RESEARCH ON MEDIA LITERACY AMONG FIRST AND SECOND YEAR STUDENTS IN SECONDARY EDUCATION

Skopje, June 2024

AGENCY FOR AUDIO AND AUDIOVISUAL MEDIA SERVICES

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Contents

(1)

INTRODUCTION AND RESEARCH OBJECTIVES

In the dynamic world of media and information technologies, young people come across many opportunities, but also challenges. This quantitative study conducted among students aged 14 to 17, enrolled in the first and second year in secondary education, in gymnasiums and vocational schools in North Macedonia, has the purpose of investigating and analyzing their level of media literacy and interaction with the media. Media literacy is a core competency in the modern world, where the ability for understanding, critical analysis and media content creation is a necessity. Media literacy is not only the ability to read and understand media content, but also a critical engagement with it, as well as the capacity to create content. Raising media literacy among young people is important not only because it prepares them to be informed, responsible and active citizens in society, but also because it enables them to deal with challenges such as disinformation and personal data protection on the Internet.

Broadly defined, media literacy is the ability to access media, analyze, evaluate, and create media content and act using all forms of communication. *The term media literacy includes two concepts: media and literacy.* Media refers to all electronic or digital means, print and artistic visuals used to transmit information or messages to a large audience. Literacy is the ability to encode and decode symbols and to synthesize and analyze messages.[1] This research directly examines the very two aspects of this term by assessing the knowledge, views and practices of the students enrolled in the first and second year in secondary education.

North Macedonia is active in improving media literacy, even though challenges do still exist, particularly in integrating media literacy into formal education. Some of the activities, as well as the institutional efforts that are implemented in the area of media literacy among young people in the country are as follows:

1 US National Education and Media Literacy Association available at: https://namle.org/resources/media-literacy-defined/

1.
Institutional efforts:

The **Ministry of Education and Science, through the Bureau for Development of Education**, in close cooperation with the USAID Media Literacy Project "YouThink" has been working on the introduction of media literacy in several subjects in primary education. This project is supported by USAID and implemented by IREX, in cooperation with local partners Institute for Communication Studies, Macedonian Media Institute and Youth Educational Forum.

The **Agency for Audio and Audiovisual Media Services** (AVMU) is dedicated to promoting the understanding and importance of media literacy. It includes supporting the Media Literacy Network, organizing Media Literacy Days, started in 2019, conducting surveys on the level of media literacy among citizens, awareness raising campaigns on the critical importance of media literacy, workshops, trainings, etc.[2] The powers of the media regulatory authority in the area of media literacy arise under Article 26 of the Law on Audio and Audiovisual Media Services[3]. The importance that the regulatory authority attaches to media literacy is reflected in the fact that its development and promotion are part of the mission determined by the Agency in its Strategic Plan 2024-2028[4]. This research is the third one initiated by the regulatory authority, and the first one relating to this particular population of young adolescents. By conducting it, the Agency provides concrete support to the activities that are implemented within the framework of the project "You Think".

2 You can find more information on the activities of the Agency at https://mediumskapismenost.mk/

3 Law on Audio and Audiovisual Media Services ("Official Gazette of the Republic of Macedonia" no. 184/13, 13/14, 44/14, 101/14, 132/14, 142/16, 132/17, 168/18, 248/18, 27/19) and the Law amending the Law on Audio and Audiovisual Media Service ("Official Gazette of the Republic of North Macedonia" no. 42/20, 77/21, 154/23 and 55/24).

4 Strategic Plan of the Agency for Audio and Audiovisual Media Services 2024-2028, available at: https://shorturl.at/bdwzN

2. Educational integration:

The Bureau for Development of Education has adopted and published a Media Literacy Framework for Primary Education5 on the basis of which, in the resent period, media literacy has been integrated into the mother tongue subject from first to sixth grade. In the 2023/2024 academic year, the integration in the mother tongue subjects from seventh to ninth grade is still ongoing, but it also taking place in parallel in other subjects (history, society, informatics), according to the guidelines provided in the Media Literacy Framework. In the future, this integration of media literacy in primary education can create a solid foundation and enable the next generation of the students to develop critical skills to analyze and understand media content from an early age, and in particular, further into secondary education, where they face more complex challenges and have greater exposure to different media platforms and content. Also, in the upcoming period, a framework by which media literacy can be introduced in secondary education will be developed, and this research should provide baseline data on the level of media literacy, thus when repeated after a few years, it will be possible to see the effect and impact.

3. Activities of the civil society sector:

The civil society sector in North Macedonia plays a significant role in promoting media literacy through various projects and activities. There is a wide spectrum of participants in the civil society sector who work to increase media literacy in North Macedonia and most of them are members of the **Media Literacy Network (MLN)**, which at the time of writing this report has 86 members (institutions, media outlets, civil society organizations, companies and in-

5 Media Literacy Framework for Primary Education, available at: https://www.bro.gov.mk/wp-content/uploads/2023/10/Ramka-za-mediumska-pismenost-vo-osnovnoto-obrazovanie_MK.pdf

dividuals/experts)[6]. They play an important role in educating young people and the public in general about critical thinking and media content evaluation skills, particularly in combatting disinformation. One of the most significant projects currently related to introducing media literacy into formal education is USAID's Media Literacy Project "YouThink"[7], working directly with the Ministry of Education and Science and the Bureau for Development of Educational to introduce media literacy in mother tongue curricula from first to ninth grade, as well as in the curricula of other subjects such as society, informatics and history. In the following two years, the project will continue working on the introduction of media literacy in secondary education. In parallel, the work with higher education institutions has continued, having the purpose of introducing media literacy topics into their programs, with a particular focus on institutions that produce teaching staff in the country.

4.
National Youth Strategy (2023-2027):

This strategy contains a special chapter dedicated to informing young people about strategic goals for empowering young people with knowledge and skills for media and digital literacy[8].

5.
Media Literacy Days:

Organized by the Media Literacy Network with the support of the Agency for Audio and Audiovisual Media Services, started in 2019. In the 2023 edition, a series of events were organized under the motto "A fake news for fastest finger first", which included panel discussions, debates, workshops, a multimedia exhibition and a documentary screening. These activities take place during UNESCO's Global Media and Information Literacy Week[9].

6 You ca see all members of the Network at: https://mediumskapismenost.mk/clenki-na-mrezata/

7 USAID's Media Literacy Project: https://www.irex.org/project/youthink-media-literacy-north-macedonia

8 National Youth Strategy (2023-2027) https://ams.gov.mk/campaign/naczionalnata-strategija-za-mladi-2023-2027

9 More information about the Media Literacy Days 2023 is available at: https://mediumskapismenost.mk/denovi-na-mediumska-pismenost-2023/

Research objectives

Within the context of the reforms to include media literacy as an approach in formal education, which started in 2020, this quantitative research aims to make a targeted assessment of the situation among young people in this area. This is an important step towards creating appropriate educational reforms and programs for secondary education that will increase media literacy among young people.

The main objective is to do research on the opinions, habits and perception of first and second year students in gymnasium and vocational education, with a focus on their ability to think critically and understand the media messages that are transmitted daily via various media and information channels. It includes understanding of how to create, but also manipulate information, as well as the ability to analyze and interpret media content. An important aspect is the degree of understanding of the difference between objective and subjective information, as well as the understanding of the importance of independent and professional sources of information.

The research, and thus the survey questionnaire, cover the following themes:

I. **General information:** Collecting general information about media habits and perceptions.

II. **Student Data (Demographics):** This area includes demographic information about the students covered in the survey sample.

III. **Critical thinking:** This part of the questionnaire assesses the student's ability to analyze, evaluate true and/or false information by different types of questions - hypothetical situations.

IV. **Television:** What does "watching TV" mean for young people, insight into television viewing habits, preferred content and time spent watching TV programs.

V. **Internet:** Collecting information about students' access to the Internet, their Internet habits, use of social networks, content preferences, online games, Internet activities.

VI. **Mobile phone and use of electronic devices:** General information about the frequency of engaging in different mobile phone activities.

Research sample

Sample size

Demographic characteristics of the respondents

(2)

RESEARCH METHODOLOGY

In order to conduct the research, a quantitative research methodology was used on a representative sample consisting of the students enrolled in the first and second year in secondary vocational and gymnasium education in North Macedonia. The students' age category is from 14 to 17 years old. The research was conducted by means of the PAPI technique (Paper-and-pencil interviewing) without assistance (self-administered survey), after previously obtaining informed consent by the parents. The data were processed by means of the software program SPSS (IBM SPSS Statistics Program), using the descriptive statistics method. The Rating Agency conducted the research, data processing and analysis.

In order to achieve the research objectives, AVMU and IREX prepared a questionnaire, sent to the Rating Agency by AVMU. A questionnaire of 47 closed and open-ended questions was prepared by its technical corrections, and by joint coordination between the two parties. In order to check the logic and clarity of the questions, the questionnaire was tested by a pilot research followed by additional technical corrections.

The administrators engaged by the Rating Agency were trained by prof. Dr. Anna Fritzhand, doctor of science in psychology to explain the process and the manner of how to fill out the questionnaire to them. The training helped them become familiar with the research methodology and the questions in the questionnaire. If the students had dilemmas or questions while filling out the survey, the administrator was to be in charge of helping them and guiding them in the filling process.

The selection of the respondents (students) was done randomly from several classes of the first and second year in a total of 40 secondary schools in 19 municipalities (20 gymnasium education, 20 vocational education), with territorial coverage in all eight statistical regions of the country.

Table 1. Regional coverage of secondary schools	In percentages
Skopje	31,4%
Northeastern	9,3%
Polog	10,7%
Pelagonia	7,5%
Southeastern	7,4%
Southwestern	17,4%
Eastern	8,6%
Vardar	7,7%

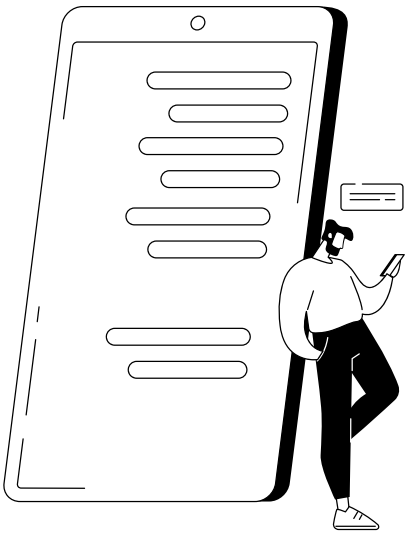
The sample has been compiled on the basis of data on students enrolled in the first and second year in secondary education, obtained from the Ministry of Education and Science, and it is representative of the research population, whereas additional detailed data about it can be viewed in Annex 1 of this Report. The survey instruments were distributed by the administrators, and students filled out the questionnaires independently during the homeroom period.

The control of the surveys was conducted on the spot (in the classroom) by the administrator and the coordinator on the same day of the survey, in order to see if they were completely and correctly filled out.

Data processing included data entry, coding of variables, logical database cleaning, and production of general and cross-sectional results on the basis of which data are interpreted and findings are generated.

Research sample

For the research purposes, a stratified sample of three stages has been designed for students enrolled in the first and second year in secondary schools (a total of 34,246 students), with **two sub-samples - one for gymnasium school students and one for secondary vocational school students.** The research is related to first- and second-year students aged 14 to 17 who are enrolled in state secondary schools in North Macedonia.



That is:

Table 2.
Representation of gymnasium and vocational school students

Vocational school students:	Gymnasium school students:
First year: 11,553 students	First year: 5,588 students
Second year: 11,231 students	Second year: 5,874 students

Sample size

In order to ensure the relevance of the research, according to the data on enrolled students obtained from the Ministry of Education and Science, a large enough sample which is representative of the entire population, that is, a certain number of persons (in our case, students in secondary education - gymnasium and vocational) was made. The sample size is calculated using the following formula:

$n = N * [Z2 * p * (1-p) / e2] / [N - 1 + (Z2 * p * (1-p) / e2]$[10]

10 Finite Population Correction Factor Formula

Where:

Z = 1.96 (for 95% confidence level)

p = 0.5 (conservative approach11)

E = 0.03 (3.1% margin of error on total sample and 4% on each subsample)

N = 34,246 (total number of the students of two years in secondary schools)

This calculation had determined that **sub-sample 1 - for respondents of secondary vocational education consisted of 584 students, and sub-sample 2 - for respondents of gymnasium education - of 580 students.** Of each sub-sample, the results were extracted individually for the specific sub-group of the respondents – separately for gymnasium and separately for vocational education. The two sub-samples together give a total number of 1,164 respondents, **but for the analysis of the total sample** (that is, to extract the general results of both groups together) **a joint sample of a total of 884 respondents** (300 respondents of gymnasium and 584 respondents of secondary vocational education) **was created.** This sample of 884 respondents is representative of the two target sub-groups when the results are generalized for the first- and second-year students in secondary education. The sample was formed by extracting a pre-calculated number of cases (surveys) from the total base (the total number of conducted surveys) by random selection, in order to obtain the appropriate representativeness of the sample and percentage representation between gymnasium and vocational education students. The margin of error of the total sample is +-3%.

11 A conservative approach in the context of the sample size calculatioon formula means using a value for p (particular characteristic occurance probability) which is central or neutral such as 0,5. Using 0.5 for p is conservative because this value maximizes the product p*(1-p), which is part of the sample size calculation formula. This lead to a larger sample size providing more assurance that the sample will be representative for the netire population. In other words, this is precautinary approachused to ensure that sample is large enough to be representative, even if the exact probability of the population characteristics is not known.

Demographic characteristics of the respondents

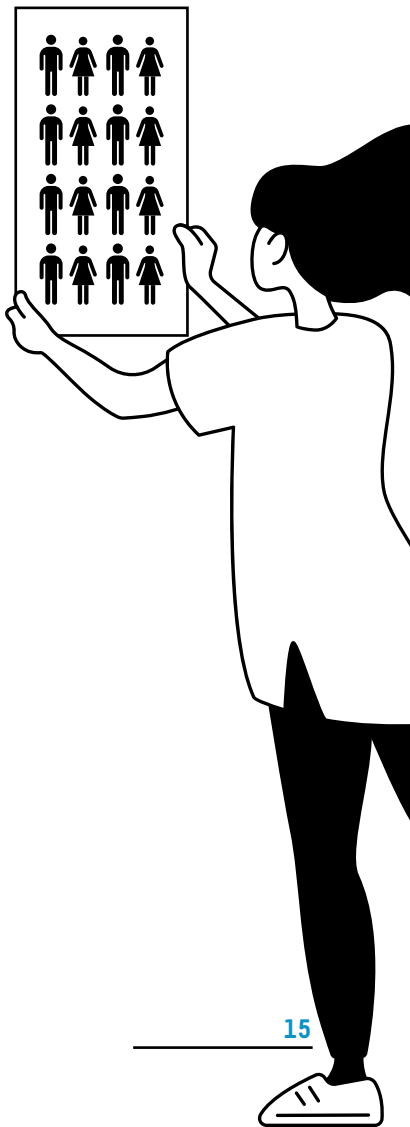
In the total sample of surveyed students, two thirds of them (66.1%) are of secondary vocational education, whereas 33.9% of them are of secondary gymnasium education.

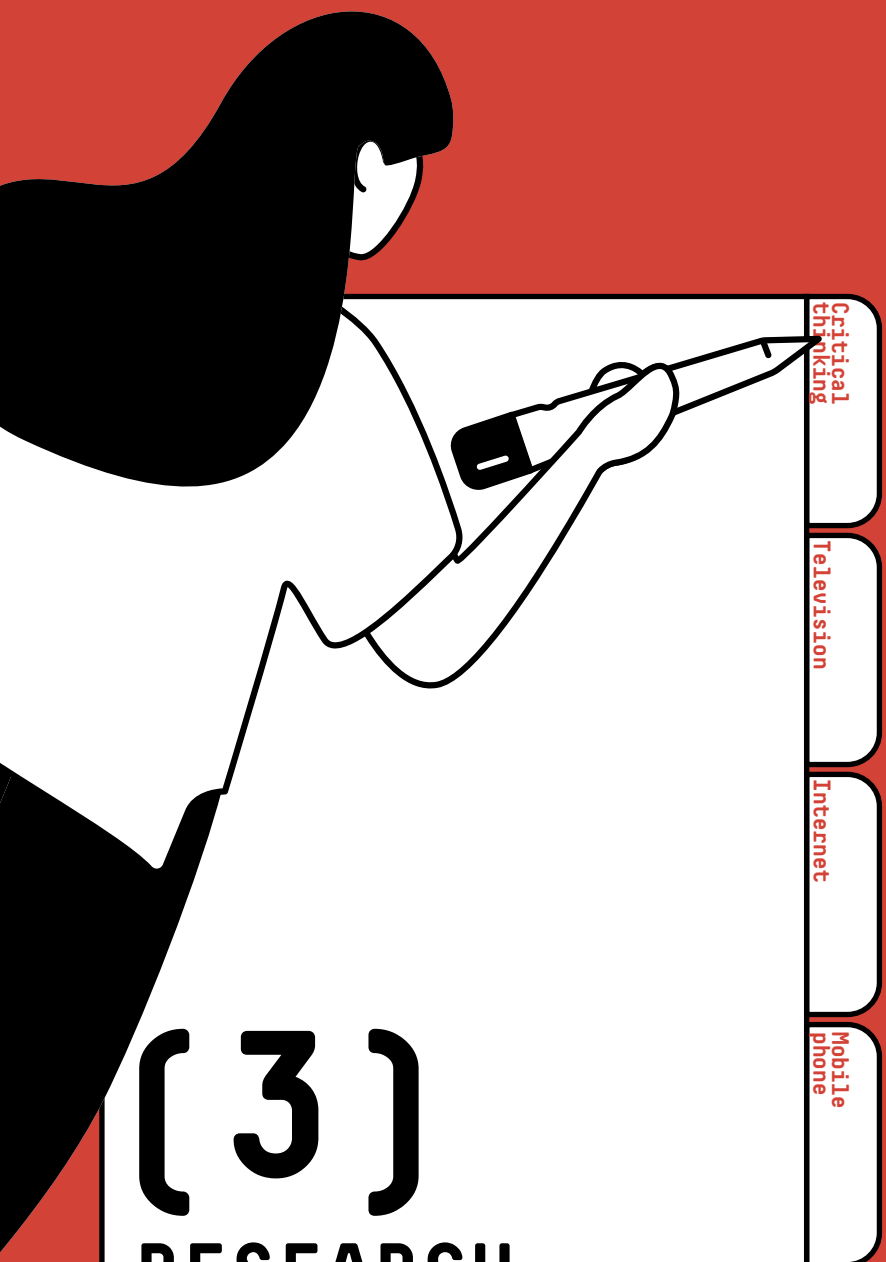
In regard to gender, of the total sample of secondary school students surveyed, 44.3% are male students, and 55.7% are female students.

When it comes to the age of the students, the largest number of them (48.5%) are 15 years old, whereas 44.9% of the students are 16 years old. Those who are 14 years old are represented by 5.7%, whereas students who are 17 years old are represented by 0.9%.

The language of instruction is predominantly Macedonian, that is, 65.5% of the students are instructed in the Macedonian language. The Albanian language is used as the language of instruction by 31.1% of the surveyed students, whereas the Turkish language of instruction was represented by 3.4%.

The predominant language in students' households is Macedonian, by 63.1%. The Albanian language is present in 31% of the surveyed households, the Turkish language in 5.1%, whereas other languages are represented by a total of 0.8%.





(3)

RESEARCH KEY FINDINGS BY THEMES

Critical thinking

Television

Internet

Mobile phone

Use of electronic equipment

These summarized key findings refer to the total population data, that is, to the sample that includes students of secondary vocational schools and those of gymnasium schools.

I. Critical thinking

Within the context of examining students' critical thinking, several hypothetical situations were given in the questionnaire, and they were asked to determine their own reaction to these situations. Furthermore, in the same section, questions were asked about the terms disinformation, false information (misinformation), as well as questions about their perceptions of the information they acquire through social networks and television.

Most of the students (87.2%) would check what data a given application would have access to and would think before installing it. About 13% do not perceive a risk and would allow access to their data.

A significant percentage of the students (57.2%) consider that displaying posts based on user activity (likes and comments) is a result of their own activity on social media. This response is more prominent among male compared to female respondents.

In regard to clicking links with potential scams, just over two-thirds (68.2%) of the students would take preventive measures (consultation with a friend) before opening the content. Caution is more prominent among female compared to male respondents.

The majority of the students (96.3%) are not familiar with techniques and tools for verifying the origin of photos posted on the Internet. Of those that are mentioned (3.7%), Google Lense and Google Images are most often stated.

Almost half of the students (47.9%) consider it important to read Terms of Use before registering on social media or applications, whereas less than half (37.3%) do not have time to read and automatically agree to the Terms of Use.

Two-thirds (66.7%) of the students correctly define disinformation[12] as incorrect information with the intention of harming someone of lying. A little more than a quarter (26.9%) of them consider that disinformation is incorrect information shared without the intention of harming.

For more than half (62%) of them, misinformation is incorrect information shared without intention of harming[13], whereas for about a third (32.7%) of them it is incorrect information with intention of harming.

The largest majority (84.2%) of the students believe that people often seek information that is consistent with their own beliefs and views. A significant number of them (63.7%) agrees that the information they get on social media is mainly controlled by algorithms.

A large majority of the students (77.4%) do not consider that the information on TV is always true, in contrast to slightly more than one-fifth of them, 22.6%, who consider it true.

II. Television

Slightly more than half of the students (51.7%) associate watching TV with watching TV channels on TV at the time the programs are broadcast. For 23% of them, watching TV is watching on-demand programs on TV (via Netflix, HBO Go, Amazon Prime Video, Showtime, etc.).

Almost two-thirds of the students (65.4%) watch TV less than one hour on a school day. On the weekend, viewing time increases, that is, 37.7% of the students do watch TV from 1 to 3 hours a day.

Sports matches (38.5%) and feature movies (36.5%) are the most popular among students, that is, they watch them the most.

There is the greatest agreement that there are too many advertisements on TV (80.8%). Nearly two-thirds (64.6%) of the students agree that there are too many news and debate shows on TV. On the other hand, 59.5% of the students express the opinion that

12 Information that is incorrect and intentionally created to harm a person, group, organization or country. https://recnik.medium.edu.mk/termin/dezinformacija/

13 Incorrect information shared without intention of harming or manipulating. https://recnik.medium.edu.mk/termin/pogresna-informacija-misinformacija/

there are not enough programs that they like.

