Attitudes towards Cyberspace in Youth Education – Selected Problem Areas – Quantitative Research

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ABSTRACT

Aim. The main objective of the presented study is to show the authors the extent of the influence of the virtual e-learning space on young people, on the basis of which they determine the attitudes of primary and secondary school students.

Methods. In the work, the authors used the analytical-synthetic and comparative method of data collection, in quantitative research (using a five-point Likert scale) among young students they used Pearson's chi-square to verify the hypotheses. The research sample of respondents was 217 and the distribution of respondents based on attendance at primary or secondary school was proportional.

Results. Younger primary school students are more likely to agree with the opinion that the virtual e-learning environment affects their feelings, thinking and experiencing the lesson. By examining the degree of influence of social virtual networks over traditional leisure time with family, we found that virtual networks negatively affect the emotional intelligence of Generation Z students. In addition, various characteristics were discovered that influence the digital resilience of adolescents, including gender, family residence, whether there are only children in school, grade, number of digital devices used per week, and length of hours spent online per day.

Conclusion. Currently, cyberspace is full of risks such as phishing, malware, data leaks, and more. On the other hand, it also offers numerous opportunities such as digital commerce, communication, and innovation. It is important to have the knowledge and tools to protect against threats and take advantage of the benefits that this space provides.
Keywords: the world of the Internet, student, education, media literacy, study

Introduction

Educating youth in cyberspace is increasingly important. Cyberspace provides new opportunities for education and interaction, but at the same time it also brings new security risks and challenges that require attention. It is important to educate young people about cyber security, privacy and digital responsibility. Media literacy includes the ability to critically assess, process and understand information found in various media and sources. It is an important skill in the digital age that helps individuals to communicate effectively, make informed decisions and actively participate in social life. Media literacy also includes the ability to recognise and interpret different forms of media such as text, images, video and audio (Plokhikh et al., 2024). It is important to teach and develop this skill in both youth and adults so that they can navigate successfully in today's crowded media environment.

A young person's moods become unstable, moods often change from restlessness, feverish activity to apathy (Schnettler et al., 2024). Shehu Yahaya Tsangem (2022) confirms the mentioned part, and states that the mood is unpredictable in adolescents, it is an emotional "carousel" that increases conflict. Nataliya Yaremchuk et al. (2024) state that feelings and emotional experiences are differentiated and also the so-called higher feelings. As stated by Mária Janková (2020), the most frequent activity on the Internet is chatting (85.3%), the second is activity on social networks (79.9%) browsing the Internet for fun (75%). Thus, almost a third of elementary and gymnasium school students engage in any of these activities on social networks.

Ria Birbal et al. (2009) in their study also identify the so-called term "Facebook" depression. It is a depression that is defined by classic symptoms, but that stems from spending too much time on Facebook. We agree with Jacob Amedie (2015), who points out that this depression is not determined by Facebook itself; it is a depression that can be categorised by different social networks. High school students spend quite a lot of time online. Up to a third of them spend more than six hours a day on social networks. Up to 92% of young people spend more than an hour a day. It is interesting that civically active young people spend less time on social networks (Vansač, 2023). The worldwide increasing spread of deliberately false and

misleading information, known as fake news, through online media is becoming a problem for society. For example, fake news influences elections, reduces acceptance of scientific findings such as human-caused climate change, and in the worst cases, leads to violent action (Allcott & Gentzkow, 2017; Comerford & Gerster, 2021; Traberg et al., 2022). Based on the above-mentioned professional and scientific knowledge of the authors, in our contribution we will measure and analyse the degree of influence of the virtual e-learning space on young people, the degree of influence of gender on the understanding of e-learning information through the virtual space, and the degree of influence of social virtual networks on classic leisure time with the family. The hypotheses of quantitative research will directly follow these research objectives selected and will be verified by statistical methods that will determine the significance (or otherwise) of the hypotheses. With the arrival of the COVID-19 pandemic, many aspects of daily life shifted to the online space. The issue of the quality of medical information available on the Internet has been a widely discussed topic for several decades, not only internationally but also in the Czech Republic (Macháčková & Smahel, 2018; Pleskot & Rusová, 2018; Rusová & Pleskot, 2020)

As reported by Ihor Popovych et al. (2024) one approach to evaluating information on the web is the criteria and checklist-based approach, which is mainly used in academic settings. The evaluation process based on such a list is highly demanding, raising the question of whether and to what extent these criteria are actually applied by Internet users in their daily lives outside the academic environment (Eysenbach & Köhler, 2002; Eysenbach, 2007; Shah et al., 2015; Zhang et al., 2015). They also draw attention to the differences (Bliemel & Hassanein, 2007).

Information seeking is driven by personal experience. Information literacy is key and includes understanding the entire system of thinking and information flows, with critical thinking playing an equally important role (van Zyl et al., 2020).

Efforts to address the credibility of online information are closely linked to the promotion of information literacy (Shah et al., 2015). One common strategy is enhancing information literacy through (self)education, where users learn to recognize key indicators of reliability and apply specific evaluation criteria (Roubalová et al., 2021). In this approach, the responsibility for assessing sources and verifying information falls on individuals, who are encouraged to use critical evaluation tools. However, Miriam J. Metzger (2007) argue that evaluating information sources should not be solely an individual task but rather a shared social responsibility.

