cultural force capable of shaping social norms and consumer behavior. Industrialization, urbanization, and mass production transformed the marketplace, creating a growing gap between what consumers needed materially and what they were persuaded to desire.[16] In this context, advertising evolved into a sophisticated practice that blended information with psychological manipulation, leveraging emerging media such as newspapers, magazines, and radio to reach increasingly large audiences.

During this period, advertisers began to recognize that products could serve as symbols, representing social status, personal hygiene, health, or morality, rather than simply fulfilling functional purposes. This symbolic dimension allowed campaigns to create perceived needs that extended beyond practical use. Fear, authority, and social conformity became common strategies: advertisements warned of potential social embarrassment, appealed to professional or medical endorsements, and positioned products as essential for cultural or personal success. In effect, advertisers did not simply respond to consumer demand—they manufactured it.[17]

Two developments in particular illustrate the era's shift toward psychologically driven marketing. First, the medicalization of everyday concerns provided fertile ground for campaigns that converted minor inconveniences into perceived medical or social crises. Second, the use of "expert" endorsements—often physicians or scientists—conferred legitimacy on otherwise ordinary products, shaping public perceptions of health and lifestyle. These strategies established early patterns of hyperreal advertising: representations of need and desirability became socially and culturally more salient than the tangible benefits of the products themselves.

This historical backdrop sets the stage for examining emblematic campaigns that exemplify these dynamics. The Listerine advertisements of the 1920s and Edward Bernays' bacon-and-eggs breakfast campaign both leveraged cultural anxieties, authoritative figures, and persuasive narratives to generate demand and normalize new behaviors. By situating these campaigns within the broader context of early twentieth-century advertising, we can better understand how symbolic messaging created environments in which consumption was guided less by material necessity and more by culturally constructed perceptions of need.

4. Case Study 1: Listerine and the Creation of Halitosis

The Listerine campaign of the 1920s represents one of the most striking early examples of advertising as a tool for psychological influence. Produced by the Lambert Pharmaceutical Company, Listerine was initially marketed as a surgical antiseptic and a general oral hygiene product.[18] [19] However, its transformation into a household necessity relied not on the product's functional superiority but on the construction of a new social and psychological

[16] Ramy Ayoub, Rise of Urbanization and Production Urbanization and Its Role in Economic Growth (2022), 16,17,18,19,20, https://doi.org/10.5281/zenodo.14606732.

[17] Samiya Farooq and Adeel Maqbool, "Advertising as An Influencing Factor on Consumer Behavior," Revista de Gestão Social e Ambiental 18 (May 2024): e06587, https://doi.org/10.24857/rgsa.v18n9-076.

[18] "History of LISTERINE® | About LISTERINE® | LISTERINE® Middle East," accessed December 5, 2025, https://www.listerine-me.com/about.

[19] "From Surgery Antiseptic to Modern Mouthwash | Listerine® Philippines," accessed December 5, 2025, https://www.listerine.com.ph/about.

need. Central to this strategy was the invention and promotion of the term "halitosis", which framed bad breath as a medical condition warranting intervention[20] [21] [22].

Prior to this campaign, bad breath was largely regarded as a minor social inconvenience rather than a pressing medical concern. Listerine's marketing materials, including print advertisements in newspapers and magazines, medical pamphlets, and later radio promotions, sought to medicalize this condition, portraying it as a hidden danger capable of undermining personal relationships, professional success, and social standing.[23] The campaign skillfully employed fear as a motivator, suggesting that individuals with untreated halitosis risked social ostracism and embarrassment.[24] This approach leveraged psychological principles that continue to underpin modern marketing: anxiety induction, social pressure, and the creation of a perceived deficiency that could be remedied through purchase.

Baudrillard's concept of hyperreality illuminates the mechanisms at work in this campaign. By defining a new condition—halitosis—and linking it to social consequences, Listerine advertisements constructed a symbolic reality in which fear and hygiene were inseparable from consumer behavior. The product's value extended beyond its practical function; it became a tool for navigating social norms and asserting personal acceptability. In effect, the advertisement created a hyperreal environment in which the perception of need existed independently of objective necessity, and where cultural symbols-the "fear of halitosis"-dictated behavioral choices.

The Listerine case demonstrates how advertising can extend beyond persuasion into the realm of social construction. It highlights the power of media to generate psychological dependencies, normalize certain behaviors, and create demand where none previously existed. Moreover, it establishes a foundational example for analyzing later campaigns, such as Edward Bernays' bacon-and-eggs breakfast promotion, in which the manipulation of perception and social norms similarly produced hyperreal consumption practices. By situating the Listerine campaign within both historical and theoretical contexts, it becomes clear that early advertising was as much about shaping minds and social expectations as it was about selling a product.