III. Internet

Almost all (93.1%) students access the Internet via their smartphones. On a school day, 41% of the students use the Internet up to 3 hours a day, 31% use it from 3 to 5 hours a day and 29.2% more than 5 hours a day. On the weekend, more than two-thirds (67.9%) of the students spend more than 5 hours actively on the Internet.

Social media (89%) and listening to music online (72.6%) are the most common Internet activities among students.

Shooting video games (20.5%) and sports games (16.9%) are the most common categories of games played by students each day. The results show an increased number of hours that students spend playing video games on the weekend.

TikTok videos (62.1%) are the most popular among students. For almost half of the respondents (46.2%), these are short videos (reels) on Instagram, and in third place are short videos (shorts) on YouTube (30.9%).

The prevailing opinion among secondary school students is that the contents of social media are true (45.9%). Only a quarter, about 25%, accept the contents of social media with a reservation.

Instagram (46.9%) is the most popular social medium among students, followed by TikTok (29.1%).

A large majority of the students would not share home addresses (88%), email addresses (82%) and mobile phone numbers (83%) online.

IV. Mobile phone

As many as 86% of the students use mobile phones to access social media through applications on a daily basis, making this activity dominant among mobile phone usage options.

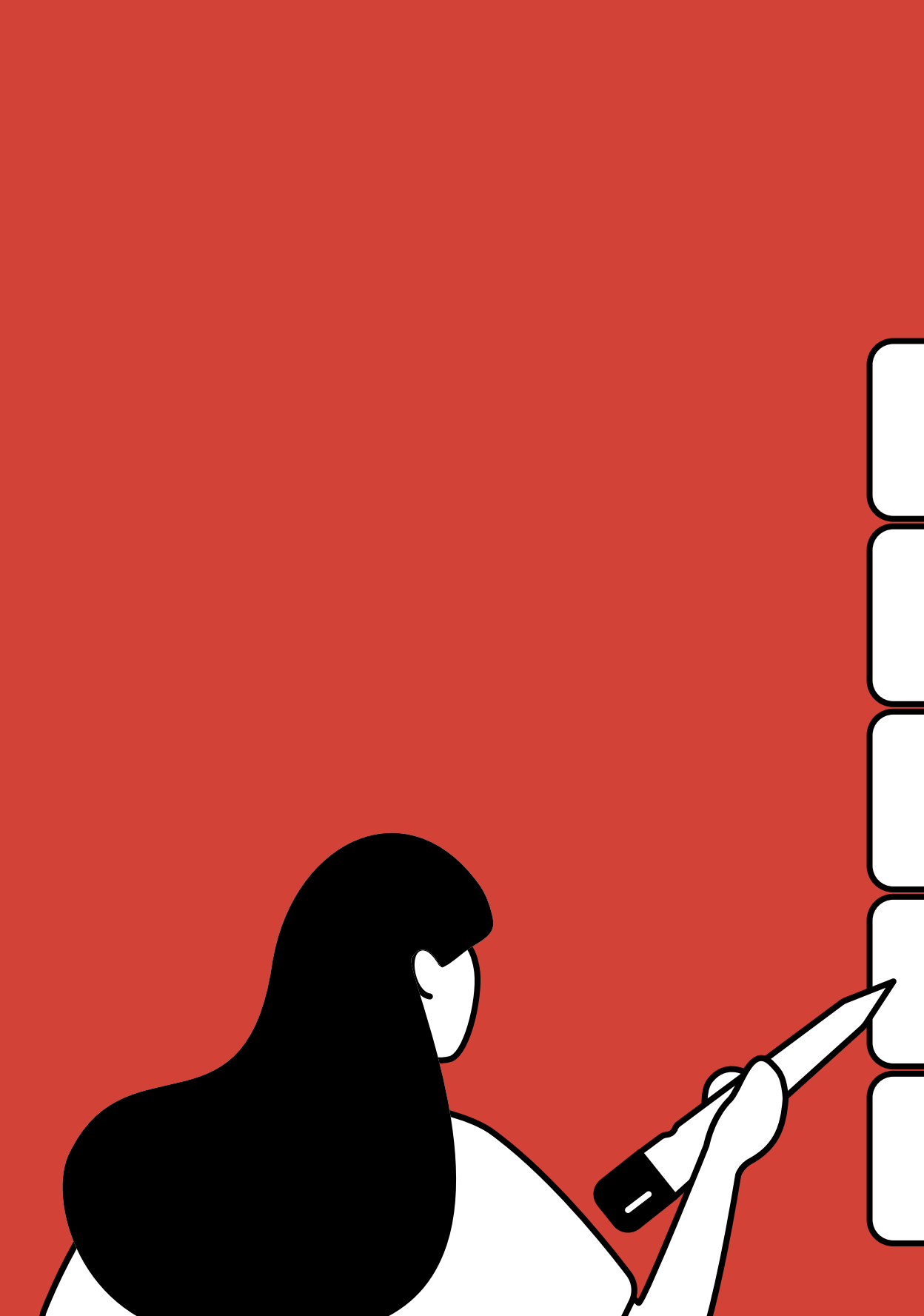
Students actively consume music via their mobile phones, with 76% doing so every day. More than two-thirds of the students (69%) watch videos on their phones every day.

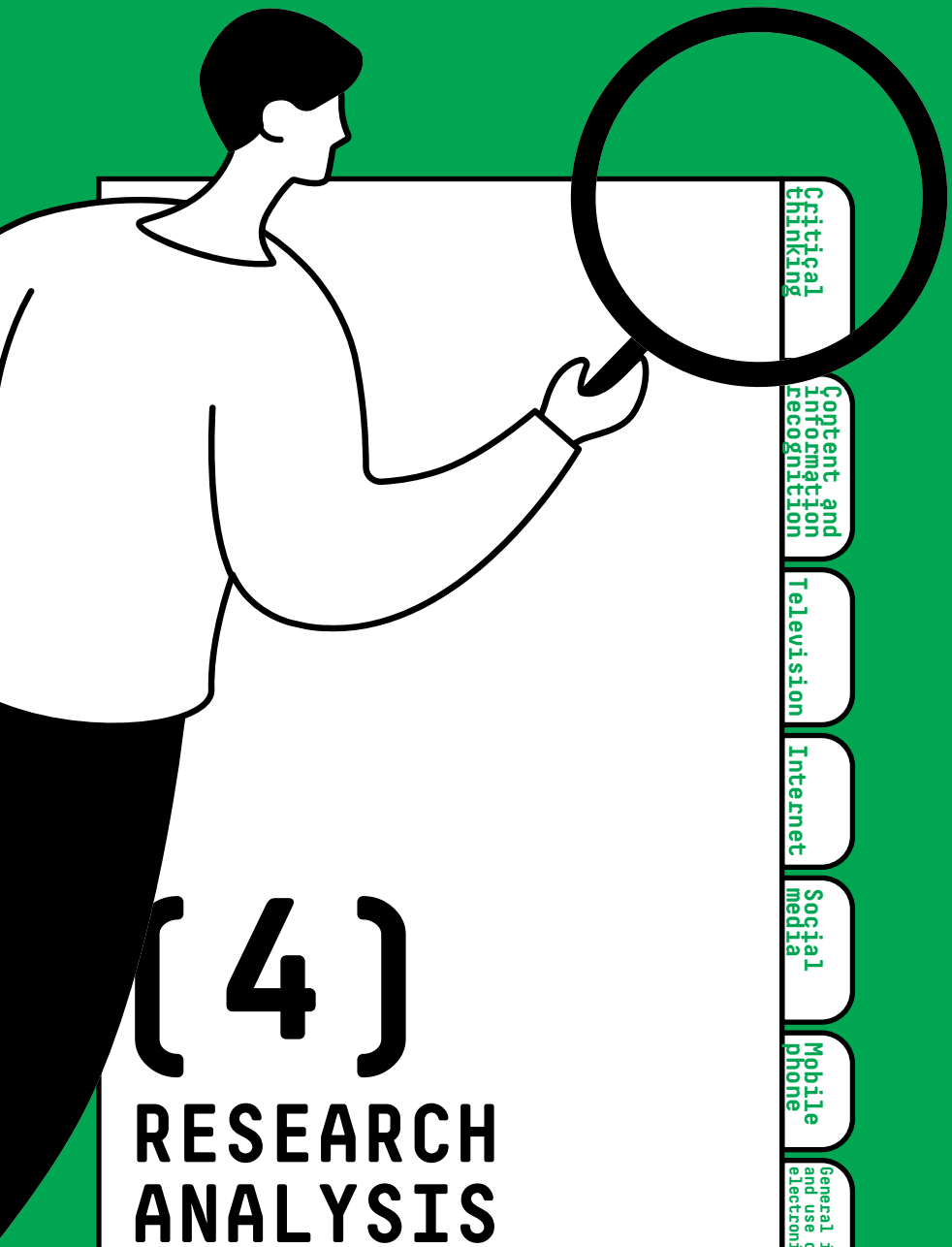
V. Use of electronic equipment

Using the mobile phone for conversations (68.8%) and social media (67.1%) are activities that more than two-thirds of the students would miss.

The daily use of mobile (smart) phones by a dominant 91.5% of them and the use of personal computers or laptops by 57% of them show a high degree of presence among students.

Six out of ten students consider that they do not receive enough information at school about how to use the media and about the meaning of media content.





Critical thinking

Content and information recognition

Television

Internet

Social media

Mobile phone

General information and use of electronic equipment

(4)

RESEARCH ANALYSIS AND RESULTS

1.1. Critical thinking

Critical thinking[14] is the process of conceptualizing, applying, analyzing, and synthesizing all information gathered by observation or experience to form one's own opinion or view. Critical thinking requires examining and questioning everything we see, hear, read or experience. The result of critical thinking should be reliable decisions based on reliable information.

The first part of the research put the main focus on the critical thinking of the first- and second-year students in gymnasium and vocational education. Critical thinking is a key element of media literacy that enables young people to assess, analyze and interpret media content in an informed and critically oriented manner. This ability is particularly important in contemporary society where information and news are readily available and are often presented in a way that may be biased or not reflect reality.

Critical thinking enables students to evaluate sources of information, understand potential biases or intentions behind media messages, and form their own views. Within the context of media literacy, critical thinking is the basis for developing the abilities to distinguish fact from opinion, truth from disinformation, and reality from manipulation.

The first question in this set provided a hypothetical situation that read: "Suddenly you notice a lot of photos of older people in your social media feeds, and then you realize that your friends have been using applications like FaceApp to make their faces look older. These applications require installation, access to the camera or to enter personal data". Students were asked to tell whether they would allow these applications access to their data, photos and videos. The answers show that the largest majority of the students (87.2%) would first check what data the application will have access to and think about

14 Critical thinking definition, извор: https://recnik.medium.edu.mk/termin/kriticko-razmisluvanje/

whether to install it. Observed in isolation, this data indicates a high level of awareness of data privacy among students. A small percentage of them (7.7%) consider that there is no danger and that they would allow access to their data without concern, whereas 5.1% would do it immediately, without thinking, which is a total of 12.8% of the students who feel that their privacy and personal data are not threatened by installing an application.

According to the cross-sectional results (Figure 1), 5% more vocational education students would check the application before installing it, compared to gymnasium education students.

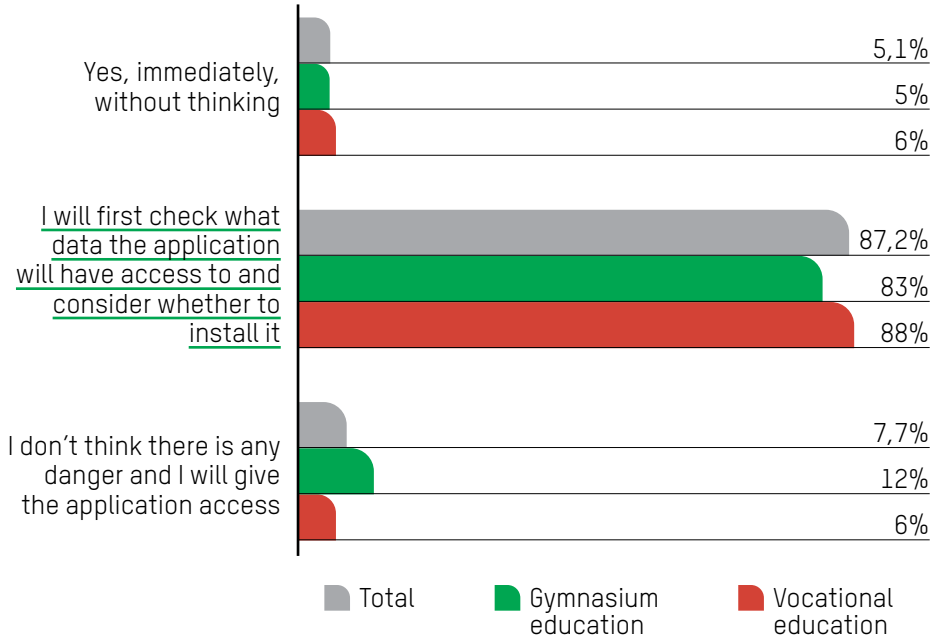
However, if the students' answers to some of the other sets of questions are taken into account, one gets a different impression. Here it is significant to highlight the phenomenon of "socially desirable responding" where students know what they should do, what is desirable or acceptable in a certain situation, but in practice they act differently. Thus, students probably know that they should check what data a given application would have access to, but at the same time, this does not mean that they actually do it in practice. This inconsistency between the knowledge of what should/shouldn't be done (declaratively) and how students behave in reality is also visible in the answers to the block of questions about the use of social media (e.g. Instagram, TikTok, Snapchat, etc.) and their popularity among this age group. Thus, for example, the Instagram application, which in this research is preferred by 93.1% of the students, when registering and accepting the Terms of Use, automatically collects data about the name, surname, email address, facial recognition (if used via a mobile phone), the location, the information about the electronic devices that the individual uses and the links to the addresses that they have, the photos that are uploaded and shared on the profile, the history of searches, the number of likes, etc. At the same time, when asked another set of questions, almost half of the students (47.9%) stated that they read the Terms of Use before registering on social media or applications, about 37.3% of the students do not have time for it, that is, they automatically agree to the terms without reading, and about 14.8% answered that they wouldn't waste time on it, because they can't

change them anyway, which is a total of 52.1% of those who don't read the Terms of Use before registering on a certain social medium or application. Hence, the previously reported high 87.2% should be taken with some reservation, for the reason that it is likely due to a tendency to give socially desirable responding. In fact, it is likely that a higher percentage of those students do not pay much attention to what personal data of theirs the application might have access to, but install it for various reasons (e.g. because it is popular, most of their peers use it, increases their visibility and popularity among peers, etc.).

Hypothetical situation:

Suddenly you notice lot of photos of older people in your social media feeds, and then you realize that your friends have been using applications like FaceApp to make their face look older. These applications require installation, access to the camera or to enter personal data.

Figure 1.
Would you give this applications access to your data, photos and videos?

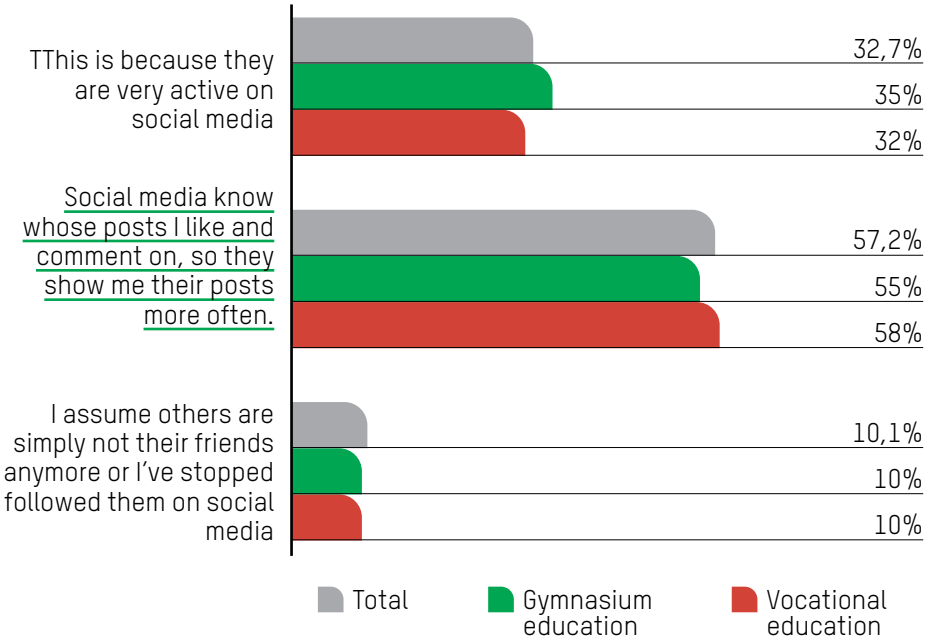


When asked the second question of this set, 57.2% of the students believe that social media shows them posts of people they like and comment on. Three out of ten students (32.7%) are of the opinion that it is because they are very active on social media. One in ten (10.1%) assume that others are simply not their friends anymore or he/she stopped following them on social media.

In regard to this question, no significant statistical differences were observed between gymnasium and vocational education (Figure 2)

Figure 2.

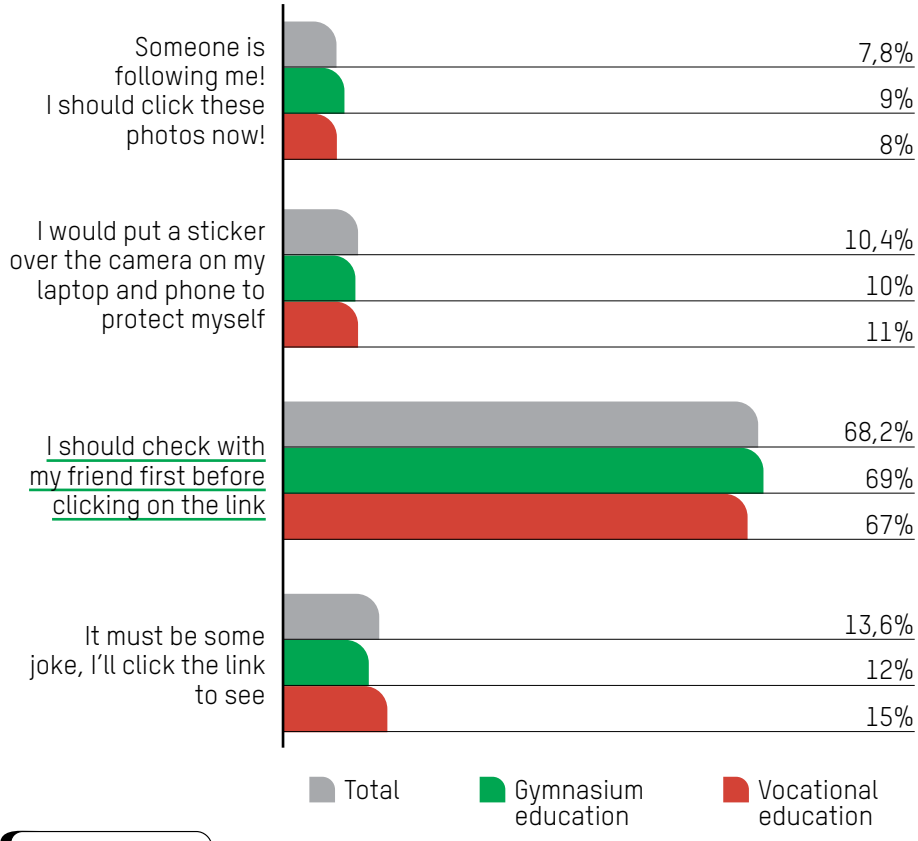
Lately, you have been only looking at news and posts of some of your friends on social media. Why do you think this is the case?

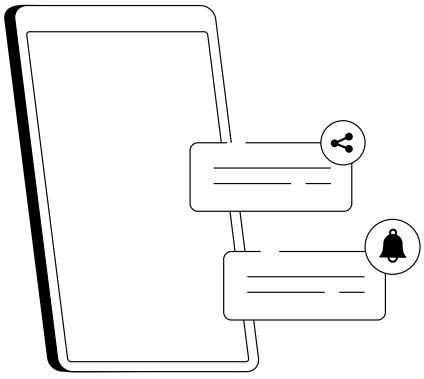


When asked the next question in this set: Your friend sent you a link with the following message, "Wow, I could never imagine you could do this. There are even photos. What is your reaction?", more than two-thirds of the students (68.2%) would check with their friend first before clicking on a suspicious link. 10.4% of the students would put a sticker over the camera on a laptop or phone, and 13.6% think it's a joke and would click on the link out of curiosity. No significant statistical differences were observed between gymnasium and vocational education (Figure 3).

Figure 3.

Your friend has sent you a link with the following message, "Wow, I could never imagine that you could do this. There are even photos". What is your reaction?



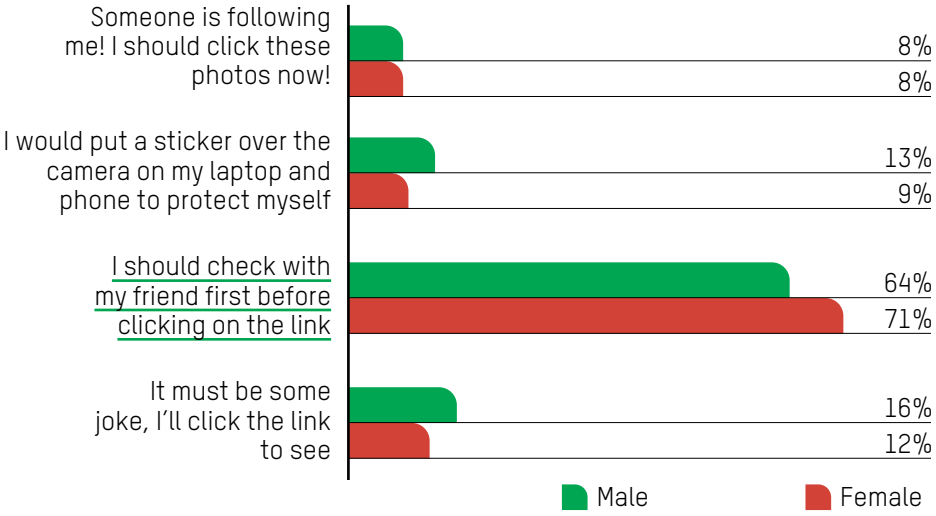


However, in the answers to this question, differences were observed by gender, where female students are more cautious than male students (Figure 3.1).