Integration of e-learning and Media Literacy

Integrating e-learning with in-person pedagogical approaches requires the creation of relevant theoretical frameworks through which this growing phenomenon can be understood (Ben-Shalom et al, 2023; Silvita et al., 2024). The Community of Inquiry (CoI) framework is an often-accepted theoretical framework used to evaluate online distance learning (Shea et al., 2012). Based on this, by promoting three essential elements – social presence, cognitive presence and teaching presence – a community of inquiry can be created to support student engagement and learning (Paľa et al., 2024). In this context, Clark A. Chinn et al. (2021) describe the current media environment as "complex and epistemically hostile." In education, it is necessary to combat it through authentic learning experiences and the support of multiple educational goals:

Neshat Azizi et al. (2024) conducted a qualitative study to explore the benefits of different modes of engagement for literature students. Their research was based on focus group interviews held at the end of the course and biweekly student learning journals. The study involved a class of 36 second-year English literature students, examining the impact of extensive reading (ER) and extensive viewing (EV) through books and film adaptations of classic literature, as well as general fiction and films.

Additionally, the study highlights the necessity for students to develop knowledge and skills in identifying fake news, understanding how it is created, and recognising methods for its detection. This includes the use of tools to verify the authenticity of images and videos shared online (Apuke et al., 2022; Barzilai & Chinn, 2020).

In addition to these cognitive learning goals, researchers point to the importance of attitudinal goals, such as fostering a critical attitude toward online information or confidence in the ability to recognise fake news (Barzilai & Chinn, 2020; Roozenbeek & van der Linden, 2020; Vraga & Tully, 2021; Yang et al. al., 2021).

Teachers play a key role here, as they are the ones responsible for preparing their students to safely navigate these complex media environments by supporting the educational goals described above (Caena & Redecker, 2019; Falloon, 2020; Franco & DeLuca, 2019).

As Josef Buchner and Elke Höfler (2024) state in their study, pre-service teachers can learn about fake news using the augmented reality escape game Escape Fake. To examine this question, a pre/post-test design was conducted with 45 pre-service teachers (four males, mean age = 22.59 years, standard deviation = 1.80). The results show that after playing Escape Fake, teachers demonstrate significantly higher knowledge about fake news, are significantly more critical of online information, and are significantly more confident that they can spot fake news in the future.

Jingyi Dong et al. (2024), Matteo Perazzini et al. (2023), Sofiia Hrabovska et al. (2024) demand the possibility of integrating the teaching of media literacy into teacher education. The responsibility (co-responsibility) of teacher education institutions to train new teachers in how to critically examine information sources. is another factor that needs to be included not only in school but also national legislation (Ben-Shalom, 2023; Oi et al., 2024). As a result, these teachers will also be able to teach students how to be more sensitive to the information presented online and through social media (Peshkovskaya et al., 2024). According to Martina Pavliková et al. (2023) critical thinking skills need to be developed, students then require training, practice and patience.

Quantitative Research Methods

In terms of methodology, we chose a quantitative type of research. For our questionnaire, we chose the form of scaling. Emil Komárik (2002) states that scaling in a questionnaire helps us determine the level of individual behaviour. Within our questionnaire, we monitored the opinions, thinking and behaviour of adolescents on social networks. Quantitative research is based on the collection and analysis of numerical data using statistical methods to identify relationships between variables. The main advantages of this quantitative research are:

- Objectivity and reliability - because it uses statistical analyses that minimise subjectivity, the same methods can be replicated to verify the results.
- Accuracy and structure - it uses standardised tools (questionnaires, experiments), which allows for accurate measurement of variables, minimising ambiguity in the interpretation of data.
- Possibility of generalisation - the results can be applied to a wider population if the sample selection is sufficiently representative, large samples allow for more reliable conclusions.

Efficiency of processing large data sets - thanks to the use of automated processing methods (SPSS, R, Excel), which allow for rapid analysis, it is possible to examine a large number of respondents in a short time. Reducing the influence of the researcher on the results - unlike qualitative research (where subjective interpretation may play a role), quantitative methods minimize the influence of personal opinions and prejudices (Babbie, 2020; Bryman, 2016; Creswell, 2014).

The total number of respondents was 217, the distribution of respondents based on attendance at elementary or gymnasium was proportional. For our research, we selected elementary and gymnasium students.

As variables in qualitative research, we can consider: age, gender, student's placement in elementary and gymnasium.

Procedures and tools:

- The possibility of identifying relationships between variables - since the use of correlation and regression analyses allows for the search for causal relationships between variables and the obtained results can serve as a basis for predictions.
- Clear interpretation of results - numerical data provide unambiguous answers, the use of graphs, tables and statistical tests allows for easy visualisation of data.
- For statistical evaluation of the questionnaire in cases of significance, we used the statistical software SPSS.
- In our questionnaire, we used the Likert scale. Peter Gavora (2012) defines the Likert scale as a scale on which the respondent expresses his degree of agreement. In the presented questionnaire, we used a 5-point scale, so that respondents could answer neutrally.

The Likert scale is a psychometric method used to measure the attitudes, opinions and perceptions of respondents and is one of the most frequently used methods in surveys and research (Allen & Seaman, 2007; Kale, Chandel & Pal, 2015). It is also used based on clear advantages, which are:

- Simplicity and intuitiveness for respondents.
- Allows for quantitative analysis of attitudes.
- Flexibility in different areas of research.