4.1. Case Study 2: Edward Bernays and the Bacon-and-Eggs Breakfast Campaign

In the 1920s, Edward Bernays, often regarded as the "father of public relations," orchestrated a campaign that fundamentally reshaped American eating habits.[25] Commissioned by the Beech-Nut Packing Company, Bernays sought to increase consumption of bacon and eggs, promoting it as the ideal breakfast.[26] Unlike traditional advertising that emphasized taste or convenience, Bernays' strategy relied on psychological and cultural

[20] "From Surgery Antiseptic to Modern Mouthwash | Listerine® Philippines."
[21] Vernon Lf, "From Surgical Suite to Fresh Breath: The History of Listerine®," International Journal of Dentistry and Oral Health 4, no. 4 (2018), https://doi.org/10.16966/2378-7090.263.
[22] Jeff Hester, "History of Halitosis," Dental Depot Arizona, March 7, 2023, https://dentaldepotarizona.com/history-of-halitosis/.
[23] Hester, "History of Halitosis."
[24] Student Guide | Digital Collections Blog, n.d., accessed December 5, 2025, https://blogs.library.duke.edu/digital-collections/mma/guide/student/.
[25] Paddy Farrell, "Understanding Nutritional Propaganda," TriageMethod, February 27, 2025, https://triagemethod.com/nutritional-propaganda/.
[26] Farrell, "Understanding Nutritional Propaganda."

persuasion, positioning the meal as a health necessity endorsed by scientific authority.[27]

Bernays capitalized on the growing influence of physicians and nutrition experts to lend credibility to the campaign. By citing endorsements from doctors who purportedly recommended a heavy breakfast, advertisements conveyed the message that consuming bacon and eggs was essential for energy, vitality, and overall well-being.[28] This approach exemplifies the use of authority bias, where recommendations from perceived experts influence behavior, even when the underlying claims are exaggerated or selectively presented. The campaign also leveraged cultural norms, reframing the heavy, protein-rich meal as not only permissible but desirable in everyday life, thereby normalizing a new pattern of consumption across the population.

From the perspective of hyperreality, Bernays' campaign illustrates how symbolic meaning can override material reality. Bacon and eggs were no more necessary nutritionally than other foods, yet through media representation and authoritative endorsement, the meal became a socially constructed ideal. The campaign blurred the line between factual health information and manufactured desire, demonstrating how advertising can create a perceived need that exists independently of tangible necessity. In effect, the campaign created a hyperreal breakfast culture, where the symbolic associations of health, vigor, and modernity dictated consumer behavior.

This example also highlights the broader social power of advertising in shaping collective norms. By embedding symbolic messages into everyday routines, the campaign influenced not only individual choices but societal expectations regarding diet, health, and propriety. The psychological mechanisms deployed authority appeal, repetition, and cultural framing mirror techniques seen in other early campaigns, such as Listerine, but with a more positive, aspirational appeal rather than fear-based persuasion. Together, these cases reveal the capacity of early advertising to construct symbolic realities, instill psychological dependencies, and guide social behavior, laying the groundwork for contemporary marketing strategies.

4.2. Comparative Analysis of Listerine and Bacon-and-Eggs Campaigns

The Listerine and bacon-and-eggs campaigns, though differing in tone and strategy, share a common underlying logic: both manufactured consumer needs by shaping perceptions rather than responding to preexisting demand. In the case of Listerine, fear and social anxiety were leveraged to create a sense of deficiency-the threat of halitosis-while the bacon-and-eggs campaign employed authority and cultural norms to construct an aspirational ideal of health and vitality. Both campaigns illustrate the ability of advertising to create hyperreal environments, in which symbolic meaning and social messaging take precedence over material necessity.[29]

A key similarity lies in the strategic use of psychological persuasion. Listerine utilized fear as a motivator, portraying bad breath as a hidden danger with social consequences, while Bernays' bacon-and-eggs campaign relied on the perceived legitimacy of medical

[27] Irene Catherine Clarke Westfall, "'Persuasion for Profit': Public Relations and Corporate Power at Midcentury" (Bachelor of Arts with Departmental Honors, Wesleyan University, 2022), https://doi.org/10.14418/wes01.1.2659.

[28] Westfall, "'Persuasion for Profit.'"

[29] Farrell, "Understanding Nutritional Propaganda."

endorsements to persuade consumers. In both cases, the campaigns manipulated social and cultural perceptions to redefine what was considered normal or desirable. Advertisements became more than informational tools-they actively constructed the social realities in which consumers made choices.