Figure 3.1

Your friend has sent you a link with the following message, "Wow, I could never imagine that you could do this. There are even photos". What is your reaction?

Cross-sectional results by gender

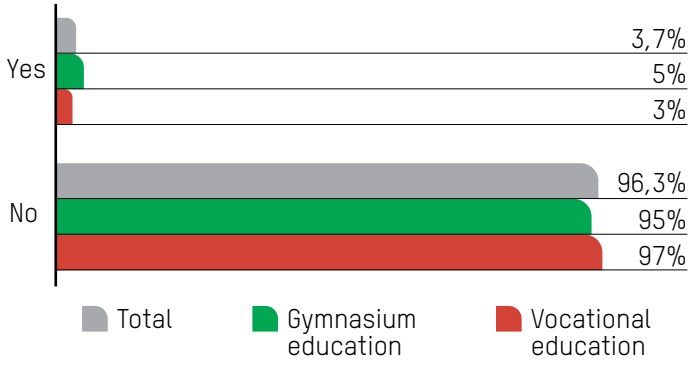


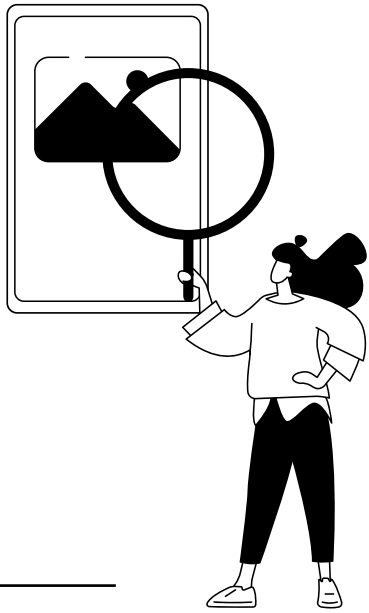
The students were asked if they were familiar with some techniques and tools for verifying the origin of a photo posted on the Internet. Almost all students (96.3%) provided a negative answer, whereas a small percentage of them (3.7%) provided a positive answer. Of the respondents who answered that they are familiar with some techniques and tools (3.7%), **Google Lense** (18.2%), **Google Images** (12.1%) **and Google** (also 12.1%) are the most frequently mentioned ones. Such a finding is particularly indicative and should be seriously taken into account when planning strategies and interventions aimed at strengthening media literacy skills among adolescents. Namely, the data that 96.3% of the students taking part in this research do not know how to verify the origin of a photo posted on the Internet, by itself imposes the need to introduce activities and content within the teaching that will help them acquire knowledge on this topic. One of the ways to do this is to organize a series of lectures within the homeroom periods or informatics lessons by experts (e.g. university

professors from the relevant profile or cyber-security specialists working in MoI departments which are relevant for this issue), where theoretical and empirical knowledge will be presented, supported by practical examples, after which the students will practice under supervision, in order to check the knowledge and learn in the future how to independently use the techniques and tools available to them.

Figure 4.

Are you familiar with some techniques and tools for verifying the origin of a photo posted on the Internet?





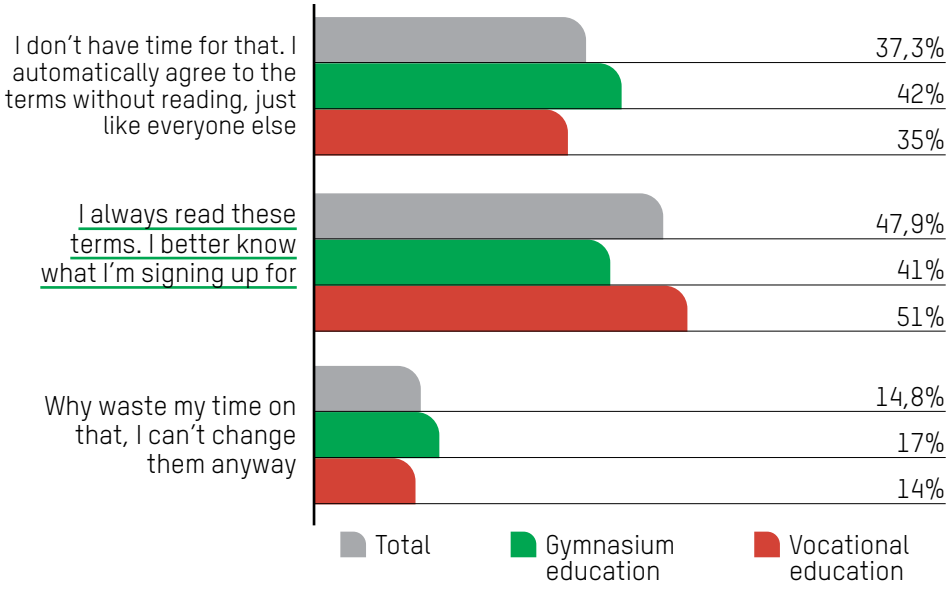
When asked the question: "Do you think it is necessary to read the Terms of Use before registering on a social medium or application", almost half of the students (47.9%) stated that they read the Terms of Use before registering on social networks or applications, whereas about 37.3% of the students do not have time for it, that is, they automatically agree

to the terms without reading. About 14.8% answered that they would not waste time on it, because they cannot change them anyway. That is a total of 52.1% of those who do not read the Terms of Use before registering on a particular social medium or application, which is a higher percentage than those who do so before installing something. Such answers contradict the above-mentioned high percentage (87.2%) of the students who said that they would first check what data the application will have access to before considering whether to install it.

In regard to cross-sectional data on the view "I always read these Terms of Use. It's better to know what I'm registering for", higher is the percentage of vocational school students consider it necessary to read the Terms of Use (Figure 5).

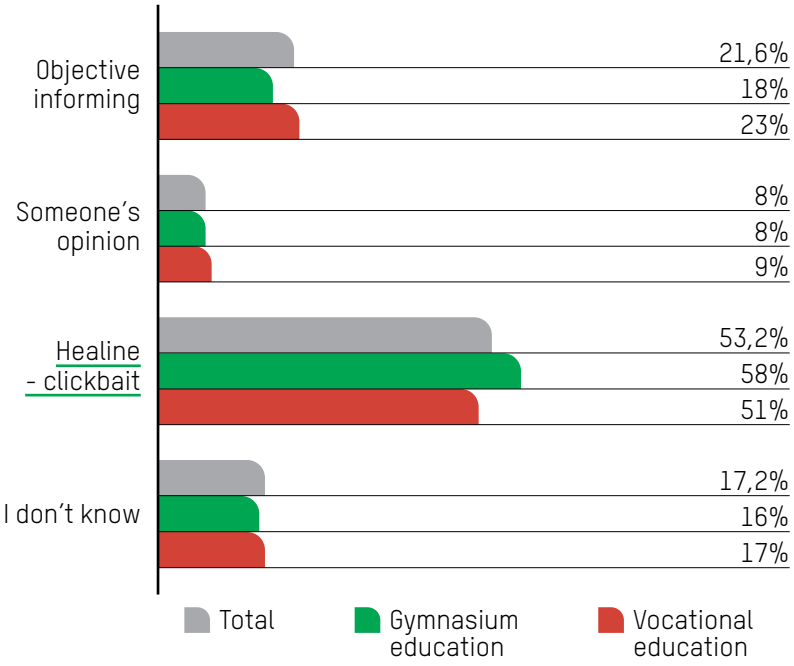
Figure 5.

Do you think that it is necessary to read the Terms of Use before registering on a social medium or application?



When asked what they think the following statement represents: "SHOCKING: Look what was happening yesterday in Skopje... be prepared!" (VIDEO)", **more than half of the students** mainly perceive it as a headline - clickbait (53.2%). Slightly over one-fifth, or 21.6% of the students consider that this is an example of objective informing. The answer that it is a headline - clickbait is 7% more common among gymnasium students compared to the vocational school students (Figure 6).

Figure 6.
Headline: "SHOCKING: Look what was happening yesterday in Skopje... be prepared! (VIDEO)" is an example of:

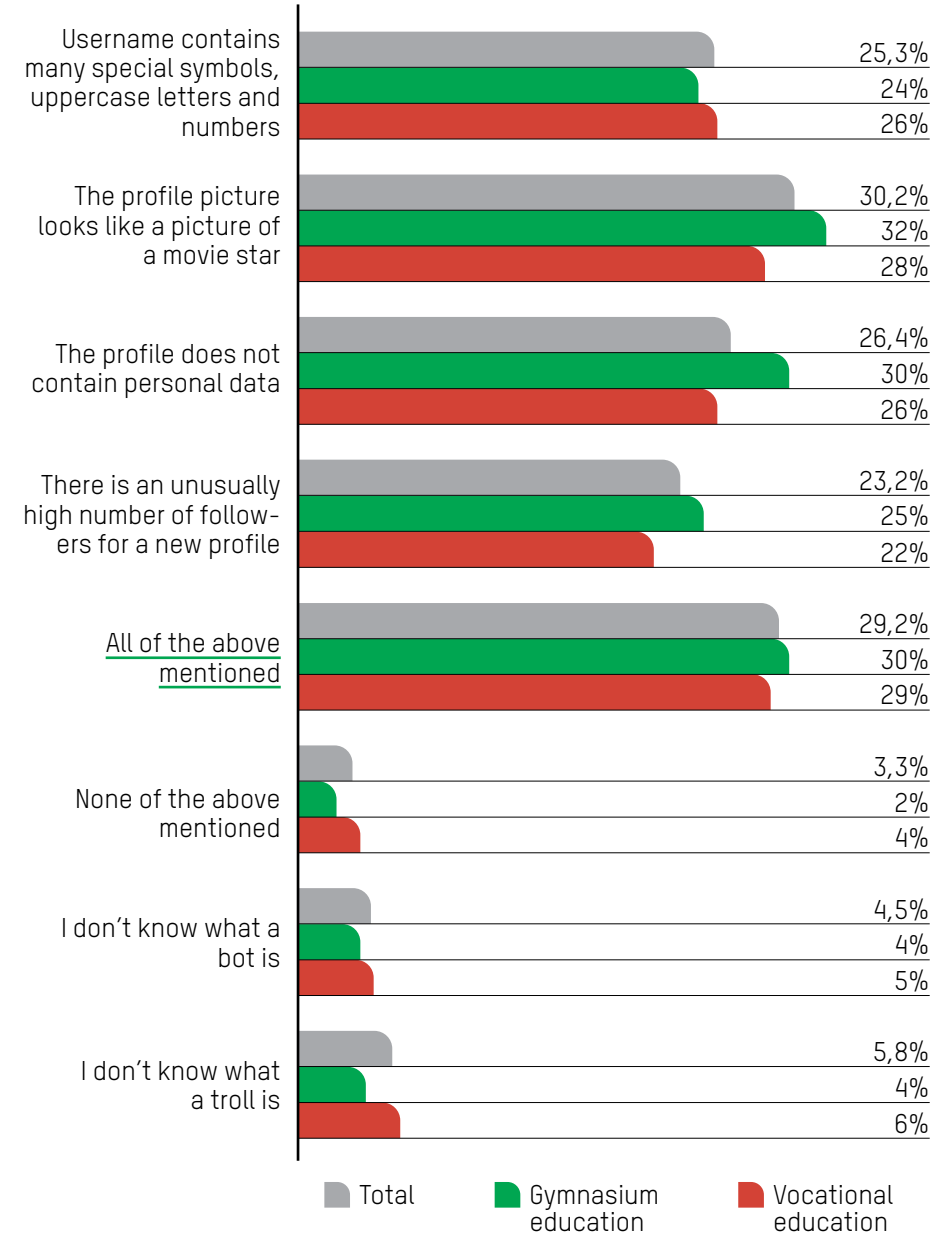


The next question in this set examines the recognition of elements that may indicate a bot or troll[15]. In regard to how to recognize bots and trolls on social media, **three out of ten students (29.2%) consider that the four listed characteristics may indicate a bot or troll, whereas the other answers are somewhat even**, whereby the students most often consider that the profile picture that looks like a picture of a movie star (30.2%) and the fact that the profile does not contain personal data (26.4%) are possible indicators. The percentage of those (13.6% in total) who answered that they do not know what it is, that is, that none of the listed characteristics indicate to them that it is a bot or a troll, is small (Figure 7).

15 According to the definitions of the Media Literacy Dictionary, a bot is a computer program that automatically performs repetitive tasks, in particular a program designed to perform a malicious action; or computer that is under a control of a bot and cam be used for malicious purposes as part of a network of controlled computers or computer program or personality (for example in a game) designed to mimic the the actions of some personality (https://recnik.medium.edu.mk/termin/bot/). In internet communication, a troll is a person who causes quarrels by opening controversial topis or attacks on other participants (https://recnik.medium.edu.mk/termin/trol/

Figure 7.

Which of the following elements may indicate that a social/online media profile is a bot and a troll:

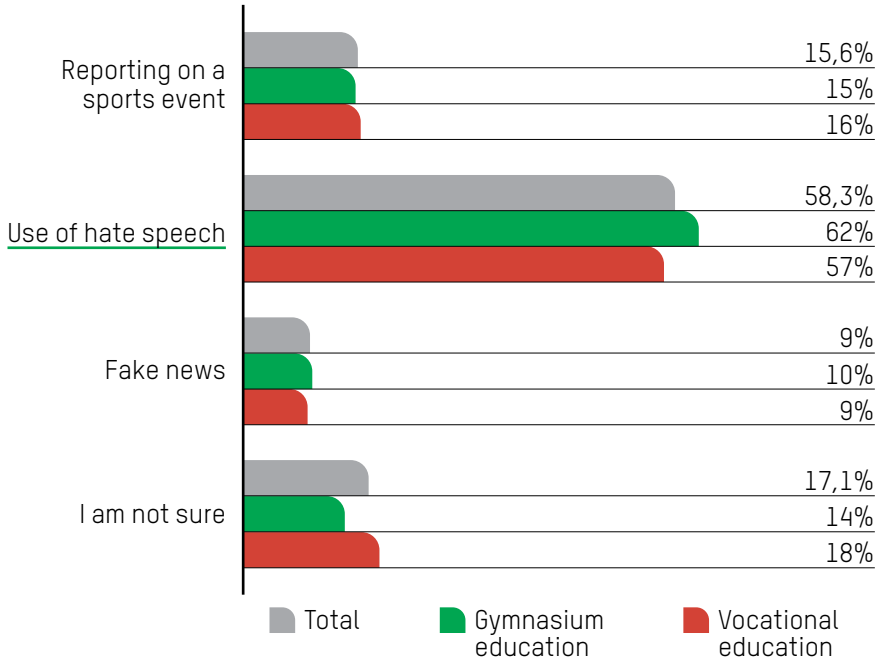


The question that reads: The headline *"Fans protested in Skopje before the football match: Let's kill the "dogs"!"* is mainly recognized by the students as **the use of hate speech** (58.3%), whereas 15.6% of the students consider that this is an example of reporting on a sports event. A small percentage (9%) of the students consider that this is an example of fake news. Thus, 17.1% are not sure what it is about. If we analyze together the percentage of answers of those who consider it a reporting on a sports event and those who are not sure, as well as those who consider it fake news, we obtain a total of 41.7% of those who do not recognize that there is something wrong with such a statement (even if it is fake news), that is, they do not recognize the explicit hate speech contained in the given headline. This is so, because if the aim of the fans was to wish their football team to win, they could have phrased it differently (for example: "*Let's show them how to play football!*").

In regard to the cross-sectional data, 5% more students from gymnasium education believe that this is an example of the use of hate speech, compared to students from vocational education (Figure 8).

Figure 8.

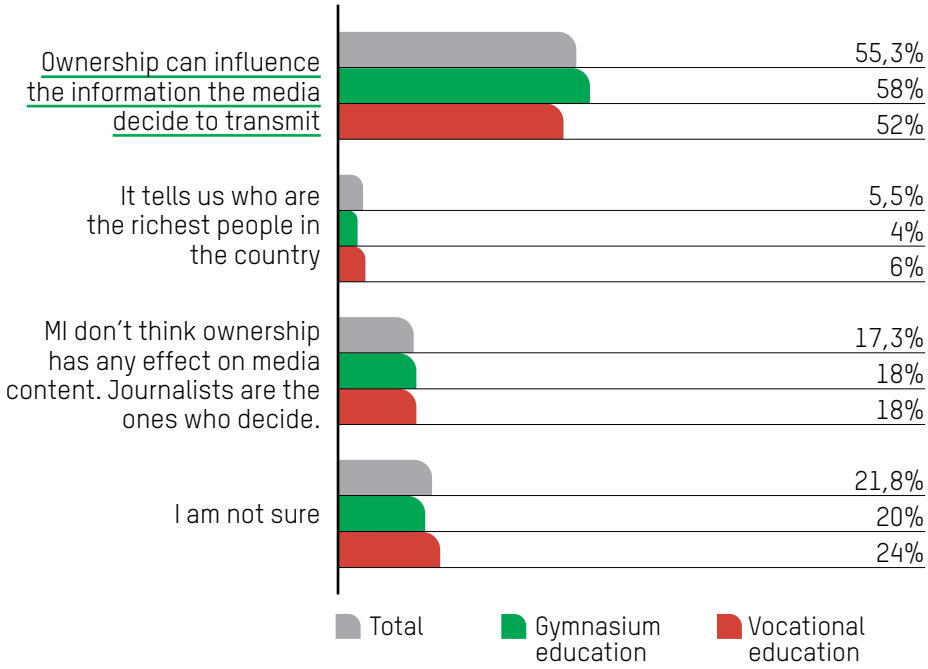
The headline: "Fans protested in Skopje the football match: Let's kill the "dogs"!" is an example of:



When asked the question: "It is important to know who the media owners are, because?", for 55.3% of the surveyed students, knowledge about the media ownership is important because it can influence the information that the media decide to transmit. About 17.3% consider that ownership has no influence on media content and that journalists are the ones who decide, whereas 21.8% are not sure. Hence, a total of 39.1% do not have a real picture of editorial policies in the media and the way in which decisions are made about which, how and how much of the media content will be aired and thus reach the public. This points to the need to deepen awareness of media regulation among this group of the students.

The number of gymnasium students who agree with the statement "Ownership can influence the information that the media decide to transmit" is somewhat higher, compared to vocational education students (Figure 9).

Figure 9.
It is important to know the media owners, because?

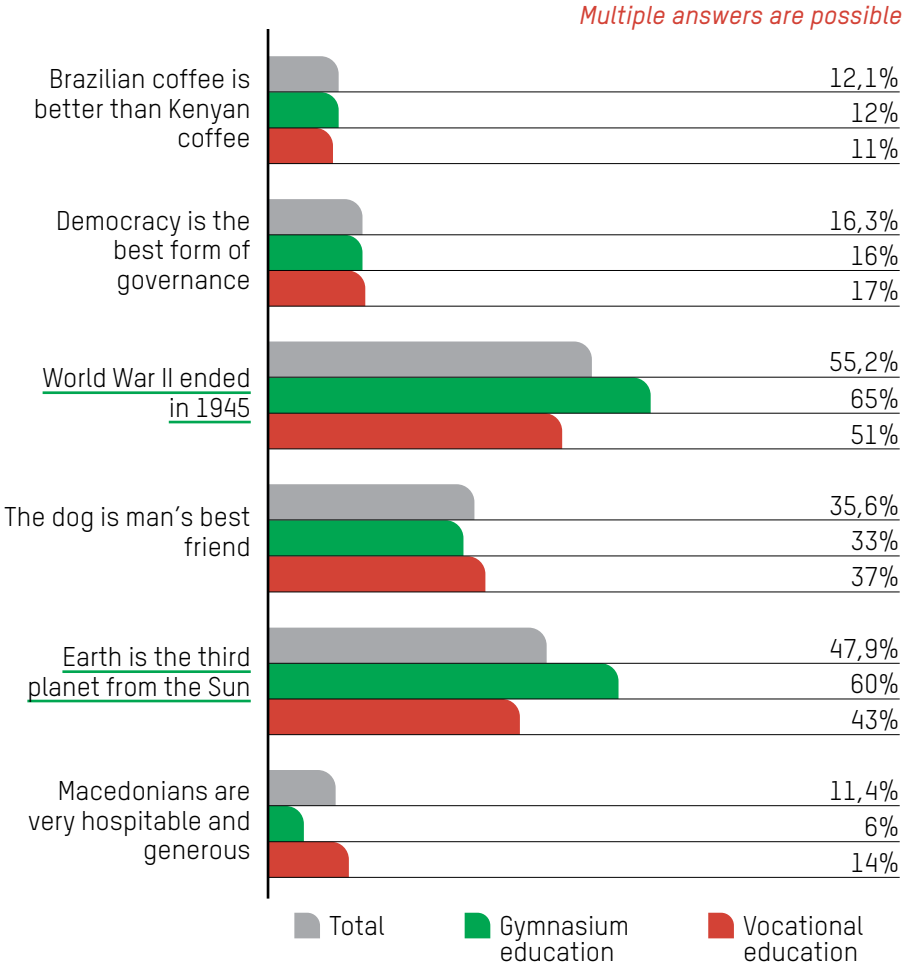


The surveyed students were then asked to decide whether several examples were facts or not. Students most often recognize historical and scientific facts such as the end of World War II in 1945 (55.2%) and that the Earth is the third planet from the Sun (47.9%). About 35.6% of the students singled out the opinion that a dog is man's best friend as a fact.

A higher percentage of gymnasium students than vocational education students (Figure 10) recognized the statements "Earth is the third planet from the Sun" (60% vs. 43%) and "World War II ended in 1945" (65% vs. 51%) as facts.

Figure 10.

In the media, we can come across many facts, but also someone's opinions. In your opinion, which of the examples below are facts?