Disadvantages that may occur when using it are:

- The middle category can be ambiguous ("Neutral" can mean indecision or true neutrality).
- The problem of extreme responses (some respondents choose only extreme options).
- Cultural differences in the interpretation of scale points.

The chi-square test (χ^2 test) is a statistical method used to analyse relationships between categorical variables. It is non-parametric, meaning that it does not require normality of the data. It is used to verify the relationship between two categorical variables, testing whether the observed distribution of values corresponds to the expected distribution. When interpreting the results, we state:

- If the calculated χ^2 value is greater than the critical value of the chi-square distribution, we reject the null hypothesis.
- The p-value determines the probability that the differences between the expected and observed values are random. If $p < 0.05$, the difference is statistically significant (Agresti, 2018; McHugh, 2013).

Research organisation: We conducted quantitative research in an elementary school and a gymnasium in the Poprad district in November and December 2024.

Results of the Empirical Investigation

H_1 The Degree of Influence of the e-learning Virtual Space on Young People

We assume that there is no statistically significant difference between elementary school and high school students in subjective attitudes towards the degree of influence on the opinions and attitudes of pupils and students through virtual space.

$H_{1(2)}$: We assume that there is a significant difference between gender and opinion on whether adolescents understand the information presented on the Internet as a true fact.

For the purposes of expressing the hypothesis, we used Chi-square, where we tried to find out the subjective attitude to the degree of influence of young people's opinions through e-learning teaching in the virtual space. For the purposes of expressing this goal and hypothesis, we determined the level of significance using Chi-square. We determined the level of significance at 5%. We used Chi-square to determine significance. Pearson's Chi-square = 0.357, which is above the significance level, therefore we accept hypothesis H_1.

Table 1
Difference between Students of Different Grades and the Opinion that Influencers Publish Everything about their Lives

	Elementary school		Gymnasium		Total	
	n	%	n	%	n	%
I completely agree	4	4	5	4,14	9	4,1
Agree	13	12,8	12	10,14	25	11,5

	Elementary school		Gymnasium		Total	
I neither agree nor disagree	18	17,6	14	12,2	32	14,7
Disagree	29	28,1	36	31	65	30
I completely disagree	38	37,17	48	41, 3	86	39,6
	102	100	115	100	217	100

Source. Own research.

The second part of the first hypothesis contains two variables, the first of which is gender and the second of which is offered to us by a question asked via a Likert scale. In the analysis, we settled on Pearson's Chi-square = 0.011, which is below the significance level of 0.05, therefore we conclude that we accept H_{12}.

Table 2

The Difference between Gender and Opinion or whether Information Presented on the Internet is Understood as a True Fact

	Woman		Men		Total	
	n	%	n	%	n	%
I completely agree	6	5,8	5	4,4	11	5,1
Agree	9	8,7	4	3,5	13	6
I neither agree nor disagree	11	10,6	8	7,1	19	8,8
Disagree	48	46,2	37	32,7	85	38,98
I completely disagree	30	28,8	59	52,2	89	41
	104	100	113	100	217	100

Source. Own research.

Our established hypothesis was confirmed, so there is no statistically significant difference between elementary school students and gymnasium students in the subjective opinion of the degree of influence through virtual space (p=0.357). Therefore, we cannot claim that the subjective opinion of both compared sets can be generalised to the adolescent population. At the same time, we want to point out that in this hypothesis we tried to measure a subjective opinion, not an objective degree of influence by the virtual e-learning environment, we found out how the adolescents themselves perceive the degree of influence of adolescents. In the first-level data analysis based on a five-point Likert scale, we found that more than 40% of the entire research set answered the set question: I think that the virtual e-learning environment affects us to a great extent, "I completely disagree."

From the given statistical variable, it can be concluded that the majority (79.98%) of respondents from the total number of the research set expressed a subjective opinion of

completely disagree or disagree on the question of the impact of the virtual e-learning environment on adolescents. In terms of comparison, we found no significant statistical difference between the two variables. Elementary school students more often answered completely agree and agree to the set question (16.84%) from the total number of adolescents compared to older high school students (14.28%) from the total number of respondents who participated in our research. In the negative spectrum t. j. if the respondents answered completely disagree or disagree, the results slightly changed for elementary school students (65.27%) from the total number of respondents, gymnasium students (72.32%) from the total number of respondents. It follows from the above that in our research unit elementary school students agreed more often, while gymnasium students disagreed more often. From the given percentages, we conclude that elementary school years have a greater tendency to show agreement with the opinion that the virtual e-learning environment affects their feelings, thinking, experiences from the lesson, this tendency changes for older students. However, we would like to point out that such a finding needs to be checked again. The reason for retesting is that opinions differ by only a few student units.

H_2: The degree of influence of social virtual networks before classic spending of free time with family

We assume that more than 40% of respondents agreed with scrolling social networks before spending free time with family.

Table 3
Distribution of the Likert Scale among Respondents

	Elementary school	Gymnasium	Total	
			n	%
I completely agree	25,2	20		16,43
Agree	28,28	22,45		31,4
I neither agree nor disagree				
Disagree	16,2	15,4		
I completely disagree	26,25	13,31		
Total	102	115	217	100

Source. Own research.