However, the campaigns also differ in their emotional and cognitive appeals. Listerine's marketing instilled anxiety, highlighting potential personal failure and social rejection, whereas the bacon-and-eggs campaign inspired aspiration, framing consumption as a route to health, energy, and social conformity. Listerine generated demand through negative reinforcement, whereas Bernays encouraged it through positive reinforcement and authority validation. These differences demonstrate that hyperreal consumption can be driven by both fear and aspiration, depending on the strategic framing employed by advertisers.

Both examples also underscore the long-term implications of early advertising practices. They reveal that consumer behavior can be shaped by symbolic constructions and media-driven narratives, rather than by objective need alone. By creating hyperreal conditions in which psychological and social cues dictate perceived necessity, advertisers established enduring patterns of influence that continue to inform contemporary marketing strategies. The comparison highlights that, whether through fear or authority, advertising has the power to construct reality, guiding not only individual choices but collective cultural norms.

5. Contemporary Implications

The lessons from the Listerine and bacon-and-eggs campaigns extend far beyond their historical context, shedding light on the persistent influence of hyperreal advertising in contemporary society. Today, media-driven manipulation has grown exponentially in scale and sophistication, fueled by digital platforms, social media algorithms, and real-time data analytics. Modern campaigns often rely on the same fundamental psychological mechanisms as early advertising-fear, authority, social proof, and aspirational framing-yet they operate in environments where messages are personalized, continuous, and often invisible to consumers.[30]

Hyperreality in contemporary marketing manifests most clearly in the creation of needs and desires that exist independently of material necessity. Social media influencers, targeted advertisements, and immersive digital experiences construct symbolic worlds in which consumption signals identity, status, or belonging. Just as Listerine medicalized bad breath to instill a fear-driven need, today's campaigns may link happiness, self-worth, or social approval to the acquisition of certain products, brands, or experiences. Similarly, authority-driven persuasion, exemplified by Bernays' bacon-and-eggs campaign, has evolved into endorsements from celebrities, experts, and even AI-generated figures, reinforcing symbolic meanings that influence behavior at scale.[31]

From a regulatory and legal perspective, these developments raise complex questions about the boundaries of ethical advertising. Contemporary laws governing consumer protection, false claims, and deceptive marketing practices attempt to mitigate manipu-

[30] Yogesh K. Dwivedi et al., "Setting the Future of Digital and Social Media Marketing Research: Perspectives and Research Propositions," International Journal of Information Management 59 (August 2021): 102168, https://doi.org/10.1016/j.ijinfomgt.2020.102168.

[31] "Interactive Viral Marketing Through Big Data Analytics, Influencer Networks, AI Integration, and Ethical Dimensions | MDPI," accessed December 5, 2025, https://www.mdpi.com/0718-1876/20/2/115.

lation, but the hyperreal nature of modern advertising often blurs the line between legitimate persuasion and covert influence. Econometric models of consumer behavior now attempt to quantify the effects of psychological, social, and symbolic variables, illustrating how symbolic constructions-rather than material factors-drive demand and purchasing decisions. These models echo the insights of early campaigns, demonstrating that consumption is frequently guided by perception rather than objective necessity.

Furthermore, understanding hyperreality has practical implications for both policymakers and consumers. By recognizing how symbolic messaging shapes desires and social norms, regulators can design interventions to protect vulnerable populations, while consumers can develop critical media literacy skills to navigate a landscape saturated with manipulative signals. At the same time, marketers continue to exploit these mechanisms, highlighting the ongoing relevance of early twentieth-century case studies for interpreting and responding to contemporary trends.

In essence, the historical strategies of Listerine and Bernays' campaigns provide a blueprint for understanding modern hyperreal marketing. They reveal that the intersection of psychology, communication, and consumer behavior remains central to the creation of perceived needs, shaping not only individual decisions but broader cultural norms and economic patterns.

6. Conclusion

The analysis of the Listerine and bacon-and-eggs campaigns demonstrates that early advertising was far more than a tool for selling products; it was a mechanism for shaping psychological needs, social norms, and collective perceptions. Through the invention of halitosis and the reframing of a heavy breakfast as a health necessity, advertisers created hyperreal environments in which symbolic meanings governed behavior more than material realities. These campaigns exemplify the capacity of media to construct desires, instill anxieties, and normalize practices that extend beyond the intrinsic utility of the products themselves.

By situating these historical examples within Jean Baudrillard's theory of hyperreality, this study highlights the enduring power of advertising to simulate needs and manipulate perception. Listerine leveraged fear to generate social and psychological pressure, while Bernays employed authority and cultural norms to encourage aspirational consumption. Despite differing strategies, both campaigns reveal the broader mechanisms through which advertising shapes individual and collective behavior, establishing patterns that continue to influence contemporary marketing practices.