In conclusion to this first segment, it can be stated that students generally know that social media and applications can violate their privacy and that they should take precautions to prevent this from happening. Most of them would do preliminary verifications before clicking on a suspicious link, but at the same time, the largest percentage of the

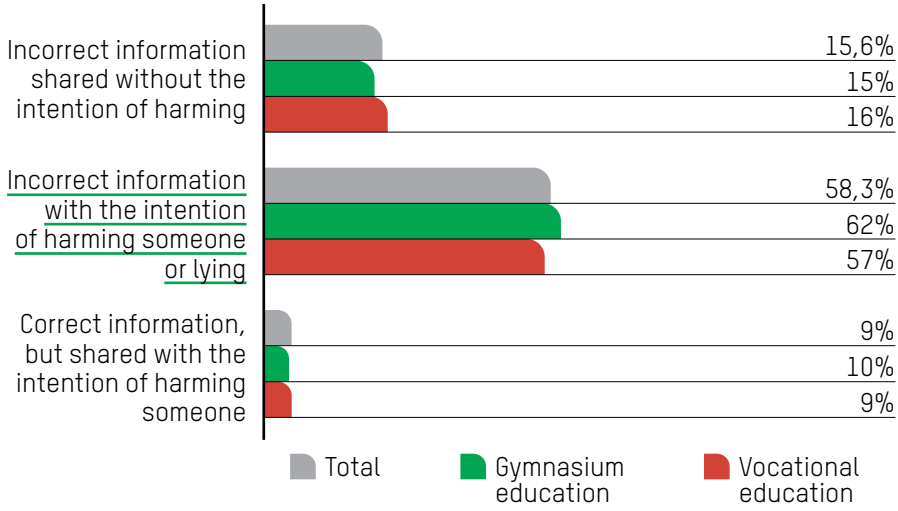
students do not know how to use techniques and tools to verify the reliability of the photos they see online. Also, more than half do not read the Terms of Use before signing up for a particular social medium or application. Furthermore, more than half of the students mainly know how to recognize clickbait, as well as to recognize that there are cases of bots and trolls on social media (although the percentage of those who are familiar with all four indicators is only 29.2%). The recognition of hate speech in this research is not at a satisfactorily high level and more work on that topic needs to be done. There is a need for them to be more informed of how the media operate in regard to editorial policies is also needed, in order for the students to acquire a greater understanding of the way in which media content that reaches the public is selected. Lastly, even though a higher percentage of the students successfully distinguish between facts and opinions measured in this research, this percentage, yet should be much higher. Taken as a whole, being informed about and having knowledge of certain rules of conduct in the Internet space does not imply by default that they will be put into practice in the daily conduct of the students. Additionally, it does not imply either that a deeper understanding of the essence and reasons why certain terms should be complied with for the purpose of safe use of social media has been developed. Hence, it is necessary to continue developing the critical thinking, which is a complex and long-term process that implies a certain level of cognitive development and emotional maturity, and not just the possession of a certain quantum of information that is not fully applied in reality. This situation is also due to the development period of the students in question. Namely, the age of 15-16 years belongs to the middle adolescence period, when numerous and dynamic changes occur in all developmental domains; when the brain is still intensively developing and adolescents do not always manifest rational behavior, because the zones responsible for making rational decisions and thinking about the long-term consequences of one's actions before acting are the last to develop. It is a period in which peers are the dominant agent of socialization, so it is not atypical for adolescents to fall under peer pressure and show inconsistent behavior, to want to be seen and popular, to experiment and

take risks, to be unsure of what to choose and what decision to make being awareness that there are many possibilities. It is also a period when it is very important for them to be part of the peer group, sometimes even at the expense of behaving in a way that would not meet with the approval of the authorities, just so that they are not excluded from the group. Hence, during adolescence, the brain development is more attuned to social support than to long-term behavioral consequences. At the same time, formal operations with their more complex forms of opinion, such as hypothetical-deductive, at the age of 15-16 are still intensively developing. The development of critical thinking is closely linked to the development of formal operations which begin after the age of 12. In order to develop critical thinking, it is necessary to decenter and reduce egocentrism, which is still present in the period of adolescence and occurs in three forms: the inability to distinguish the universal from the particular, the inability to distinguish the subjective from the objective, and inability to distinguish temporary from deeper developments. Egocentrism, on the other hand, is closely related to rumination, that is, obsessive thinking about self-centered concerns, which is why some adolescents can solve their own problems with friends over the phone, through text messages, on social media, etc. Taking into account all this, **the period of middle adolescence has a great potential for the development of critical thinking through appropriately chosen activities, which will simultaneously improve the students' media literacy**.

1.2. Content and information recognition

In regard to what the term disinformation represents, two-thirds of the students (66.7%) define disinformation as incorrect information shared with the intention of harming someone or lying. A quarter of the surveyed students (26.9%) consider that it is incorrect information that was shared without the intention of harming. The perception that disinformation is incorrect information with the intention of harming someone or lying is consistent between gymnasium and vocational students (Figure 11).

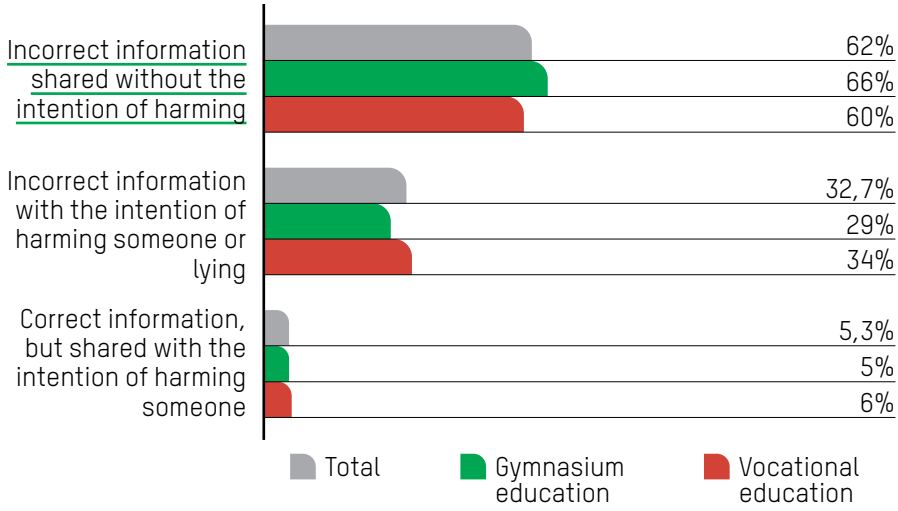
Figure 11.
Which answer best explains what disinformation is:



When asked "Which answer best explains what misinformation is?", 62% of the students agree that it represents incorrect information shared without the intention of harming. For three out of ten respondents (32.7%), it is incorrect information with the intention of harming someone or lying.

In regard to the cross-sectional results, gymnasium students to a somewhat greater extent believe that it is incorrect information shared without the intention of harming (Figure 12).

Figure 12.
Which answer best explains what misinformation is:

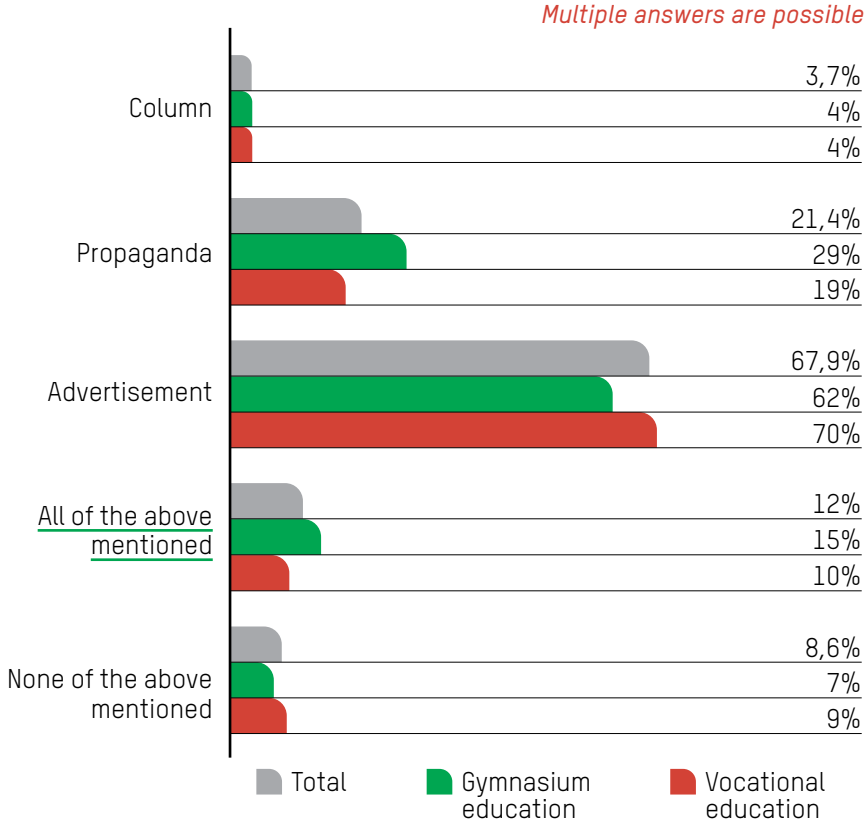


When asked the next, which reads: "Which of the following media content has the purpose of convincing us of something", the majority of the students (67.9%) believe that **advertisements** have such a purpose. For two out of ten respondents (21.4%), **propaganda** also has the purpose of convincing us of something.

In regard to the cross-sectional data, vocational education students are 8% more inclined to recognize advertisements as a means of persuasion than gymnasium students and 10% less inclined to identify propaganda as a means of persuasion (Figure 13).

Figure 13.

Which of the following media content has the purpose of convincing us of something:

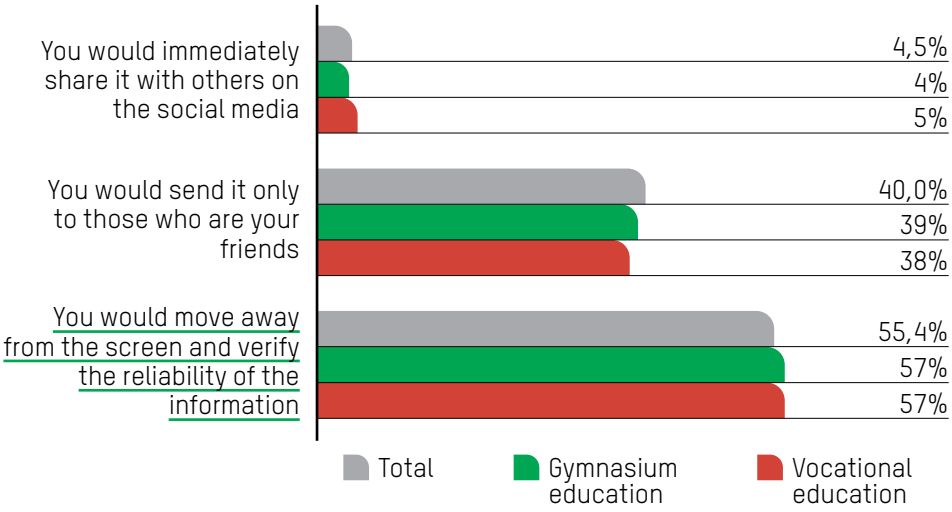


Furthermore, the students were asked how they would react if they came across a post that was shocking. Thus, slightly over half of the students (55.4%) would move away from the screen and verify the reliability of the information before reacting. Four out of ten students (40%) would send the post to their friends, and only 4.5% would immediately share it with others on social media.

In regard to this question, no significant statistical differences were observed between gymnasium and vocational education (Figure 14).

Figure 14.

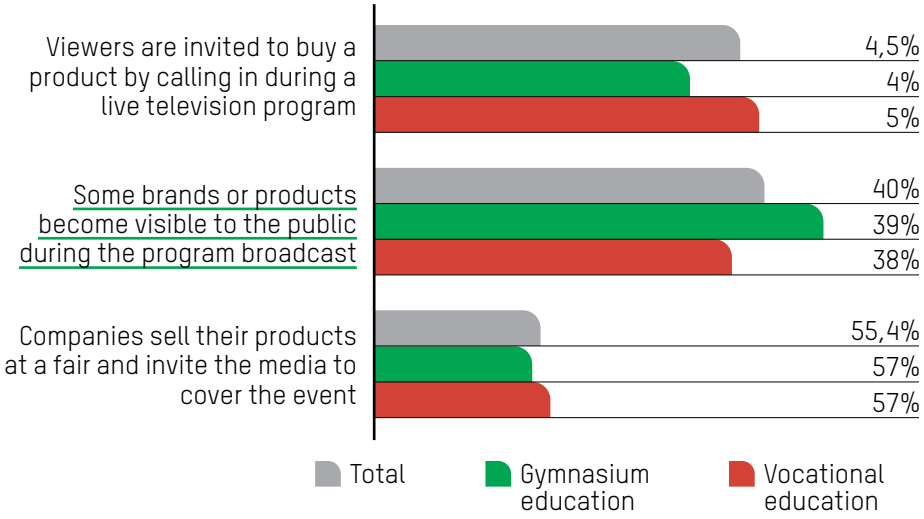
If you come across a post on social media that is shocking and makes you angry, upset or furious, you:



Within the context of the question of product placement, as a form of media advertising, 42.3% of the students consider that product placement occurs when brands become visible during the program broadcast, whereas for 39.7% of them product placement occurs when viewers are invited to buy a product by calling in during a live television program. A smaller percentage (18%) of the surveyed students consider that this term refers to the process when companies sell their products at a fair and invite the media to cover the event.

Cross-sectional data by type of school shows that higher percentage of gymnasium education students consider that the answer is correct because certain brands/products become visible when broadcast in a program, compared to vocational education students (Figure 15).

Figure 15.
Product placement, as a form of media advertising, occurs when:

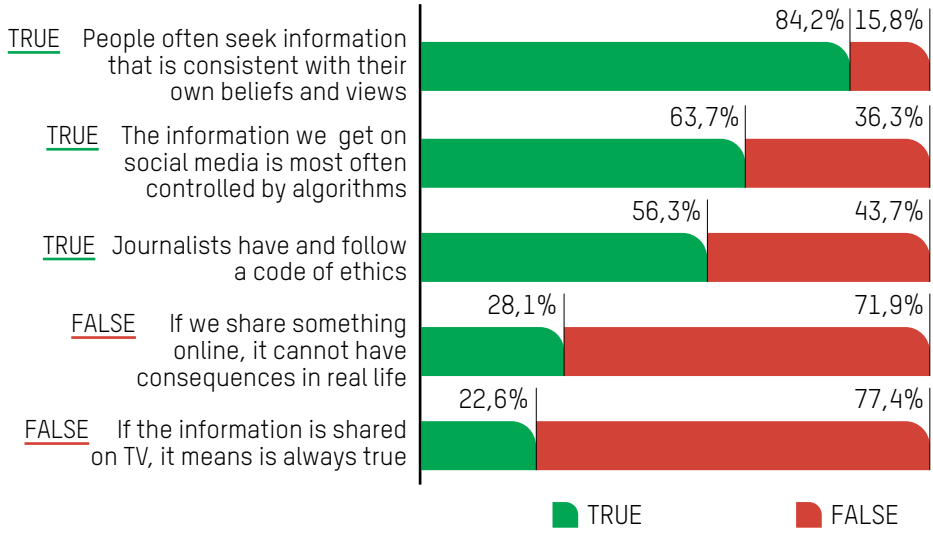


When asked the next question, the students were surveyed about whether they think certain views about social media are true or false. Thus, the largest majority of the students (84.2%) believe that people often seek information that is consistent with their own beliefs and views. A significant number of the students (63.7%) agree that the information they get on social media is mainly controlled by algorithms. More than half of the students (56.3%) believe that journalists have and follow a code of ethics, whereas 43.7% of them believe that this is false. Slightly more than a quarter (28.1%) of the students consider that if they share something online, it cannot have consequences in real life, compared to 71.9% of them who have the opposite opinion. A smaller percentage of the respondents (22.6%) believe that the information shared on TV is always true, whereas the majority of them (77.4%) consider that this is false (Figure 16).

In regard to this question, no significant statistical differences were observed between gymnasium and vocational education.

Figure 16.

In your opinion, which of the following is true or false about social media?



In a conclusion to the findings of the second segment, it can be stated that the majority of the students recognize what disinformation is and what misinformation is, even though this percentage should be much higher if we want to achieve real media literacy among first- and second-year students in secondary education. Additionally, it should be checked how much they do really understand the difference (and not just how well they recognize it) and how successfully they can identify disinformation or misinformation in real examples and not just distinguish them as definitions (as measured in this research). Furthermore, most of the students believe that advertisements and propaganda have the purpose of convincing us of something. At the same time, the answers to the questions about reacting to shocking information refer to the fact that the majority of the students use ways of reacting such as verifying the reliability of the information before reacting or moving away from the screen. Relatively high are the percentages of detecting true and false answers to the offered statements in regard to social media measured in

this research. However, an account should be taken of not so negligible percentage of answers that refer to ignorance or misrecognition of the truthfulness of certain statements, in particular 28.1% who consider that if we share something online it cannot have consequences in real life, as well as that if the information is shared on TV, then it is surely true (22.6%). This shows that not such a small number of students do access social networks and media naively (or disinterestedly) which is alarming, and which again points to the need for acquiring additional knowledge and further building of their critical view and media literacy.

2. Television

The second part of the research, puts the focus is on the students' perception of television as a medium and its influence. It is essential for students to think critically, to recognize quality content and to see the potential impact of the media on the shaping of social norms and values in general.

When asked the first question of this set, which reads "What does "watching TV" mean to you?", half of the surveyed students (51.7%) answered that it means watching TV channels on TV during the time the programs are broadcast. But already for a significant number of the students (23.1%) this term has a changed meaning, that is, it means watching on-demand programs like Netflix and HBO on TV. Cross-sectional data shows that 9% more of gymnasium students than vocational school students have this view (Figure 17).

No significant statistical differences were observed in regard to the gender of the respondents.

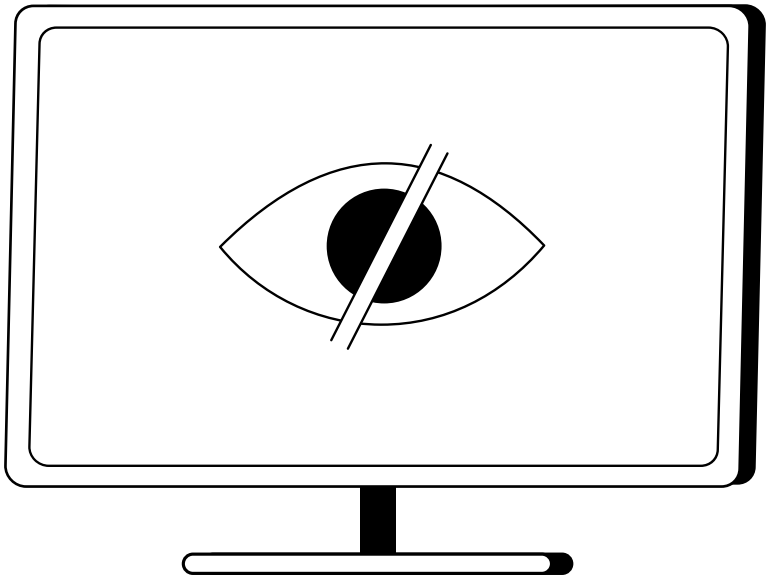
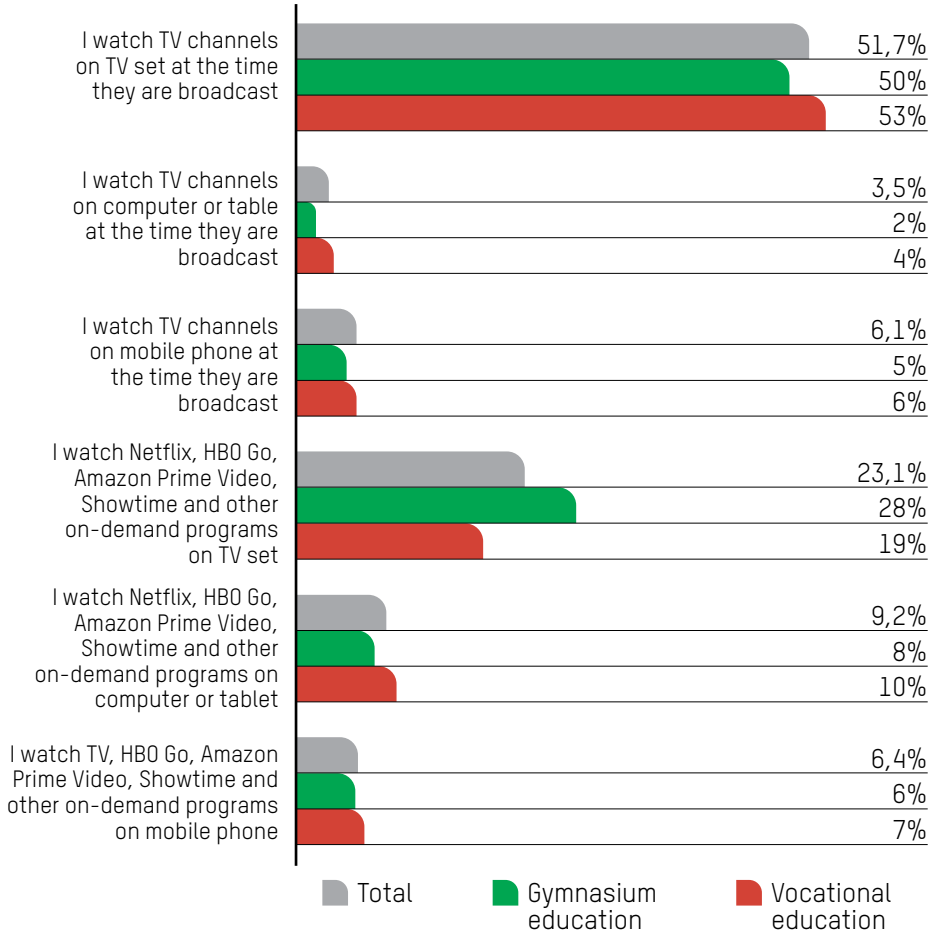


Figure 17.
What does "watching TV" mean to you?

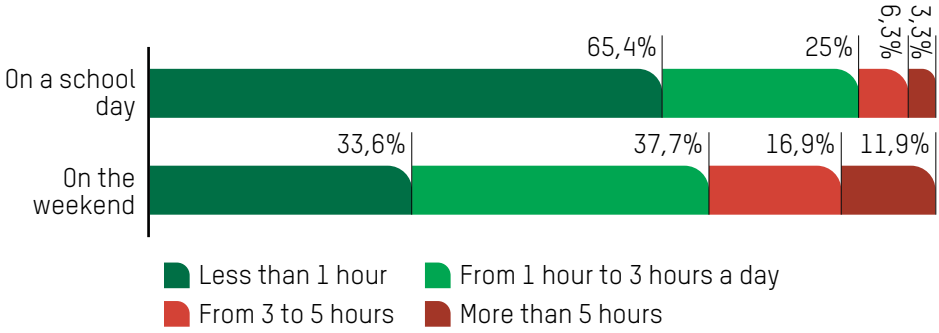
Multiple answers possible



When asked the next question that reads: "On average, how many hours a day do you watch television programs?", the largest number of the students (65.4%) answered that they watch less than one hour of television on a school day. On the weekend, watching TV increases, that is, about 37.7% of the students do watch television from 1 to 3 hours a day, which is more prevailing among female students. One in ten students (11.9%) watch television for more than 5 hours on average on the weekend.