More than 40% of the total number of respondents agreed with scrolling social networks before traditional, classic spending of free time with the family. As part of the descriptive analysis, we found that (47.83%) of the total number of respondents completely agreed or

agreed with the statement about spending time in the virtual world while browsing social networks.

We can state that no significant difference is visible from the point of view of gender. There is also no noticeable difference between the type of school and spending free time with the family. The only visible striking difference is within the type of school in the completely agree/agree category, we found (53.48%) of the total number of respondents from elementary school, with the same opinion, we found (42.45%) of the total number of respondents from gymnasium expressed agreement, the difference among the respondents with the largest and the largest rate of 11.03% of the total number of respondents of elementary schools or gymnasium. On the contrary, in the case of the opinion I disagree/completely disagree, we found (28.71%) of the total number of elementary school students and (42.45%) of the total number of gymnasium students. However, we must state that our goal was to find out and ask for the opinion of using smartphones before spending time with family. Our goal was to find out if more than 40% of adolescents prefer using social networks for their family. It is therefore assumed that when this filter is removed, the percentage of respondents will differ, and therefore we assume that more adolescents spend their free time in the virtual space.

Discussion

In Hypothesis 1, we identified the extent to which e-learning virtual spaces have an impact on young people. D. Randy Garrison et al. (2001) examine the impact of virtual conferencing and online interaction on the development of critical thinking and student engagement in e-learning environments. The authors emphasise the importance of cognitive presence in online learning, which has a direct impact on student motivation.

In another scientific article, Edward L. Deci and Richard M. Ryan (2000) examine self-determination theory, which is often applied to the study of motivation in e-learning environments. They consider the impact of various factors, such as freedom of choice and a sense of competence, on student engagement.

Järvelä and Järvenoja (2011) examine how different emotions and motivations affect collaborative online learning. Emotional factors can have a major impact on the perception and success of e-learning environments, especially among young people who are more sensitive to interactions and support in online courses. This topic has been addressed by several authors such as Terry Anderson and Jon Dron (2011), López-Pérez et al. (2011), Gilly Salmon (2000) and Kreijns et al. (2003), Václav Šimek et al. (2021).

Darko Štefanović et al. (2011) note that universities in Serbia have successfully integrated e-learning technologies into distance learning activities, with student satisfaction being influenced by various factors, including interaction within the e-learning environment. In addition, Al-Araibi et al. (2019) found that e-learning readiness depends on technological factors such as software, hardware, connectivity, security, system flexibility, technical skills and support, and data centre, which are classified as physical environment and facilities.

The implementation of e-learning in universities faces challenges at various stages, including planning and development, implementation, dissemination, and evaluation due to human factors such as teachers, students, and support teams, as well as organisational factors including technology, environment, and culture. These challenges often lead to failures in e-learning projects, many of which remain unreported. However, successful cases of complex e-learning projects occur when teachers, students and support teams work together seamlessly in an e-learning environment (Lobotková et al., 2024).

One of the most important lessons from the COVID-19 pandemic was the importance of technology in carrying out current activities, but especially in the smooth running of the educational process. In many universities around the world, the process of digitisation began long before the pandemic, but it was the pandemic that intensified the efforts of universities to provide digital educational services (Muca et al., 2022). According to the results of the study by Judith Helmer et al. (2022), the introduction of courses that take into account digital innovations is essential in higher education. As stated by Monica Ortiz Cobo et al. (2023) these courses should be completed by the teaching staff in the first phase and after acquiring the necessary skills from the lecturers, they will be able to convey useful information to students in an attractive form through the courses they teach.

The authors Madina S. Ashilova et al. (2024) show that open online courses are an important complement to traditional university education, built on common forms, but operating within a regional dimension. The analysis of the mechanism shows that the core of the dissemination of information on digital media for innovation lies in the effect of governance and supervision management. This is evidenced by the fact that the dissemination of information in digital media helps to improve governance and reduce conflicts (He & Zhao, 2023).

Researchers have studied ease of use based on student perceptions and agree that perceived ease of use is an important factor influencing student acceptance and use of e-learning systems. However, they differ in how they define and measure student acceptance and use of e-learning systems. Tománek et al. (2024) defines student acceptance and use of e-learning

systems as a user's perception based on previous experience with similar technologies, while Bundzelová et al. (2023) include factors such as intuitive navigation and multimedia instructions. Radková et al. (2024) focuses on how students perceive the ease of use of e-learning technologies as a predictor of their willingness and motivation to use them.

Despite these differences, all studies emphasise the importance of designing e-learning systems that are user-friendly and easy to use in order to increase student engagement and adoption (Kobylarek et al., 2022; Tkáčová et al., 2023).