The implications of these findings are significant for today's consumer landscape. In a world dominated by digital media, social networks, and algorithmically targeted advertising, the hyperreal creation of desires has intensified, making media literacy and ethical regulation increasingly crucial. Econometric modeling and behavioral analysis further confirm that symbolic constructions, rather than material necessity, often drive consumer decisions, reinforcing the lessons learned from early twentieth-century campaigns.

Ultimately, understanding the historical interplay between psychology, communication, and consumer behavior provides valuable insight into the continuing influence of hyperreal advertising. By recognizing these mechanisms, policymakers, marketers, and consumers alike can better navigate the complex terrain of mediated desire, ensuring that the shaping of social norms and psychological needs occurs transparently, ethically, and with an awareness of its broader societal impact.

7. References

1. Ayoub, Ramy. Rise of Urbanization and Production Urbanization and Its Role in Economic Growth. 2022. https://doi.org/10.5281/zenodo.14606732.
2. Barroso, Paulo. "From Reality to the Hyperreality of the Simulation." Texto Livre 15 (May 2022): e37426. https://doi.org/10.35699/1983-3652.2022.37426.
3. Baudrillard, Jean. Simulacra and Simulation. Translated by Sheila Faria Glaser. The Body, in Theory - Histories of Cultural Materialism. Univ. of Michigan Press, 2019.
4. Dwivedi, Yogesh K., Elvira Ismagilova, D. Laurie Hughes, et al. "Setting the Future of Digital and Social Media Marketing Research: Perspectives and Research Propositions." International Journal of Information Management 59 (August 2021): 102168. https://doi.org/10.1016/j.ijinfomgt.2020.102168.
5. Farooq, Samiya, and Adeel Maqbool. "Advertising as An Influencing Factor on Consumer Behavior." Revista de Gestão Social e Ambiental 18 (May 2024): e06587. https://doi.org/10.24857/rgsa.v18n9-076.
6. Farrell, Paddy. "Understanding Nutritional Propaganda." TriageMethod, February 27, 2025. https://triagemethod.com/nutritional-propaganda/.
7. Firmansyah, Teuku, Khoirul Muttaqin, Layli Hidayah, and Itznaniyah Murniatie. "THE HYPERREALITY AND SIMULACRA THEORY OF JEAN BAUDRILLARD: ON FASHION TRENDS IN TIKTOK." ELite Journal : International Journal of Education, Language and Literature 4 (August 2024): 27–34. https://doi.org/10.26740/elitejournal.v4n2.p27-34.
8. "From Surgery Antiseptic to Modern Mouthwash | Listerine® Philippines.". https://www.listerine.com.ph/about.
9. Hall, Stuart and The Open University, eds. Representation: Cultural Representations and Signifying Practices. Repr. Culture, Media and Identities. SAGE, 2012.
10. Hester, Jeff. "History of Halitosis." Dental Depot Arizona, March 7, 2023. https://dentaldepotarizona.com/history-of-halitosis/.
11. "History of LISTERINE® | About LISTERINE® | LISTERINE® Middle East.". https://www.listerine-me.com/about.
12. "Interactive Viral Marketing Through Big Data Analytics, Influencer Networks, AI Integration, and Ethical Dimensions | MDPI.". https://www.mdpi.com/0718-1876/20/2/115.
13. Lf, Vernon. "From Surgical Suite to Fresh Breath: The History of Listerine®." International Journal of Dentistry and Oral Health 4, no. 4 (2018). https://doi.org/10.16966/2378-7090.263.
14. Mehta, Abhilasha. "Advertising Attitudes and Advertising Effectives." Journal of Advertising Research 40 (May 2000): 67–72. https://doi.org/10.2501/JAR-40-3-67-72.
15. Mohanlal Sukhadia University - Udaipur, " Hyper Reality Boudrilard." n.d. https://mlsu.ac.in/econtents/2289_hyper%20reality%20boudrilard.pdf.
16. Sela, Ron. "Persuasive Advertising: How Ads Shape Consumer Behavior." Ron Sela, November 12, 2024. https://www.ronsela.com/persuasive-advertising/.
17. Student Guide | Digital Collections Blog. n.d. Accessed December 5, 2025. https://blogs.library.duke.edu/digital-collections/mma/guide/student/.
18. Westfall, Irene Catherine Clarke. "'Persuasion for Profit': Public Relations and Corporate Power at Midcentury." Bachelor of Arts with Departmental Honors, Wesleyan University, 2022. https://doi.org/10.14418/wes01.1.2659.

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