In regard to this question, no significant statistical differences were observed between gymnasium and vocational education (Figure 18).

Figure 18.
On average, how many hours a day do you watch TV programs?

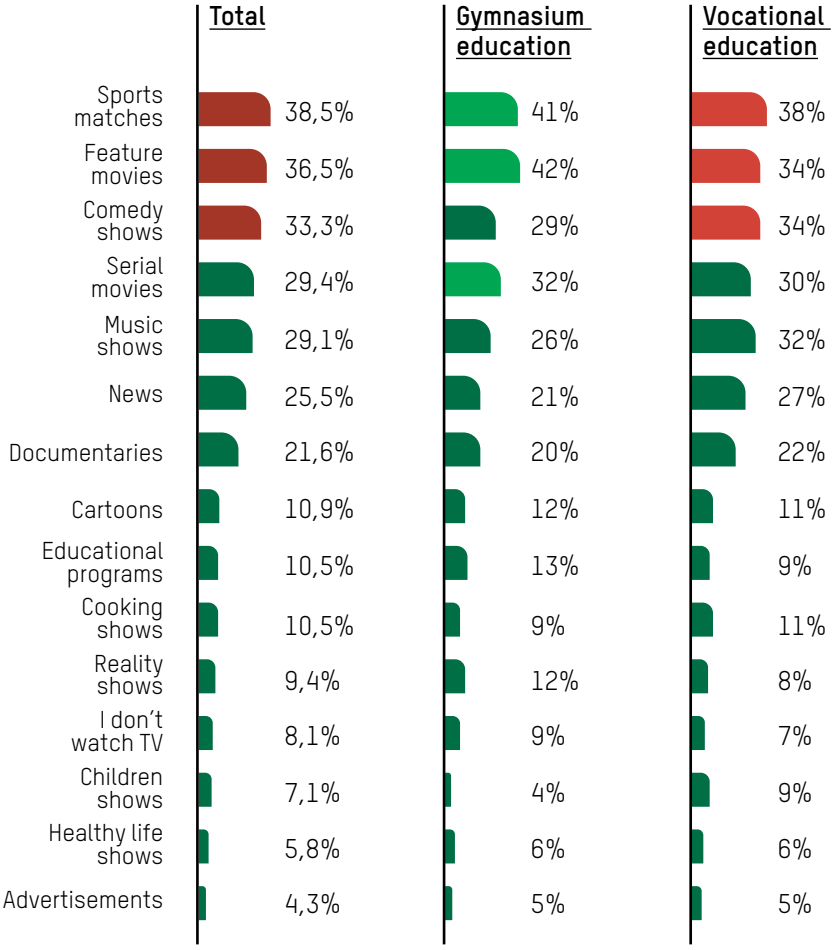


Furthermore, the students were surveyed about what they watch most on TV. Most of them watch sports matches (38.5%), followed by feature movies (36.5%). Comedy shows take the third place by 33.3%.

According to the cross-sectional results, feature movies are the most viewed by gymnasium education students, compared to vocational school students who single out sports matches in first place (Figure 19).

Figure 19.
What do you watch most on television?

Up to three answers are possible

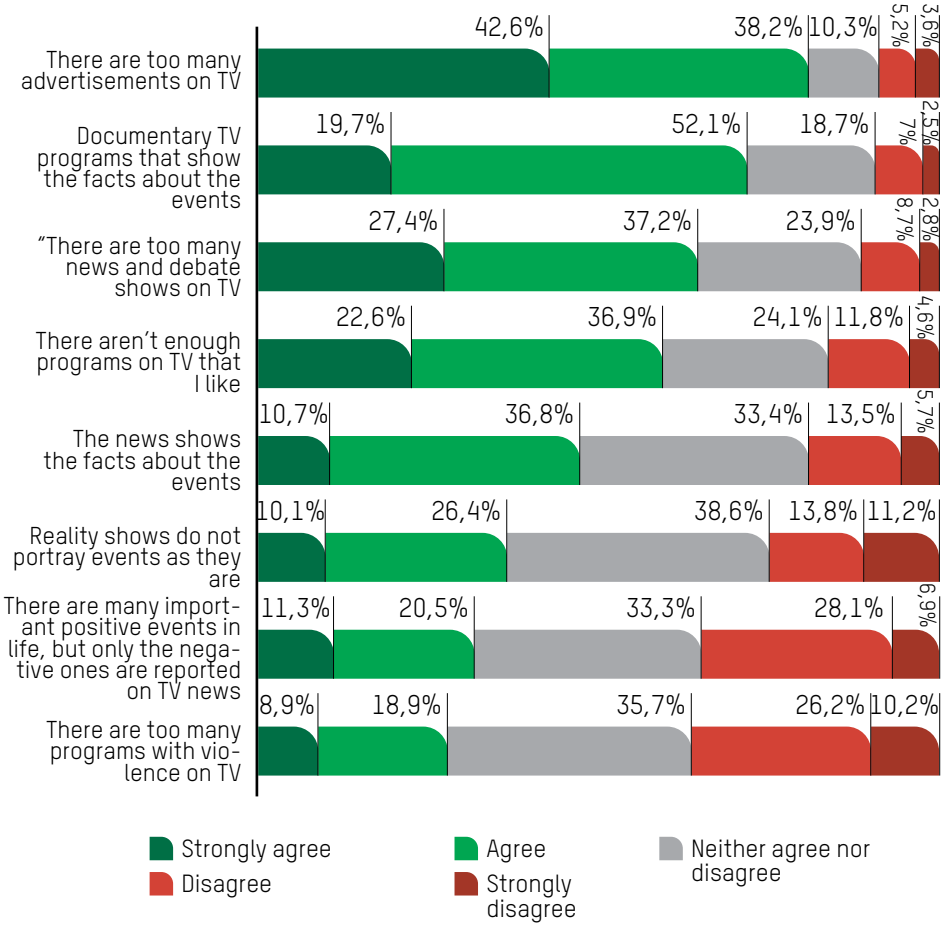


The students who were surveyed responded to several views in regard to TV programs. Thus, eight out of ten students consider that there are too many advertisements on TV (42.6% - strongly agree, 38.2% - agree). For seven out of ten students, the documentary TV programs show true facts about the events (19.7% - strongly agree, 52.1% - agree). Six out of ten students agree that there are too many news and debate shows on

TV (27.4% - strongly agree, 37.2% - agree) and that there are not enough programs they like (22.6% - strongly agree, 36.9% - agree).

Figure 20.

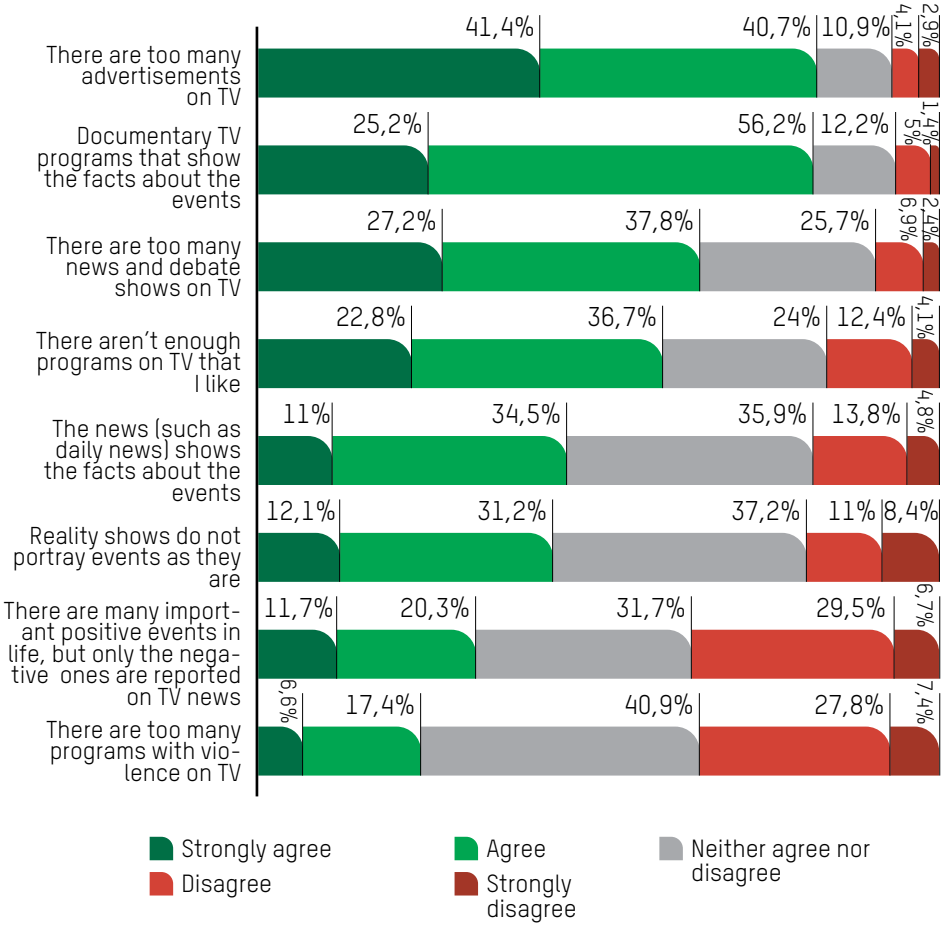
On a scale from 1 to 5, to what extent do you agree or disagree with the following views?



About 36% of them disagree that there are too many programs with violence on TV and the same number are neutral in regard to this view, whereas 28% of them agree. The views are almost evenly distributed in regard to the view "There are many important positive events in life, but only the negative ones are reported on TV news" - 35% - disagree, 33.3% - neutral, and 32% - agree (Figure 20).

Figure 20.1.

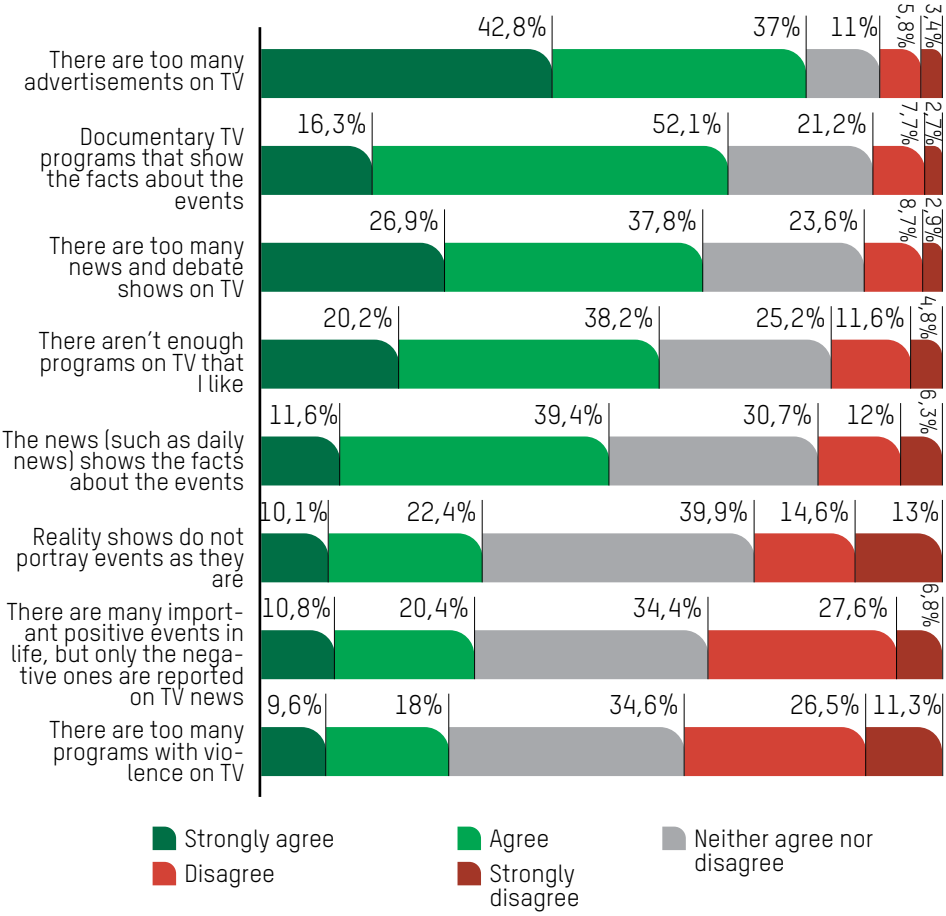
On a scale from 1 to 5, to what extent do you agree or disagree with the following views? Cross-sectional results – Gymnasium education



In regard to this question, no significant statistical differences were observed between gymnasium and vocational education, with the exception of documentary TV programs, which are perceived to a greater extent (25.2% - strongly agree) by gymnasium students as programs that present facts, compared to vocational school students (16.3% - strongly agree). (Figures 20.1 and 20.2)

Figure 20.2.

On a scale from 1 to 5, to what extent do you agree or disagree with the following views? Cross-sectional results – Vocational education



A short summary conclusion for this segment would be that students watch television daily (even though shorter during the work week), and the duration of viewing increases on the weekend, when 28.8% watch television for more than 3 hours a day. In the first place, students watch sports matches (38.5%), then feature movies (36.5%), then comedy shows (33.3%). According to most of them, there are too many advertisements, news and debate shows on television and not enough programs that they like. When it comes to documentary TV programs, students generally feel that they present true facts about events. They have a similar view towards TV news, such as the daily news program. The evaluations are divided about the excessive presence of programs with violence, thus there are approximately the same number of those who disagree with this statement and those who have a neutral view. A slightly smaller number of the students agree that there are too many such programs on TV. The views are almost evenly distributed in regard to the view that there are many important positive events in life, but only the negative ones are reported in the TV news. In regard to the reality shows that are broadcast on television, a not so small percentage (27.6%) of them consider that they show the events as they are, whereas 36.5% of them think that this is not the case. 39.9% of the students have a neutral view on this issue. These findings become indicative when analyzed together with the use of the Internet and social media.

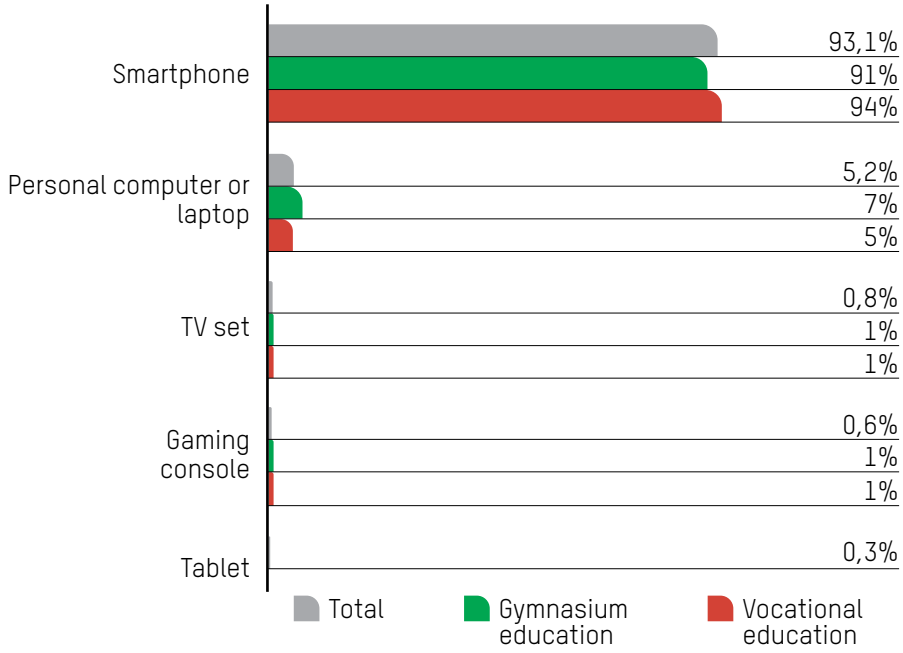
3.1. Internet

In the era of digital transformation, the Internet is an inevitable element of everyday life, in particular, for secondary education students. Access to the Internet opens doors to new opportunities, but also challenges, which affects their communication, knowledge and, in general, their understanding of the world around them. However, it is important to note that access to the Internet is not only a technical action, but also an experience that affects the development of the students. Thus, the Internet plays a significant role in the lives of secondary school students, providing them with access to entertainment, information, and educational resources. However, there is a need to upgrade their critical thinking and Internet safety skills, so they can better utilize the potential benefits of these resources on the one hand and minimize the risks on the other.

When asked how students most often access the Internet, the vast majority (93.1%) answered that they access it via a smartphone. A very small percentage (5.2%) answered that they access via personal computer/ laptop.

In regard to this question, no significant statistical differences were observed between gymnasium and vocational education (Figure 21)

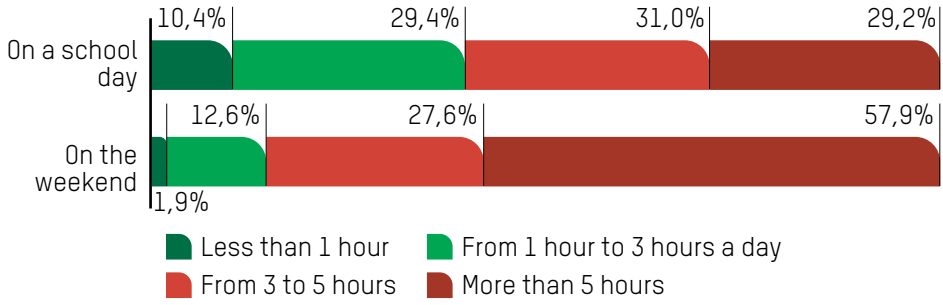
Figure 21.
By what means do you usually go/access the Internet?



In regard to the question: "On average, how many hours a day do you actively use the Internet?", on a school day, about 40% of the students use the Internet up to 3 hours a day (10% of them spend less than 1 hour on the Internet), 31% of them spend from 3 to 5 hours on the Internet and 29.2% of them spend more than 5 hours. On the weekend, the situation is significantly different in that the majority of the students (57.9%) actively use the Internet for more than 5 hours a day, 27.6% of them use it for 3 to 5 hours and about 15% of them use the Internet for up to 3 hours daily (Figure 22).

Figure 22.

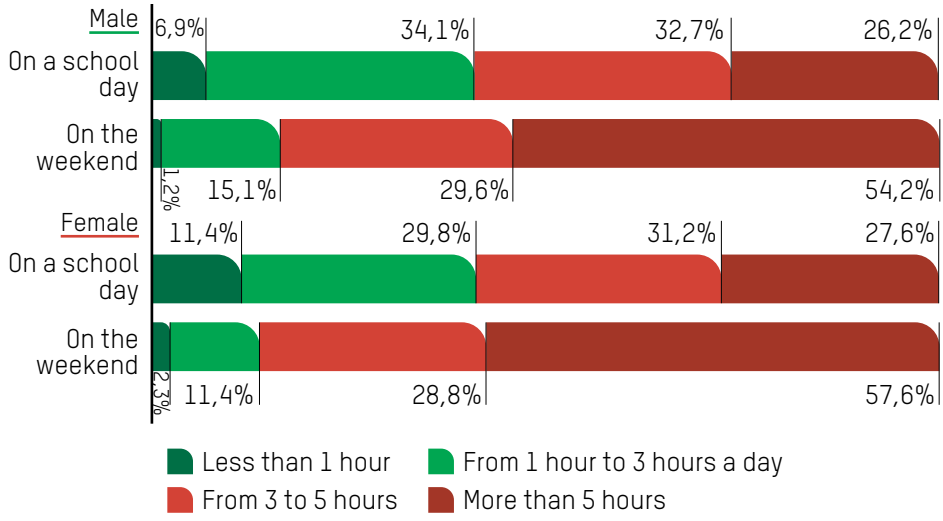
On average, how many hours a day do you actively use the Internet?



No significant statistical differences were observed in regard to the gender of the respondents (Figure 22.1).

Figure 22.1.

On average, how many hours a day do you actively use the Internet?
Cross-sectional results by gender



In regard to the intensity of doing different activities on the Internet, the students declared that they mostly use social media (89% every day) and listen to music online (72.6% of them every day). Activities such as using Skype, WhatsApp, Messenger, Telegram (41.1% of them daily and an additional 35.3% of them several times a week) and searching for information for learning at school (29.8% of them every day and 45.1% of them several times a week) also take a significant part of the students' Internet activities.

Another activity that is often done (59.3% of which 25.6% of them daily and 33.7% of them several times a week) is watching TV programs, videos and movies online. It is interesting to note that despite this, students do not download TV programs, videos and movies from the Internet - 35.9% of them never did it, and 19.5% of them did it once a month. The majority of the students (62.8%) never listen to radio on the Internet (Figure 23).

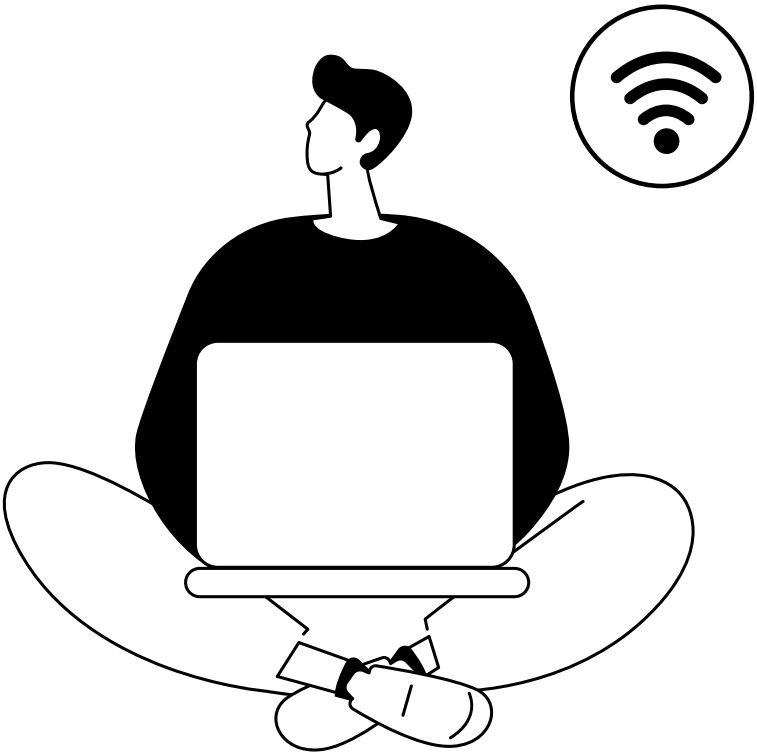


Figure 23.