To confirm hypothesis 2 with expert statements, we can state:

- The same data was reported by the aforementioned Guadalupe Espinoza and Jasna Juvonen (2011), who stated that based on his data, 37% of the respondents in his research reported that they had poor, poor quality sleep due to the use of social networks. Candice A. Alfano et al. (2009; Zenelaga et al., 2024) identified that poor sleep contributes to anxiety, depression and reduced self-esteem during adolescence. A study by Heather Clealand Woods and Holly Scott (2016) showed that, specifically, use of social networks at night (before falling asleep/sleep) and emotional investment in social media (also in social networks) were associated with poor quality sleep, low self-esteem, high anxiety and depression. Due to the low heterogeneity, we would recommend using the same quantitative method, which would, however, determine the extent of the problem of viewing and monitoring social networks, for example, before sleep. We therefore recommend conducting research on a representative sample of adolescents in Slovakia. Currently, social networks serve as one of the communication tools, but the problem of excessive addictive consumption is on the rise. The authors of the study (Escalera-Chávez et al., 2024) verified social networks and addiction scales in university students. The goodness-of-fit index (GFI) value is acceptable because it exceeds the theoretical limit of greater than 0.9 and the root mean square error of approximation (RMSEA) is less than 0.05.
- The findings of Narinthon Imjai et al. (2024) indicate that digital connectivity did not impair social skills. However, it had a negative impact on the emotional intelligence of Generation Z students, affecting both their ability to manage their own emotions and their capacity to support the emotional regulation of others.
- Analysis in a study by Eui-Jae Kim et al. (2024), however, also points out that the perception of free time, academic and free time balance and public space for free time have a very important influence on the well-being of adolescents.

- A study by Chunlin Qi and Nunchang Yang (2024) revealed that the digital resilience levels of Chinese adolescents are slightly higher than average (M = 3.5038 > 3.5), but there is still potential for development, especially in active learning. In addition, various characteristics have been discovered to influence the digital resilience of adolescents, including gender, residence in the family, whether there are only children, grade, number of digital devices used per week and length of hours spent online per day.

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Conclusion

Teaching media literacy is key to developing critical thinking and the ability to communicate effectively in the digital world. Media literacy programmes should cover a wide range of topics, such as recognising manipulative information, protecting online privacy, managing cybersecurity, evaluating sources and their credibility, and creating your own digital content. Practical experience and active participation of students should also be an important part of teaching. This can include media analysis exercises, discussions on current topics, media and project creation, as well as simulated situations that allow students to apply their knowledge and skills in real life. In addition, teaching programmes should be adapted to the age and developmental stages of individuals in order to be effective and interesting for all participants. Media literacy should be integrated into different school subjects and contexts so that it can be developed throughout life and help individuals successfully navigate the digital world.

Cyberspace has become an integral part of young people's lives and significantly influences their education, social relationships and value orientations. Young people's attitudes towards the digital environment are shaped not only by their own experiences, but also by the educational approaches of parents, teachers and society as a whole. Effective education for the responsible use of cyberspace should include not only the development of digital skills, but also the strengthening of critical thinking, media literacy and ethical values. It is therefore essential that educational institutions, together with families, play an active role in guiding young people in the use of online technologies. Only in this way can it be ensured that young people use

cyberspace safely, responsibly and with awareness of its potential risks and benefits. Building positive attitudes towards cyberspace should therefore be an important part of the modern educational process.

REFERENCES

Agresti, A. (2018). *An introduction to categorical data analysis* (3rd ed.). Wiley.

Al-Araibi, A.A.M., Mahrin, M. N., Yussoff, R. C.M., & Chuprat, S., B. (2019). A model for technological aspect of e-learning readiness in higher education. *Education and Information Technologies, 24(1),* 1395-1431. https://doi.org/10.1007/s10639-018-9837-9

Alfano, C. A., Zakem, A. H., Costa, N. M., Taylor, L. K., & Weems, C. F. (2009). Sleep problems and their relation to cognitive factors, anxiety, and depressive symptoms in children and adolescents. *Depression & Anxiety*, *26*(6), 503-512. https://doi.org/10.1002/da.20443

Allcott, H., & Gentzkow, M. (2017). Social media and fake news in the 2016 election. *Journal of Economic Perspectives,* 31(2), 211-236. https://doi.org/10.1257/jep.31.2.211

Allen, I. E., & Seaman, C. A. (2007). Likert scales and data analyses. *Quality Progress*, *40*(7), 64-65.

Amedie, J. (2015). The impact of social media on society. *Advanced Writing: Pop Culture Intersections*, *2*, 3-19. https://scholarcommons.scu.edu/engl_176/2

Anderson, T., & Dron, J. (2011). Three generations of distance education technology. *The International Review of Research in Open and Distributed Learning*, *12*(3), 80-97. https://doi.org/10.19173/irrodl.v12i3.890

Apuke, O. D., Omar, B., & Asude Tunca, E. (2022). Literacy concepts as an intervention strategy for improving fake news knowledge, detection skills, and curtailing the tendency to share fake news in Nigeria. *Child & Youth Services*, *44*(1), 88-103. https://doi.org/10.1080/0145935X.2021.2024758

Ashilova, M., Begalinov, A., Pushkarev, Y., Pushkareva, E. (2024). Assessment future evolution of massive open online courses (MOOCs): SWOT analysis (global and regional measuring). *Regionology*, *32*(1), 144-162. https://doi.org/10.15507/2413-1407.126.032.202401.144-162

Azizi, N., Podpera, R., Stur, M., & Obloberdiyevna, D. S. (2024). The Combined Role of Extensive Reading and Extensive Viewing for Enhancing English Literature Students'

Literary Appreciation and Knowledge. *Journal of Education Culture and Society*, *15*(2), 441-450. https://doi.org/10.15503/jecs2024.2.441.450

Babbie, E. (2020). *The practice of social research* (15th ed.). Cengage Learning.

Barzilai, S., & Chinn, C. A. (2020). A review of educational responses to the "post-truth" condition: Four lenses on "post-truth" problems. *Educational Psychologist*, *55*(3), 107-119. https://doi.org/10.1080/00461520.2020.1786388

Ben-Shalom, U., Hajaj, C., Davidovitch, N., & Berger, C. (2023). Online temporary learning groups in higher education – interactions, compensation, and maximisation of achievements in an Israeli case study. *Journal of Education Culture and Society*, *14*(1), 619-633. https://doi.org/10.15503/jecs2023.1.619.633

Birbal, R., Maharajh, H. D., Birbal, R., Clapperton, M., Jarvis, J., Ragoonath, A., & Uppalapati, K. (2009). Cybersuicide and the adolescent population: challenges of the future? *International Journal of Adolescent Medicine and Health*, *21*, 151-159.

Bryman, A. (2016). *Social research methods (5th ed.)*. Oxford University Press.

Buchner, J., & Höfler, E. (2024). Can pre-service teachers learn about fake news by playing an augmented reality escape game? *Contemporary Educational Technology*, *16*(2), Article ep504. https://doi.org/10.30935/cedtech/14335

Bundzelová, K., Ludvigh Cintulová, L., & Buzalová, S. (2023). *Sociálna práca s osobami vyššieho veku*. [Social work with older people]. Vysoká škola zdravotníctva a sociálnej práce sv. Alžbety.

Caena, F., & Redecker, C. (2019). Aligning teacher competence frameworks to 21st century challenges: The case for the European digital competence framework for educators (DigCompEdu). *European Journal of Education*, *54*(3), 356-369. https://doi.org/10.1111/ejed.12345

Chinn, C. A., Barzilai, S., & Duncan, R. G. (2021). Education for a "post-truth" world: New directions for research and practice. *Educational Researcher*, *50*(1), 51-60. https://doi.org/10.3102/0013189X20940683

Cobo, M. O., Králik, R. & Bianco, R. (2020). Refugees' L2 learning: New perspectives on language motivation research. *XLinguae*, *13*(4), 64-80. http://dx.doi.org/10.18355/XL.2020.13.04.05

Comerford, M., & Gerster, L. (2021). The rise of antisemitism online during the pandemic: A study of French and German content. European Union. https://op.europa.eu/de/publication-detail/-/publication/d73c833f-c34c-11eb-a925-01aa75ed71a1/language-en

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publications.

Deci, E. L., & Ryan, R. M. (2000). The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227-268. https://doi.org/10.1207/S15327965PLI1104_01

Dong, J., Hassan, N.C., Hassan, A.B., Chen, D., & Guo, W. (2024). Effect of achievement motivation and self-efficacy on general well-being among students at normal universities in Ningxia: The mediating role of time management. *Behavioral Sciences*, *14*(1), Article 15. https://doi.org/10.3390/bs14010015

Escalera-Chávez, M., Valencia-Márquez, L., & García-Santillán, A. (2024). Adjustment estimation and validation of the addiction to social networks scale using the SEM methodology. *TEM Journal*, *13*(1), 254-259. https://doi.org/10.18421/TEM131-26

Espinoza, G., & Juvonen, J. (2011). The pervasiveness, connectedness, and intrusiveness of social network site use among young adolescents. *Cyberpsychology, Behavior & Social Networking*, *14*(12), 705-719. https://doi.org/10.1089/cyber.2010.0492

Eysenbach, G. (2007). Credibility of health information and digital media: New perspectives and implications for youth. In M. J. Metzger & A. J. Flanagin (Ed.). *The John D. and Cathrine T. MacArthur Foundation Series on Digital Media and Learning* (pp. 123-154). MA: The MIT Press.

Eysenbach, G., & Köhler, Ch. (2002). How do consumers search for and appraise health information on the world wide web? Qualitative study using focus groups, usability tests, and in-depth interviews. *The British Medical Journal*, *9*(324), 573-577. https://doi.org/10.1136/bmj.324.7337.573

Falloon, G. (2020). From digital literacy to digital competence: The teacher digital competency (TDC) framework. *Educational Technology Research and Development*, *68*(5), 2449-2472. https://doi.org/10.1007/s11423-020-09767-4

Franco, P. F., & De Luca, D. A. (2019). Learning through action: Creating and implementing a strategy game to foster innovative thinking in higher education. *Simulation & Gaming*, *50*(1), 23-43. https://doi.org/10.1177/1046878118820892

Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking and computer conferencing: A model and tool to assess cognitive presence. *American Journal of Distance Education*, 15(1), 7−23.

Gavora, P. (2012). *Tvorba výskumného nástroja pre pedagogické bádanie* [Creating a research tool for pedagogical research]. Slovenské pedagogické nakladateľstvo.

Helmer, J., Huynh, T. M., & Rossano-Rivero, S. (2022). Teaching digital innovation processes for services in higher education. *Procedia Computer Science*, *207*, 3469–3478. https://doi.org/10.1016/j.procs.2022.09.405

Hrabovska, S., Partyko, T., & Stelmashchuk, K. (2024). Adaptability to stress in student youth at different stages of the Russian-Ukrainian military conflict. *Insight: The psychological dimensions of society*, *12*, 115–136. https://doi.org/10.32999/2663-970X/2024-12-6

Imjai, N., Aujirapongpan, S., Jutidharabongse, J., & Usman, B. (2024). Impacts of digital connectivity on Thailand's Generation Z undergraduates' social skills and emotional intelligence. *Contemporary Educational Technology*, *16*(1), Article ep487. https://doi.org/10.30935/cedtech/14043

Janková, M. (2020). *Význam internetu a sociálnych sietí v živote žiakov základných a stredných škôl* [The importance of the Internet and social networks in the lives of elementary and secondary school students.] Centrum vedecko-technických informácií SR.