How often do you do each of the following activities?

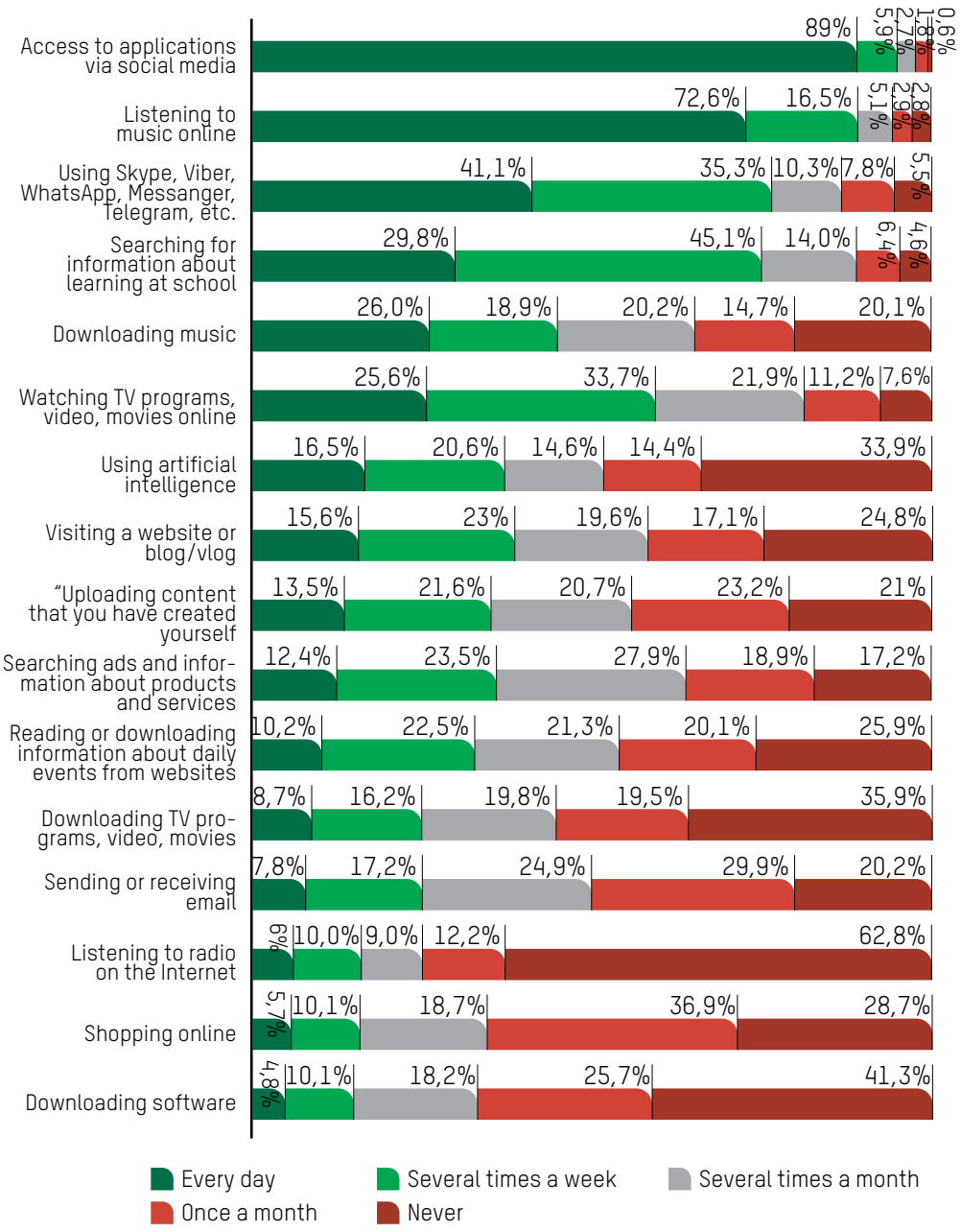
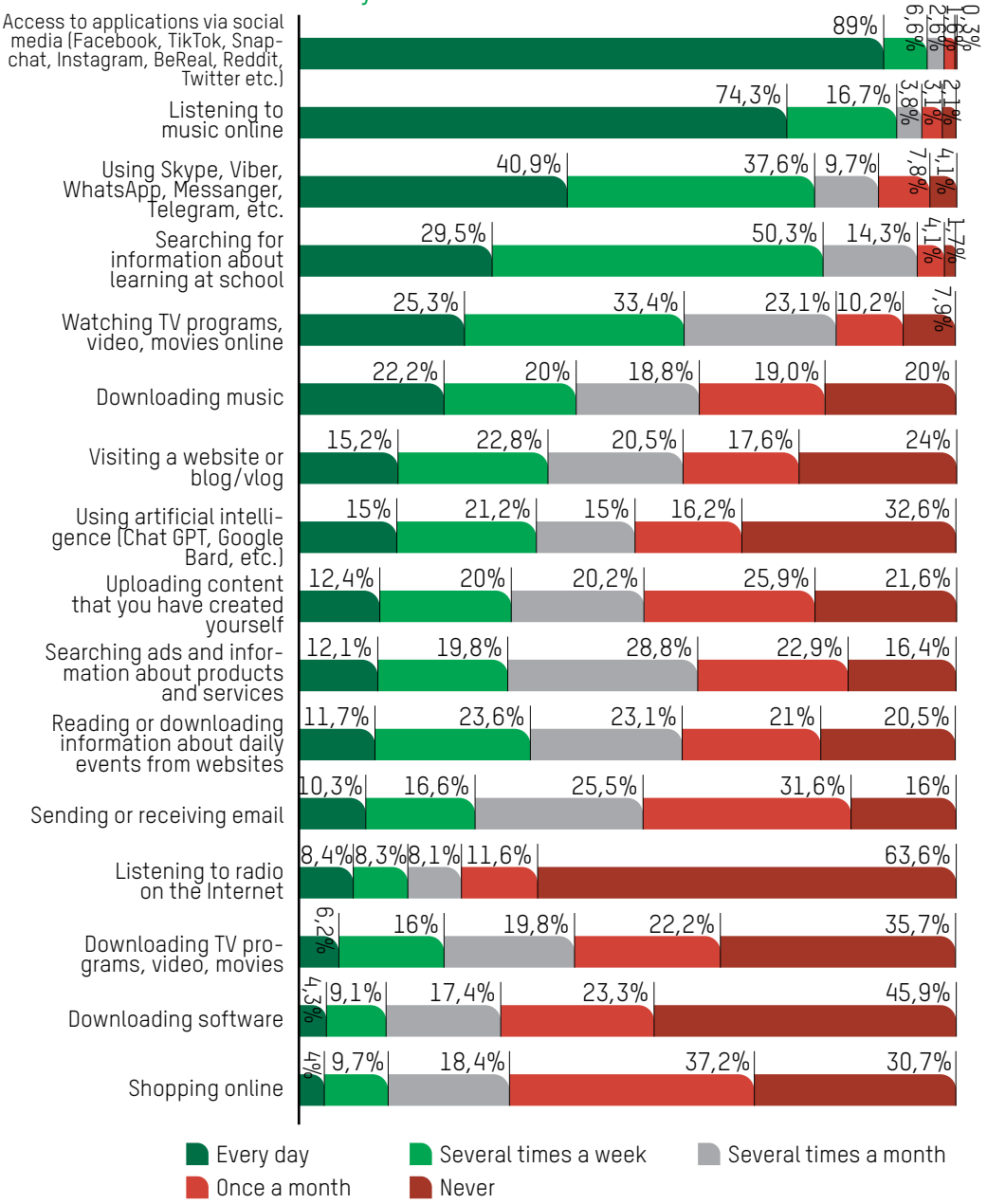


Figure 23.1.

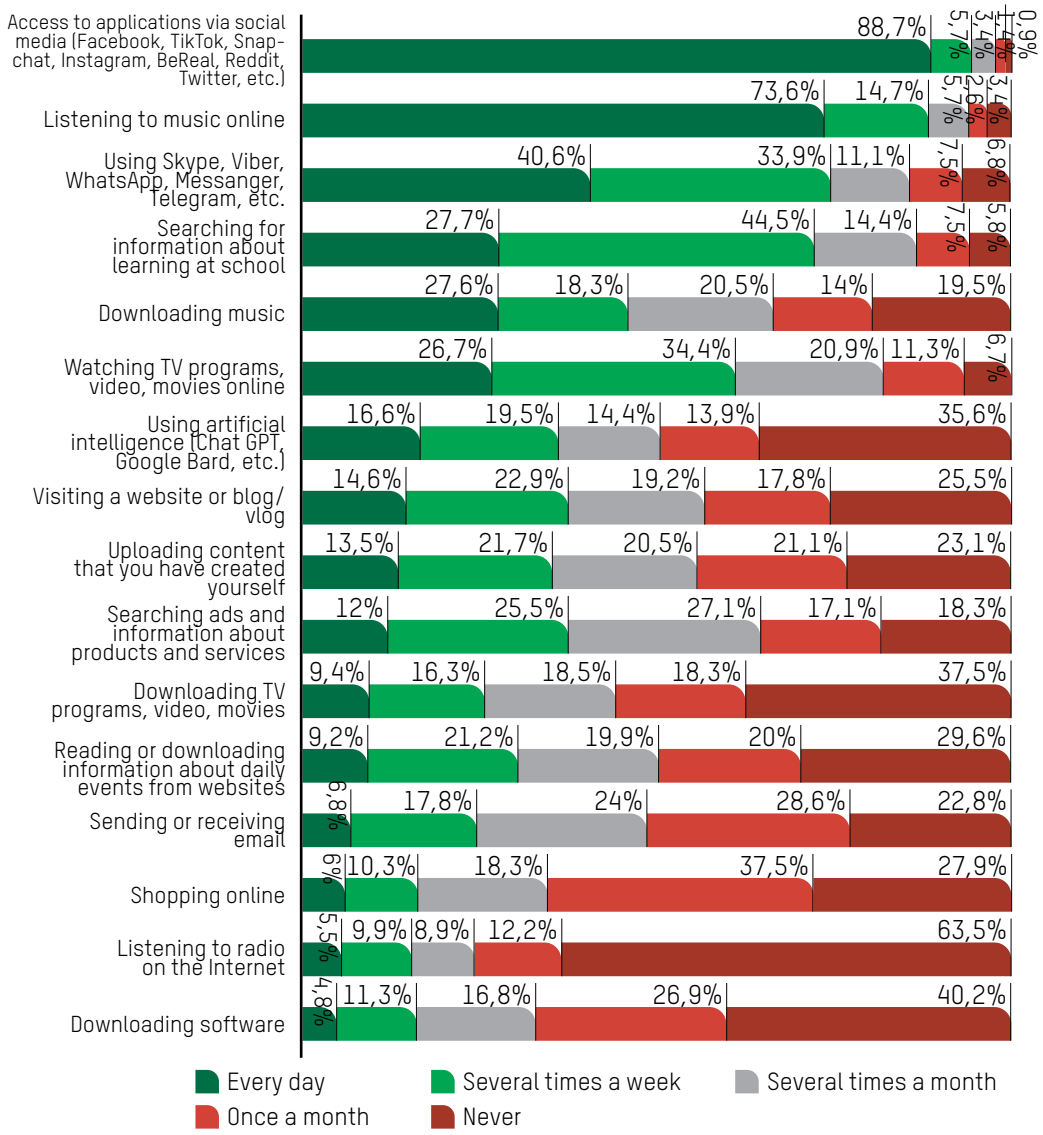
How often do you do each of the following activities?
Cross-sectional results – Gymnasium education



In regard to this question, no significant statistical differences were observed between gymnasium and vocational education students. (Figures 23.1 and 23.2).

Figure 23.2.

How often do you do each of the following activities?
Cross-sectional results – Vocational education



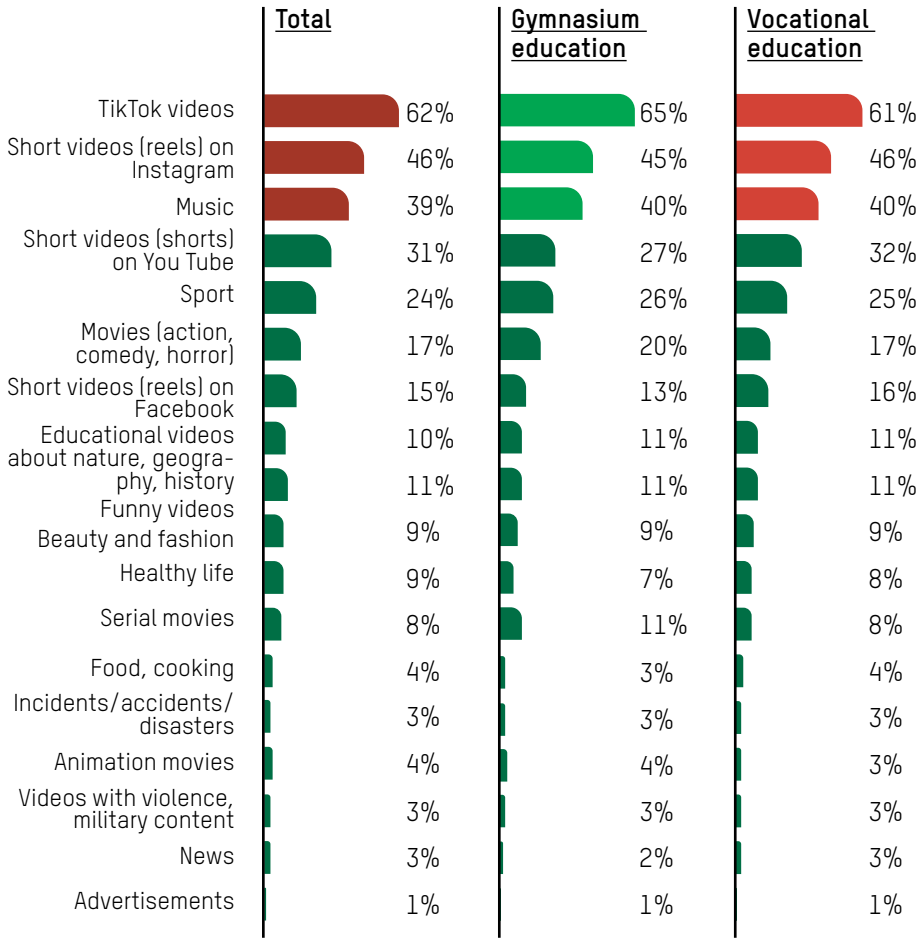
When asked which content students watch the most on the Internet, for more than half of them (62%) it is TikTok videos. The second place is taken by 46%, short videos (reels) on Instagram, and in the third place, students single out music as the most frequently listened content on the Internet (39%). The fourth place is taken by short videos (shorts) on YouTube (31%).

In regard to this question, no significant statistical differences were observed between gymnasium and vocational education (Figure 24).

Figure 24.

What content do you watch the most on the Internet (on social media or on websites)?

Up to three answers are possible

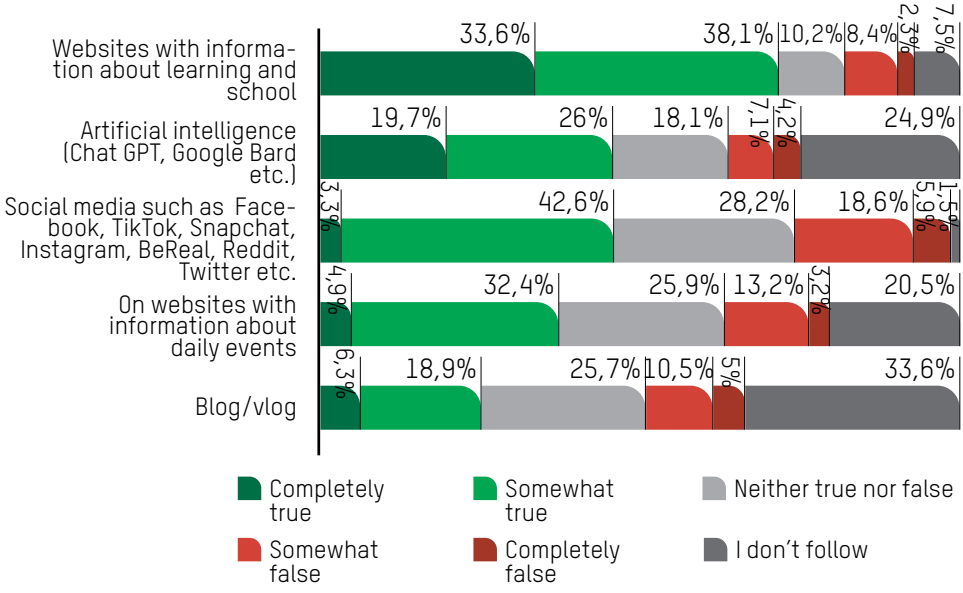


When asked the question: "On a scale from 1 to 5, where 1 means completely false and 5 means completely true, how true do you think the content posted on social media is" (Figure 25), one quarter of them consider that they are false (18.6% - somewhat false, and 5.9% - completely false). Unlike them, almost half of the students consider that the content is true (3.3% - completely true, 42.6% - somewhat true).

A large majority of the students consider that websites with information for learning are truthful (33.6% - completely true, 38.1% - somewhat true), a total of 10% of them are skeptical and the same number are neutral. That artificial Intelligence generates truthful content is the opinion of almost half of the students (19.7% - completely true, 26% - somewhat true).

Figure 25.

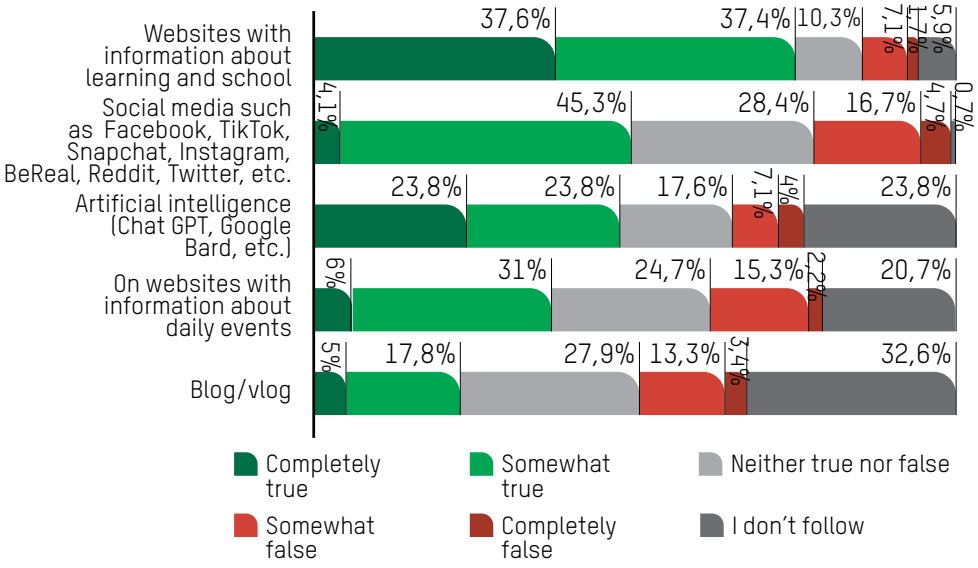
On a scale from 1 to 5, how true do you think is the content posted on:



About 37.3% of the respondents consider that the content of websites with information about daily events are true (4.9% -completely true, 32.4% - somewhat true), whereas a quarter consider that the content of a blog or a vlog are true (6.3% - completely true, 18.9% - somewhat true).

Figure 25.1

On a scale from 1 to 5, how true do you think is the content posted on:
Cross-sectional results – Gymnasium education

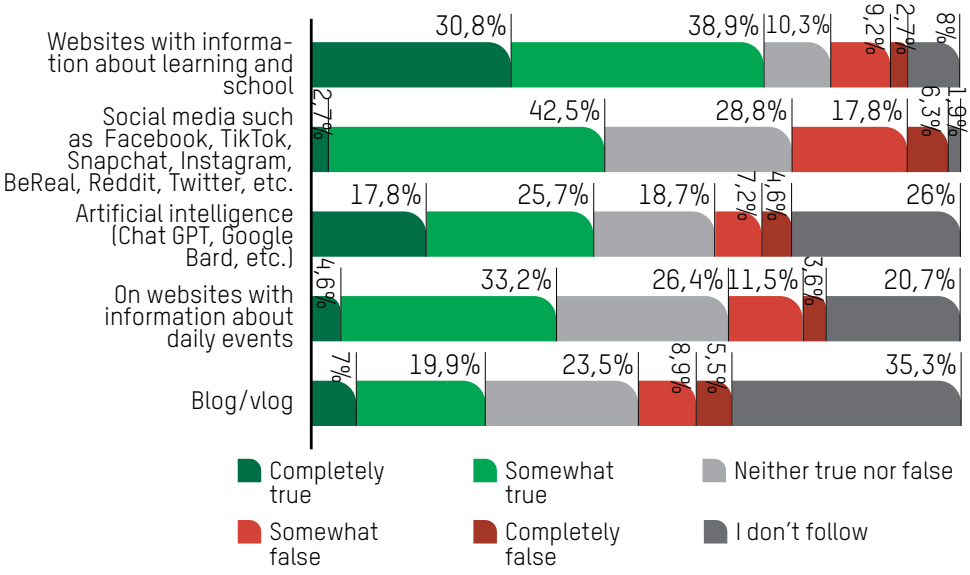


In regard to this question, no significant statistical differences were observed between gymnasium and vocational education. (Figures 25.1 and 25.2)

Figure 25.2

On a scale from 1 to 5, how true do you think is the content posted on:

Cross-sectional results – Vocational education



The next question had the purpose of determining what the views are in regard to the behavior on the Internet (Figure 26). The majority of surveyed students answered that they find their way around the Internet very easily (24.2% - strongly agree, 44.2% - agree). Then, 62% of the students answered that they acquire new knowledge and skills via social media (13.5% - strongly agree, 48.2% - agree).