Kim, E.-J., Kang, H. W., & Park, S. M. (2024). Determinants of the happiness of adolescents: A leisure perspective. *PLoS One*, *19*(4), Article e0301843. https://doi.org/10.1371/journal.pone.0301843

Kobylarek, A., Błaszczyński, K., Ślósarz, L., Madej, M. (2022). Critical Thinking Questionnaire (CThQ) - construction and application of critical thinking test tool. *Andragogy Adult Education and Social Marketing,* 2(2), DOI: 10.15503/andr2022.1.

Komárik, E. (2002). *Metódy vedeckého poznávania človeka* [Methods of scientific knowledge of man]. Univerzita Komenského in Bratislava.

Lobotková, A., Šimek, V., & Neuwirth, A. (2024). *Selected didactic strategies for the preparation of undergraduate teachers.* Wyższa Szkoła Społeczno-ekonomiczna W Gdańsku.

Macháčková, H., & Smahel, D. (2018). The perceived importance of credibility cues for the assessment of the trustworthiness of online information by visitors of health-related websites: The role of individual factors. *Telematics and Informatics*, *35*(5), 1534-1541. https://doi.org/10.1016/j.tele.2018.03.021

McHugh, M. L. (2013). The chi-square test of independence. *Biochemia Medica, 23*(2), 143–149.

Metzger, M. J. (2007). Making sense of credibility on the Web: Models for evaluating online information and recommendations for future research. *Journal of the American Society for Information Science and Technology*, 58(13), 2078-2091. https://doi.org/10.1002/asi.20672

Muca, E., Cavallini, D., Odore, R., Baratta, M., Bergero, D., & Valle, E. (2022). Are veterinary students using technologies and online learning resources for didactic training? A mini-meta analysis. *Educational Sciences*, *12*(8), Article 573.

Paľa, G., Gažiová, M., Gruber, J., Apakina, L., & Lesková, A. (2024). Psychological-social attitudes of seniors towards stressful situations in the home environment. *Journal of Education Culture and Society*, *15*(2), 563-580. https://doi.org/10.15503/jecs2024.2.563.580

Pavliková, M., Maturkanič, P., Akimjak, A., Mazur, S., & Timor, T. (2023). Social interventions in the family in the post-COVID pandemic period. *Journal of Education Culture and Society*, *14*(1), 106-123. https://doi.org/10.15503/jecs2023.1.106.123

Perazzini, M., Bontempo, D., Giancola, M., D'Amico, S., & Perilli, E. (2023). Adult attachment and fear of missing out: Does the mindful attitude matter? *Healthcare*, *11*, Article 3093. https://doi.org/10.3390/healthcare11233093

Peshkovskaya, A., Chudinov, S., Serbina, G., & Gubanov, A. (2024). Suicide-related groups and school shooting fan communities on social media: A network analysis. *Computers*, *13*(3), Article 61. https://doi.org/10.3390/computers13030061

Pleskot, O., & Rusová, J. (2018). Internet – The threat or hope of Czech health literacy? *Kontakt*, *20*(4), 458-465. https://doi.org/10.1016/j.kontakt.2018.10.001

Plokhikh, V., Popovych, I., & Kruglov, K. et al. (2024). Strategies for extreme self-organization among handball players. *Journal of Physical Education and Sport*, 24(8), 1849–1859, https://doi.org/10.7752/jpes.2024.08205

Popovych, I., Koval, I., Hoi, N., Omelianiuk, S., Lappo, V., Hoian, I., & Huzar, V. (2024). Correlation between athletes' aggressiveness and parameters of self-efficacy in high-stress competitive situations. *Journal of Physical Education and Sport 24*(6), 1406-1416. https://doi.org/10.7752/jpes.2024.06159

Qi, C., & Yang, N. (2024) Digital resilience in Chinese adolescents: a portrayal of the current condition, influencing factors, and improvement strategies. *Frontiers in Psychiatry*, *15*, Article 1278321. https://doi.org/10.3389/fpsyt.2024.1278321

Radková, L., Buzalová, S., & Kenderešová, E. (2024). Terapeutická podpora pre príjemcov sociálnych služieb so zdravotným postihnutím. [Therapeutic support for recipients of social services with disabilities]. *International Review for humanit and natural sciences*, 14(3), 77-90.

Roozenbeek, J., & van der Linden, S. (2020). Breaking harmony square: A game that "inoculates" against political misinformation. *Harvard Kennedy School Misinformation Review*, *6.* https://doi.org/10.37016/mr-2020-47

Roubalová, M., Kralik, R., & Kondrla, P. (2021). Importance and method of teaching biblical Hebrew and aramaic in religious education of children and adults. *Journal of Education Culture and Society*, *12*(1), 59-67. https://doi.org/10.15503/jecs2021.1.59.67

Rusová, J., & Pleskot, O. (2020). Quality of health information on websites with the greatest ä potential to influence users in the Czech Republic. *Journal of Education Culture and Society*, *11*(1), 281-299. https://doi.org/10.15503/jecs2020.1.281.299

Salmon, G. (2000). *E-moderating: The key to teaching and learning online.* Routledge

Shah, A. A., Ravana, S. D., Hamid, S., & Ismail, M. A. (2015). Web credibility assessment: affecting factors and assessment techniques. Information. *Research*, *20*(1), Article 663. http://informationr.net/ir/20-1/paper663.html#.YgP7PurMJPY

Shea, P., Hayes, S., Smith, S. U., Vickers, J., Bidjerano, T., Pickett, A., & Jian, S. (2012). Learning presence: Additional research on a new conceptual element within the Community of Inquiry (CoI) framework. *The Internet and Higher Education*, *15*(2), 89-95. http://dx.doi.org/10.1016/j.iheduc.2011.08.002

Schnettler, B., Miranda-Zapata, E., Orellana, L., Saracostti, M., Poblete, H., Lobos, G., Adasme-Berríos, C., Lapo, M., Beroiza, K., & Concha-Salgado, A. (2024). Intra- and inter-individual associations of family-to-work conflict, psychological distress, and job satisfaction: Gender differences in dual-earner parents during the COVID-19 pandemic. *Behavioral Sciences*, *14*(1), 56. https://doi.org/10.3390/bs14010056

Silvita, Sutrano, & Indrowati, M. (2024). Improving evaluation skills through flipped-problem based learning with digital storytelling task: A systematic review. *Journal of Higher Education Theory and Practice*, *24*(1), 167-185. https://doi.org/10.33423/jhetp.v24i1.6769

Šimek, V., Oláh, A., & Bočková, K. (2021). Gymnasium Socialization of Homeschoolers during the Covid-19 Pandemic. *Emerging Science Journal*, *5*, 141-156. https://doi.org/10.28991/esj-2021-SPER-12

Štefanović , D., Drapsin, M., Nikolic, J., Scepanovic, D., Radjo, I., & Drid, P. (2011). Empirical study of student satisfaction in e-learning system environment. *Technics Technologies Education Management*, *6*(4), 1152- 1164.

Tkáčová, H., Maturkanič, P., Pavlíková, M. & Nováková, K. S. (2023). Online media audience during the Covid-19 pandemic as an active amplifier of disinformation: Motivations of

university students to share information on Facebook. *Communication Today*, *14*(2), 154-166. https://doi.org/10.34135/communicationtoday.2023.Vol.14.No.2.11

Tománek, P., Radková, L., & Buzalová, S. (2024). Dopady pandémie koronavírusu na sociálne problémy a chudobu starších ľudí na Slovensku. [Impacts of the coronavirus pandemic on social problems and poverty of older people in Slovakia]. *The Person and the Challenges* : Journal of theology, education, cannon law and social studies, *14*(2), 131-146.

Traberg, C. S., Roozenbeek, J., & van der Linden, S. (2022). Psychological inoculation against misinformation: Current evidence and future directions. *The annals of the American Academy of Political and Social Science*, *700*(1), 136-151. https://doi.org/10.1177/00027162221087936

Tsangem, S. Y. (2022). The Adolescence Stage. In E. A. Akinade (Ed.), *Developmental Psychology: A Life-Span Approach* (pp. 71-98). Brightways Publishers.

Van Zyl, A., Turpin, M., & Matthee, M. (2020). How Can Critical Thinking Be Used to Assess the Credibility of Online Information? *Responsible Design, Implementation and Use of Information and Communication Technology. I3E 2020. Lecture Notes in Computer Science*, *12067*, 199-210. https://doi.org/10.1007/978-3-030-45002-1_17

Vansač, P. (2023). Opportunities and pitfalls for young people in the online space. *Philosophy and Canon Law*, *9*(1), 1-10. http://dx.doi.org/10.31261/PaCL.2023.09.1.04

Vraga, E. K., & Tully, M. (2021). News literacy, social media behaviors, and skepticism toward information on social media. *Information, Communication & Society*, *24*(2), 150-166. https://doi.org/10.1080/1369118X.2019.1637445

Woods, H. C., & Scott, H. (2016). Sleepyteens: Social media use in adolescence is associated with poor sleep quality. anxiety, depression and low self-esteem. *Journal of Adolescence*, *51*, 41-49. https://doi.org/10.1016/j.adolescence.2016.05.008

Yang, S., Lee, J. W., Kim, H.-J., Kang, M., Chong, E., & Kim, E. (2021). Can an online educational game contribute to developing information literate citizens? *Computers & Education*, *161*, Article 104057. https://doi.org/10.1016/j.compedu.2020.104057

Yaremchuk, N., Pinchuk, N., Kalahurka, K., & Turko, B. (2024). Formation of professional identity of future teachers under conditions of a digital educational environment. *Insight: The Psychological Dimensions Of Society*, *12*, 229-249. https://doi.org/10.32999/2663-970X/2024-12-8

Zenelaga, B., Goga, A., & Králik, R. (2024). Inclusive universities. Exploring the well-being of university students with special needs in Albania. *Journal of Education Culture and Society*, *15*(2), 373-386. https://doi.org/10.15503/jecs2024.2.373.386

Zhang, Y., Sun, Y., & Xie, B. (2015). Quality of health information for consumers on the web: A systematic review of indicators, criteria, tools, and evaluation results. *Journal of the Association for Information Science and Technology*, *66*(10), 2071-84. https://doi.org/10.1002/asi.23311