In the survey, 58.6% of the students indicate that they have knowledge about how to stay safe online, with 16% of them strongly agree and 42.6% of them agree with this statement. However, the percentage of the students who answer that they do not have a view based on this statement (24.2%) or disagree with it (17.2%) is not negligible. In contrast, when it comes to the ability to protect personal information online compared to real life, the divide

is smaller but still significant: 46.5% of the respondents believe it is easier to hide their information online, whereby 12.7% - strongly agree and 33.8% - agree. However, it is important to take into account the answers that indicate that students either do not have well-build view on this issue (22.1%) or disagree with it (31.5%). Additionally, the survey reveals that 36.2% of the respondents feel comfortable using social media, by 9.6% of them strongly agree and 26.6% of them agree. Here it should be taken into account that a not so small percentage (26.1%) states that they disagree with this statement, that is, they do not feel comfortable on social media. Similarly, about 40% of the respondents disagree with the view that social media negatively affect them (13.6% - strongly disagree, 26.7% - disagree). However, almost as many (41.1%) do not have a view on this issue. The view that social media are a substitute for other social contacts is not supported by 37.3% of them, but approximately the same number (32.8%) consider that they are a substitute for other social contacts, and 30% of them remain neutral in this regard.

The use of social media to form one's own opinion is supported by 26.1% of the students, which is a data that should not be neglected in conditions where an additional 38.6% of them do not have a view on this issue. Not such a small percentage of the students - 23.5% of them agree that it is easier for them to talk on the Internet than in person. Contrary to it, 55.5% of them disagree with this statement. In the absence of more in-depth data on the reasons why it is easier for someone to talk on the Internet than in person, with a dose of reservation, it can still be assumed that a certain percentage of the students consider the Internet a "comfort zone" for communicating with others. Perhaps due to the reduction of social anxiety or the reduction of shyness and the pressure of how they look in the eyes of others while communicating with them, the pressure to talk openly and honestly when they are face to face, the ability to hide their emotions and so on. Hence, this finding deserves further, more detailed research.

Furthermore, 20.1% of them agreed that social media help them solve personal problems, compared to 49.2% who disagreed with this statement and 30.7% who were undecid-

ed on the issue. This finding (20.1%) related to some of the above-mentioned findings, according to which: almost half of the students consider that the content posted on social media is true (total 45.9%), then over a quarter of them (28.1%) consider that if they share something online, it may not have consequences in real life, and that 22.6% of the respondents believe that information shared on TV is always true, suggests caution, as a not negligible percentage of the students are in a position to be at risk of falling under the influence of disinformation and/or propaganda. Among students, 60.3% disagree that they feel more confident on the Internet than in real life, whereas 17.3% agree that this is exactly the case. Almost the same distribution of answers is observed for the next statement, according to which it is easier to talk about personal matters on the Internet. 60.1% of the students disagree with this statement, and 17.9% of them agree. These results (17.3% and 17.9% respectively) follow up on the previously mentioned 23.5% of the students who agree that it is easier for them to talk on the Internet than in person and again point to the assumption that a certain percentage of the students considers the Internet a "comfort zone" for communicating with others, in order to overcome some personal challenges that may arise from social contacts and environment.

The majority of the students disagree that the conversation on the Internet is much more interesting than the one in real life (31.9% - strongly disagree, 37.1% - disagree). Also, 64.1% of them disagree that they say or do things on social media that they would never do in person (28.4% - strongly disagree, 35.7% - disagree).

Analyzing the last three views in Figure 26 below, we can notice some aspects of the students' view towards social media and Internet communication. For the first view, 4.9% of the respondents strongly agree and 11.7% agree that it is 'COOL' to be frivolous and obscene on the Internet, which is a total of 16.6% who view this aspect of Internet behavior positively. On the other hand, a total of 62.3% (33.9% - disagree and 28.4% - strongly disagree) do not support this opinion, which indicates that the prevailing opinion that seriousness and decency are also important on the Internet.

For the second view, a small percentage of the respondents, 4.5%,

strongly agree and 10.1% agree that they say or do things on social media that they would never do in person - a total of 14.6%. This may suggest that for a certain number of the students, social media create a space where they feel freer to express aspects of their personality that they would not normally show. Contrary to this, significantly more, 64.1% (35.7% - disagree and 28.4% - strongly disagree), disagree with this statement, showing that social media are not a place to do such actions.

Lastly, with the third and last view, 4.2% of them strongly agree and 9.5% of them agree that conversation on the Internet is much more interesting than in real life, a total of 13.7%. This may indicate that there is a small group of the students who feel that digital communications can offer something that real life cannot. However, most respondents, 69% (37.1% - disagree and 31.9% - strongly disagree), do not share this opinion, highlighting the importance of personal, face-to-face communications.

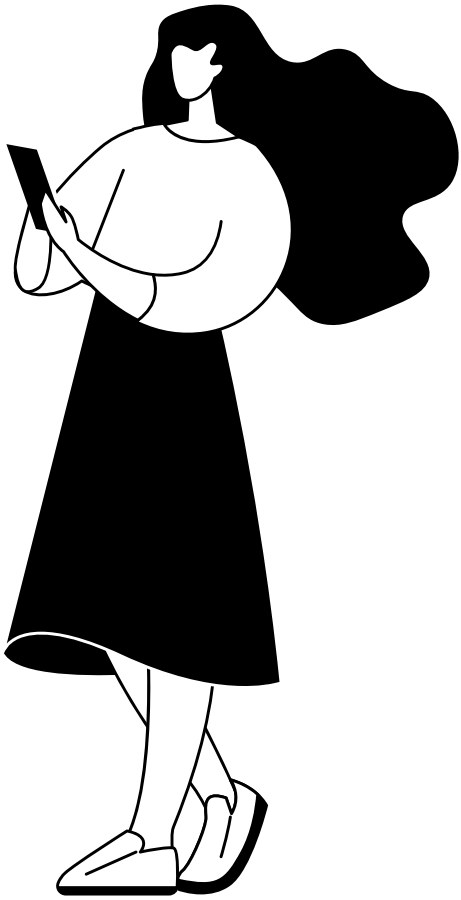


Figure 26.

To what extent do you agree or disagree with the following views?

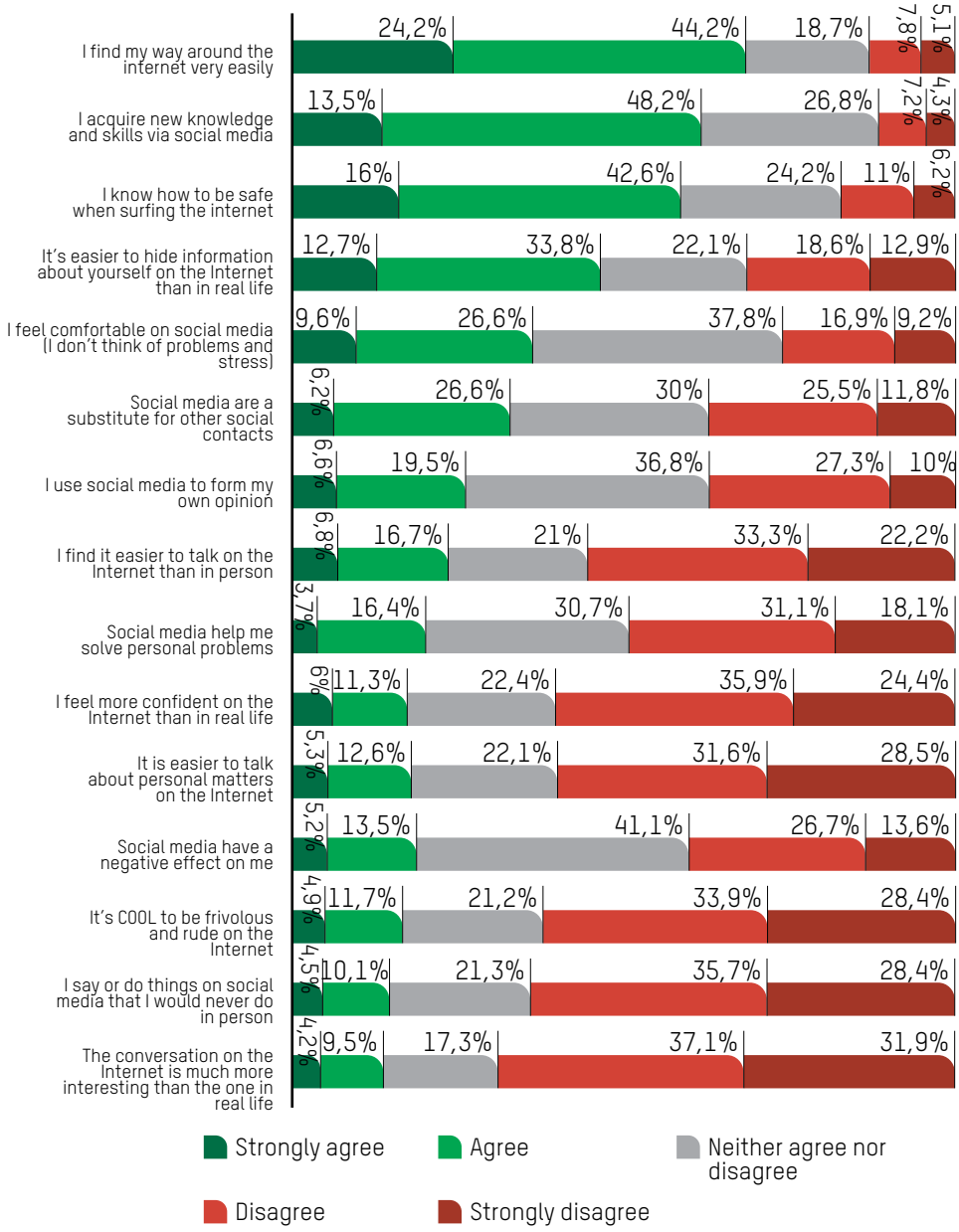
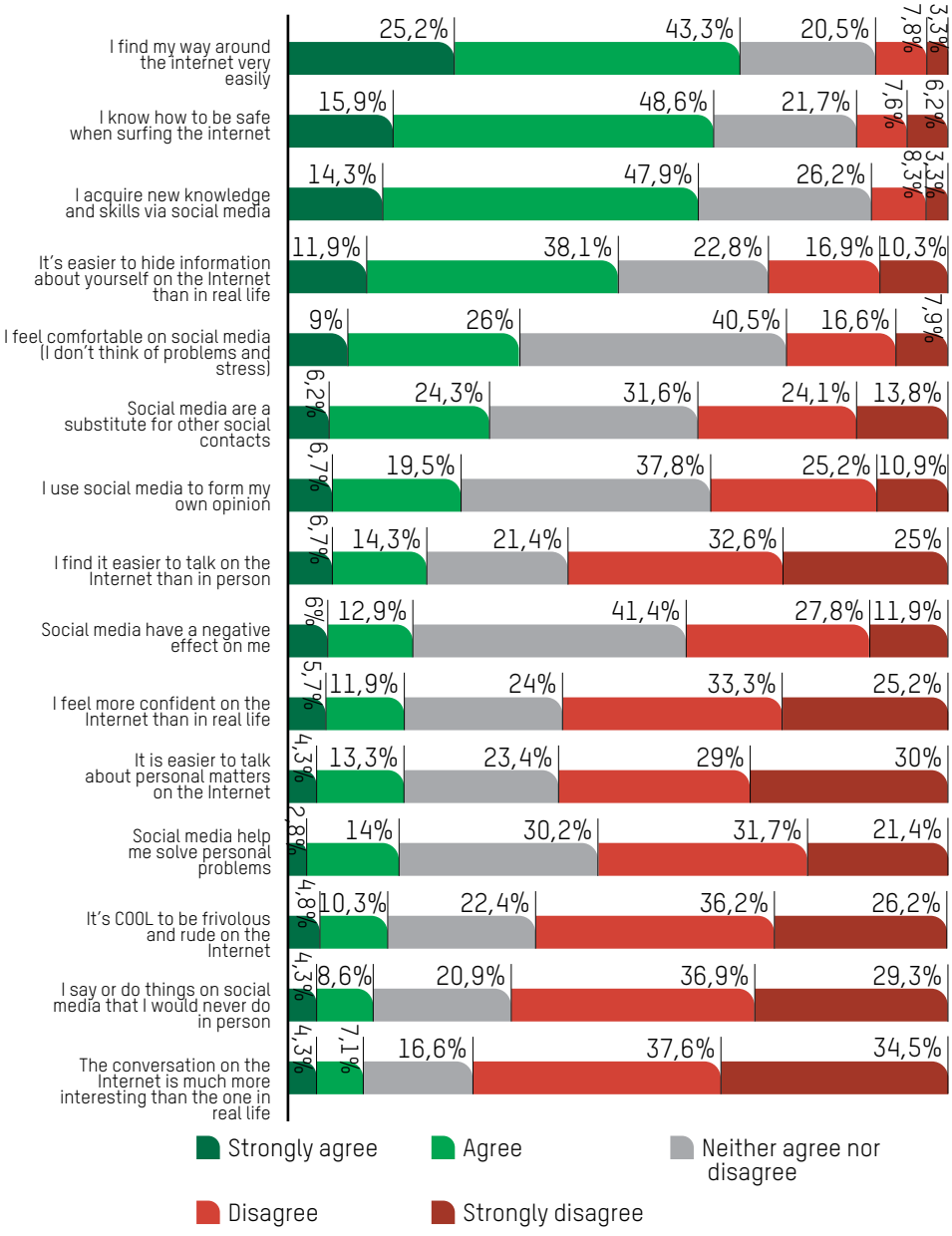


Figure 26.1.

To what extent do you agree or disagree with the following views?
Cross-sectional – Gymnasium education

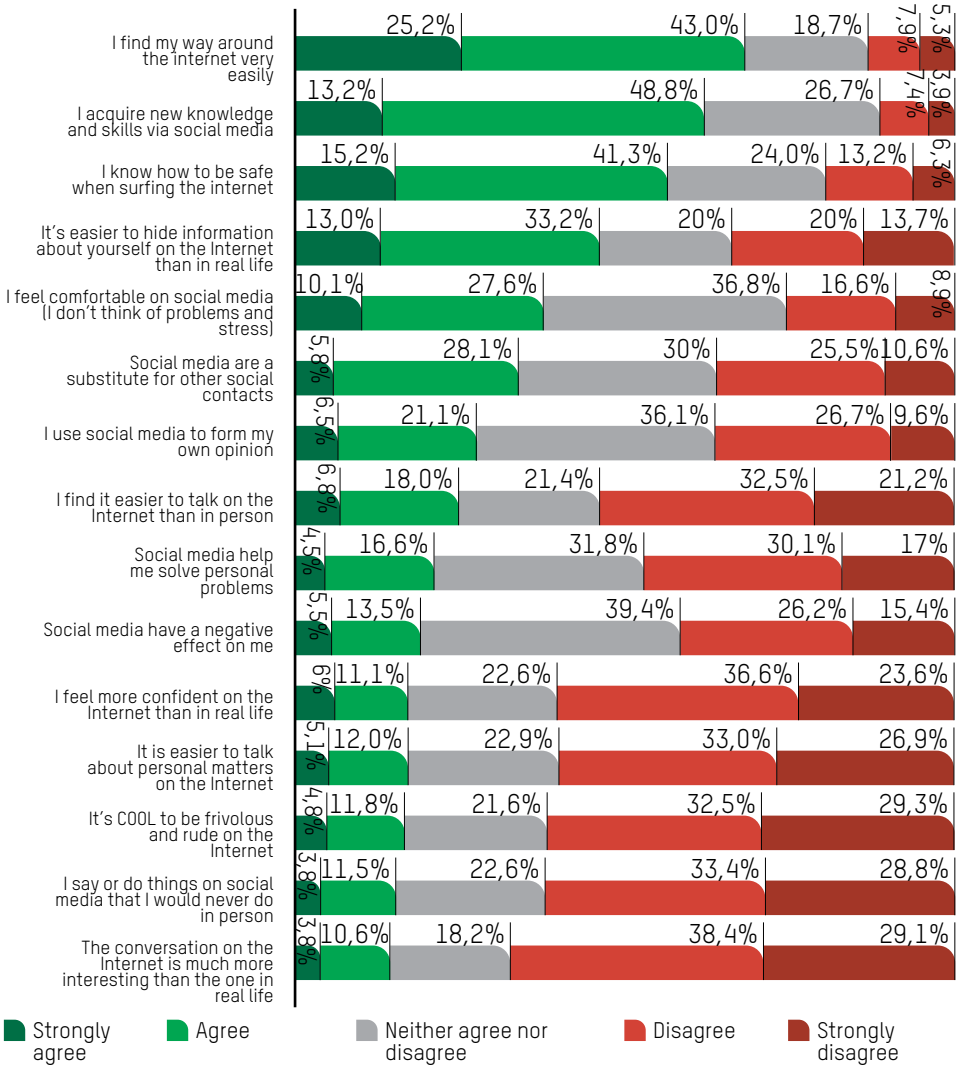


In regard to this question, no significant statistical differences were observed between gymnasium and vocational education. (Figures 26.1 and 26.2)

Figure 26.2.

To what extent do you agree or disagree with the following views?

Cross-sectional results – Vocational education



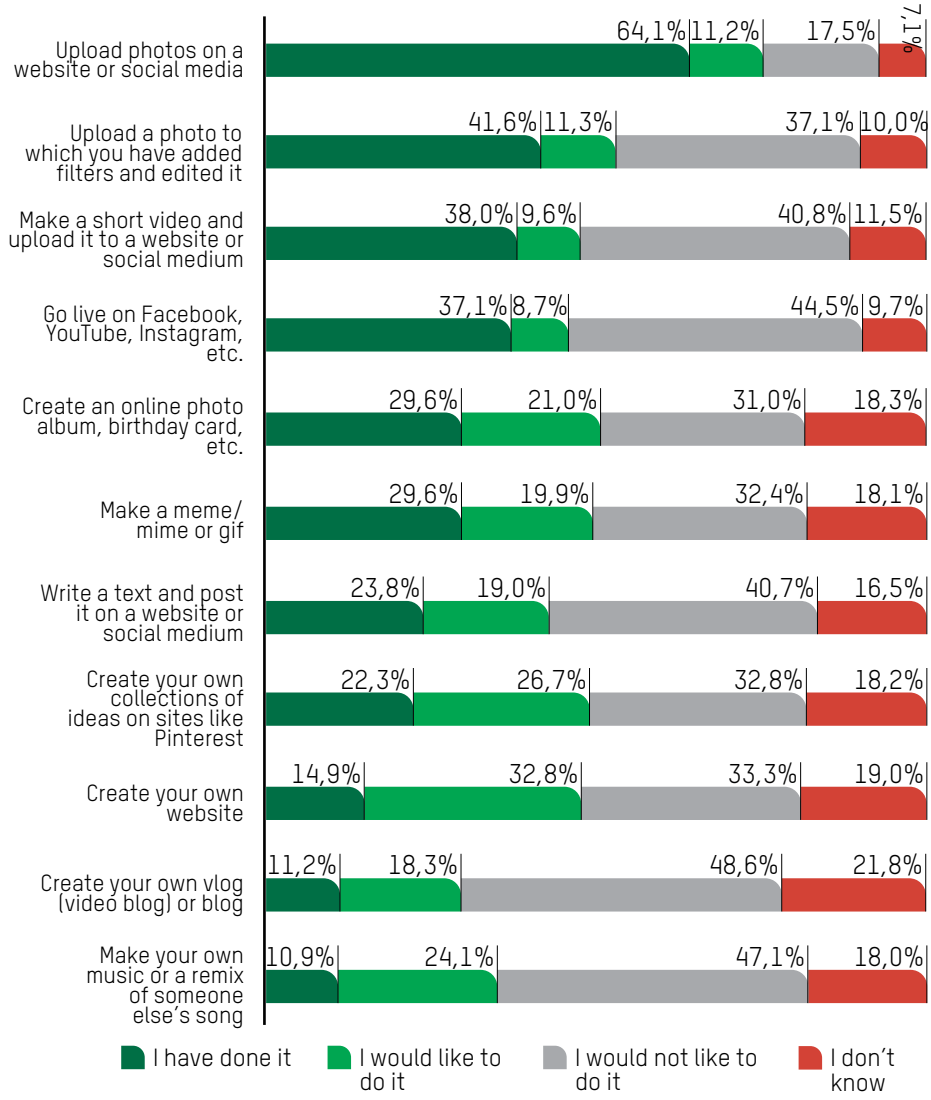
The next set of questions examines what activities students like or don't like to do on the Internet (Figure 27). The majority of the students (64.1%) have uploaded photos to a website or social medium, 41.6% have uploaded a photo to which they have added filters and edited it (an additional 11.3% of them would like to do so), and 37.1% of them would not like to do it. 40.8% of them would The situation is similar to going live on Facebook, YouTube, Instagram, etc. - about 44.5% of them would not like to do it, but 37.1% of them have done it, and 8.7% of them would like to do it. Also, 40.7% of them would not like to write a text and post it on a website/social medium, but 23.8% of them have already done it, and 19% of them would like to do it. A total of 49.5% of them have already made a mime or a gif (29.6%) or would like to do so (19.9%), whereas 32.4% of them would not like to do it, and 18.1% of them stated that they do not know whether or not they would like to make a mime or a gif. Almost the same distribution of answers can be observed to the question in regard to making an online photo album, birthday card, etc. – 29.6% of them declared that they had already done it, 21% of them that they would like to do it, 31% of them would not like to, and 18.3% of them do not know.

By one-third each, that is, 33% of them represent the students who would like to, that is, who would not like to create their own web page. There is a similar division of views when it comes to creating their own collections of ideas on sites like Pinterest (26.7% - would like to, and 32.8% - would not).

Of the activities that students predominantly would not like to do, about half (48.6%) would not like to create their own vlog or blog, and 47.1% would not like to make their own music or remix someone else's song.

Figure 27.

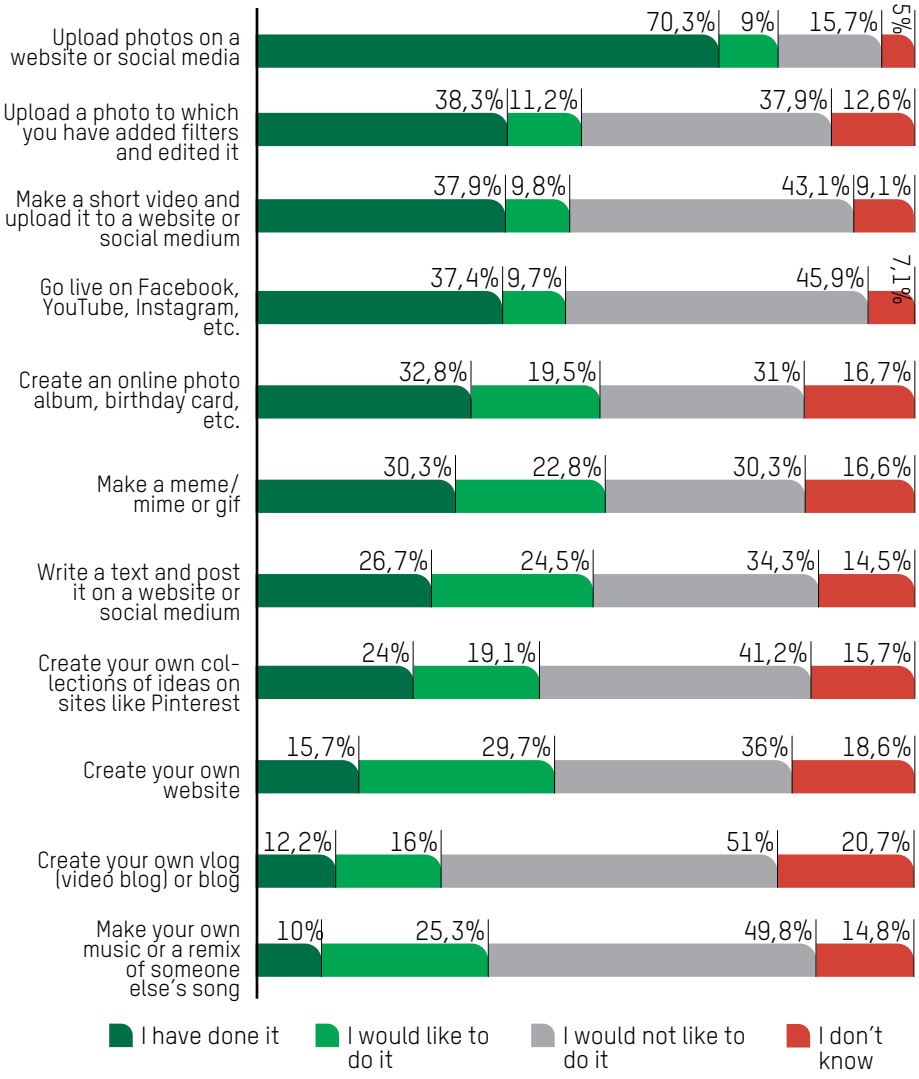
Have you done, would you like to do, or would you not like to do each of the following activities on the Internet?



A higher percentage of male respondents have been live on Facebook, YouTube, Instagram, etc., compared to female respondents who have created their own collections of ideas on sites (Pinterest).

Figure 27.1.

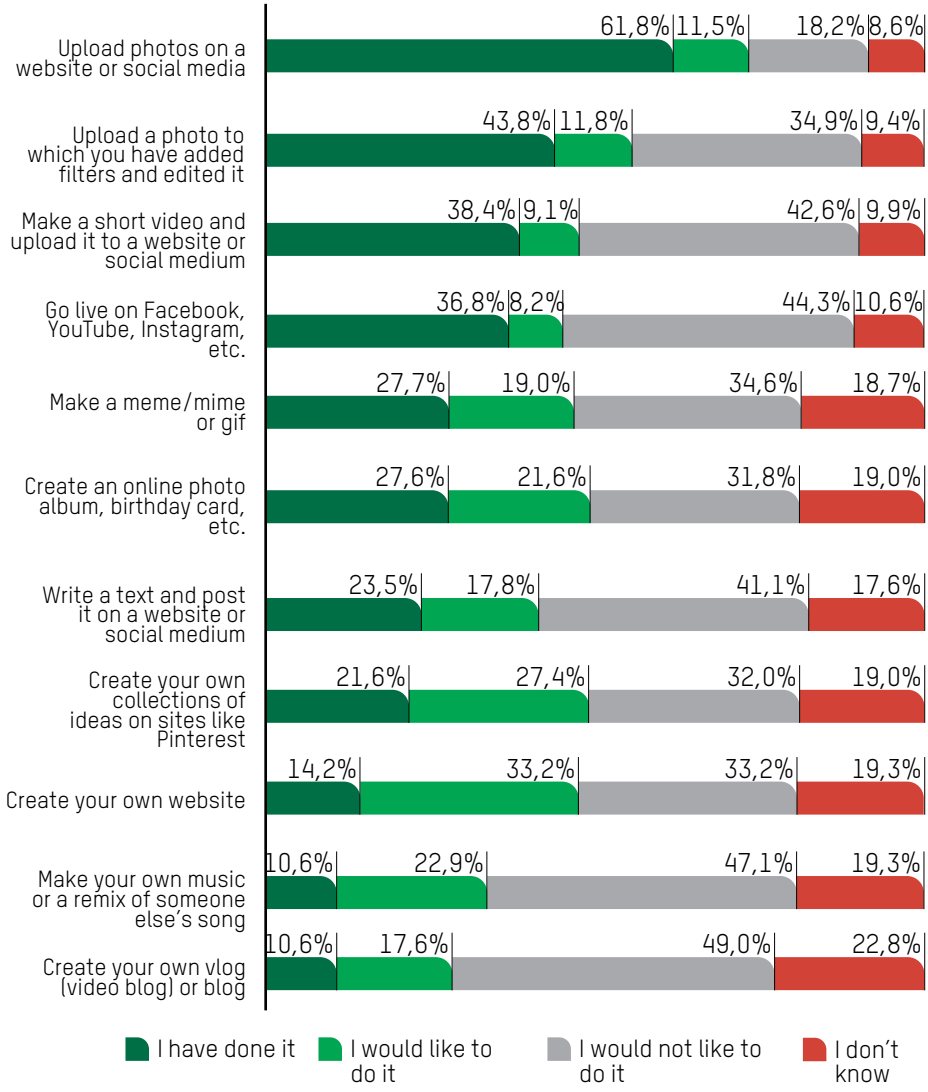
Have you done, would you like to do, or would you not like to do each of the following activities on the Internet?
Cross-sectional results – Gymnasium education



In regard to this question, no significant statistical differences were observed between gymnasium and vocational education (Figures 27.1 and 27.2).

Figure 27.2.

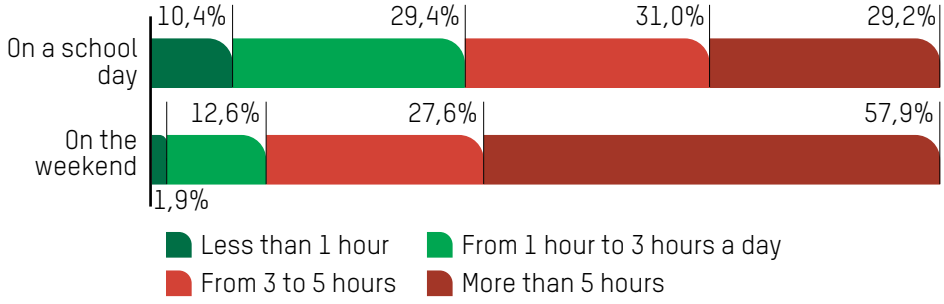
Have you done, would you like to do, or would you not like to do each of the following activities on the Internet?
Cross-sectional results – Vocational education



One of the things this analysis wanted to examine is playing games. Four out of ten students (39.8%) play games for up to 3 hours on a school day. Three in ten (31%) play games for 3 to 5 hours and the same number more than 5 hours (29.2%). The figure is different on the weekend when 57.9% of the respondents spend more than 5 hours a day playing games, 27.6% of them play from 3 to 5 hours, and about 15% of the students play games for up to 3 hours (Figure 28).

Figure 28.

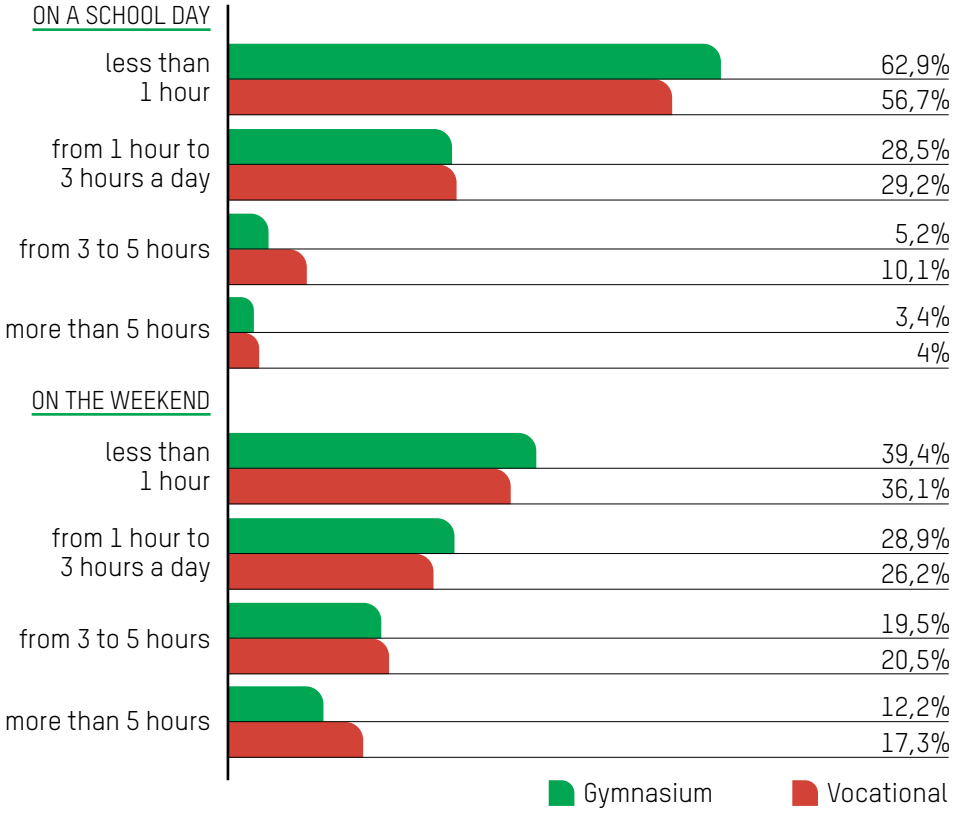
How many hours a day do you play games?



In regard to this question, it was noted that, even though there are no drastic differences, some of the vocational education students spend more time playing games than the gymnasium students. This difference is particularly emphasized on the weekend when 17.3% of vocational education students spend more than 5 hours playing games, compared to 12.2% of gymnasium students (Figure 28.1).

Figure 28.1

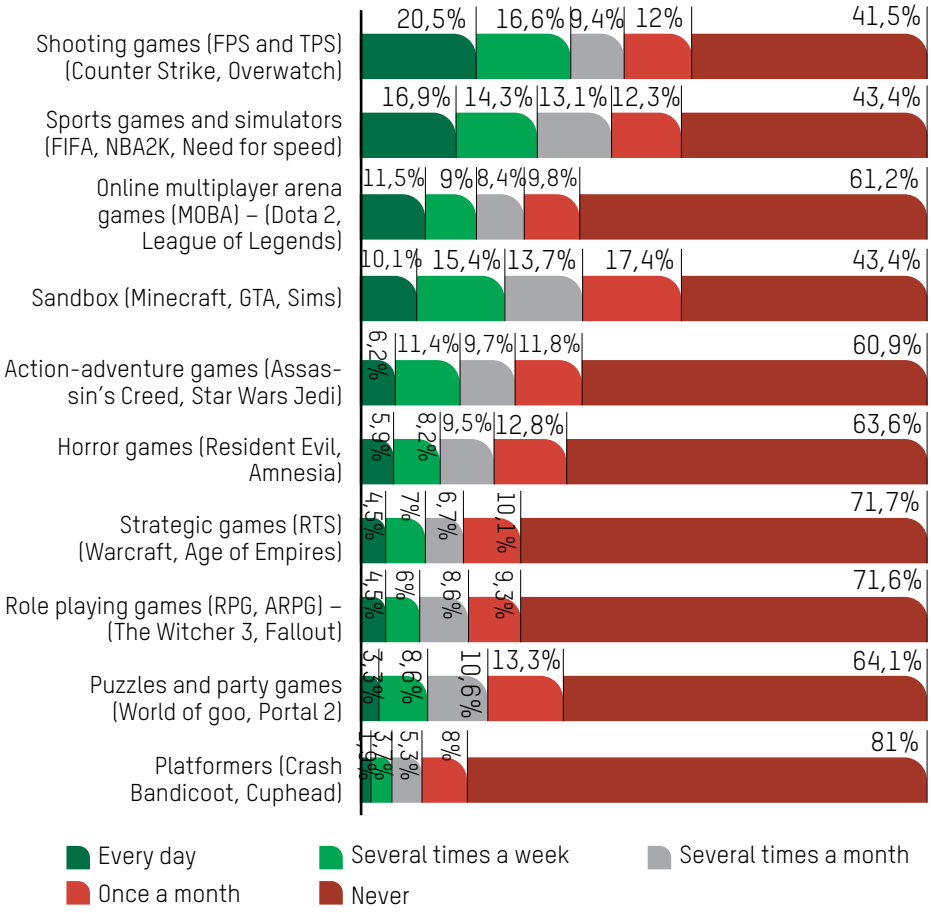
How many hours a day do you play games?
Cross-sectional by type of education



Once the frequency of playing was established, it was important to see which games most attract young secondary school students (Figure 29). Therefore, they were asked how often and what games they play. In their answers, they single out shooting games (FPS and TPS) in the first place, which they play most frequently in total of 38% - 20.5% - every day and 16.6% - several times a week, but contrary to this, 41.5% of the respondents never play such games, and 12% of them once a month. In regard to intensity, the second place is taken by sports games and simulators, such as FIFA, NBA2K, Need for Speed (16.9% of them play them every day, and 14.3% of them several times a week), whereas 43.4% of them never play them (12.3% - once a month).

The third place in regard to frequency is taken by Sanbox games, such as Minecraft, GTA, Sims, which are played by a quarter of the respondents (15.4% - several times a week and 10.1% - every day), but 43.4% of them never play them either, and 17.4% of them once a month. Online multi-player arena games like DOTA 2, League of Legends are the last ones that are frequently played by more than one-fifth of the students (11.5% - every day and 9% - several times a week), but the majority who do not play them is much larger - 61.2% - never and 9.8% - once a month.

Figure 29.
How often do you play games?



In regard to this question, no significant statistical differences were observed between gymnasium and vocational education, with the exception of shooting games, which are more common among secondary vocational education students (Figures 29.1 and 29.2).

Figure 29.1.

How often do you play games?
Cross-sectional results – Gymnasium education

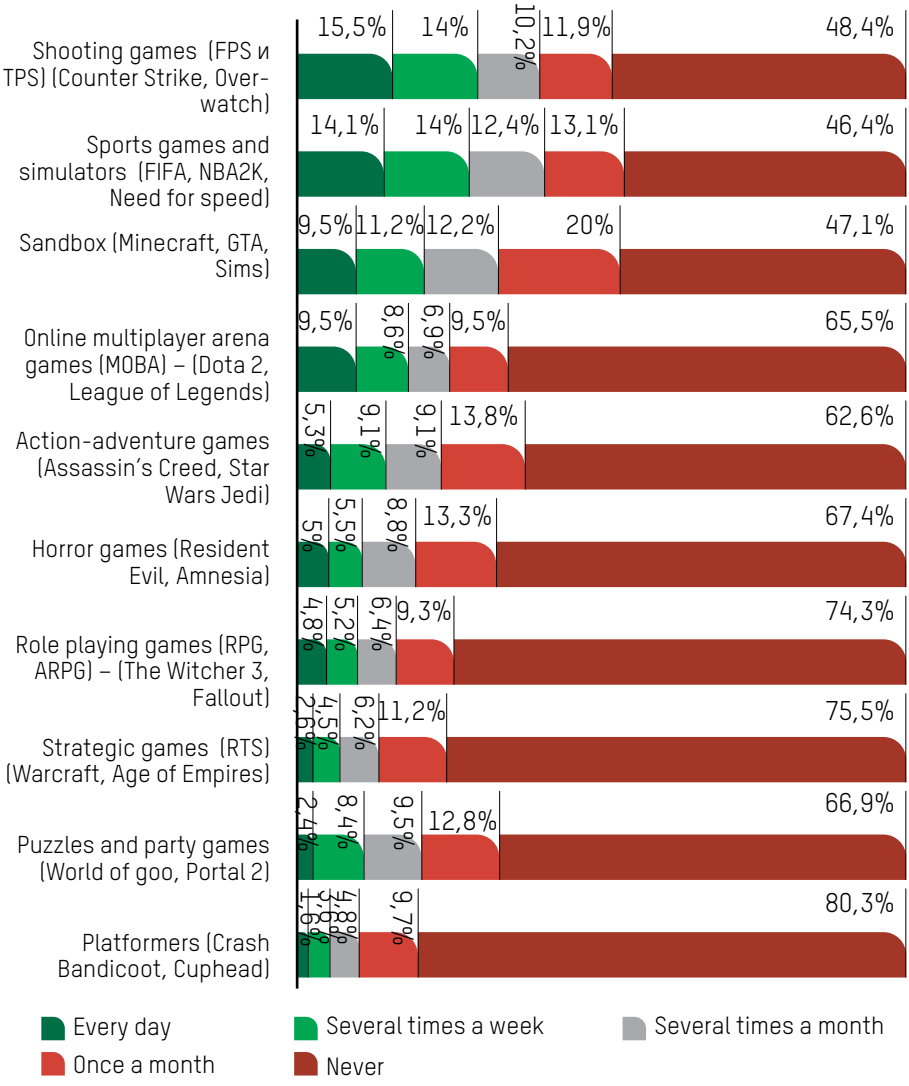
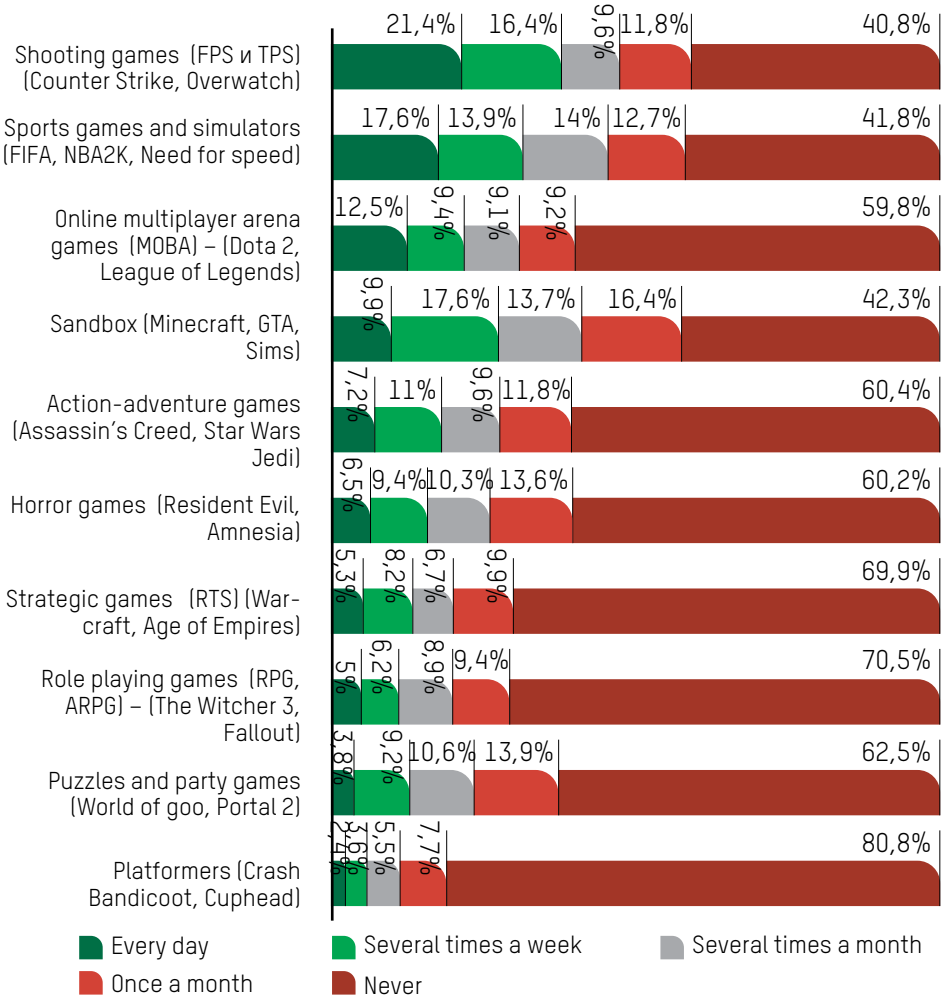


Figure 29.2.

How often do you play games? Cross-sectional results – Vocational education



The first conclusion of the analyses conducted in this segment is that almost all students who have taken part in this research use a smartphone, which is predominantly used by them to access the Internet. Compared to watching TV during the working week, students are significantly more and longer in the Internet space. This difference is even greater

on the weekend, when a large number of the students (57.9%) actively use the Internet for more than 5 hours a day, and the percentage of those who are actively online from 3 to 5 hours a day is not small either (27.6%). When they are online, they spend most of their time on social media (89% - every day) and listening to music (72.6% - every day). Other activities for which students often use the Internet are: accessing Skype, WhatsApp, Messenger, Telegram, then searching for data needed for school, as well as watching TV programs, videos and movies. More than half of the students (62% to be precise) watch TikTok videos, followed by short videos (reels) on Instagram (46%), music (39%) and short videos (shorts) on YouTube (31%). In order to gain a more detailed insight into the potential positive or negative impact of the indicated social media, it is desirable to further investigate the content of the videos that students watch on TikTok, Instagram, and YouTube. This is particularly significant because the public often witnesses that various forms of behavior called "challenges" are often set on TikTok, which collect "likes" for popularity and they are imitated by children and adolescents, and are often risky and endanger the health and safety. Another data that does not support the development of critical view and thinking among some students is that almost half of them consider that the content posted on social media is true (45.9% in total). A large majority of the students (total 71.7%) consider that websites with information for learning are truthful, and that artificial intelligence generates truthful content (total 45.7%). On the contrary, the expert public agrees that not all websites used as sources of information always offer true and valid information (e.g. Wikipedia), and that artificial intelligence can sometimes generate content with false information, which is why it is always necessary to verify their veracity and reliability before they are used.

Probably the most interesting in this segment are the students' views in regard to their behavior on the Internet. The detailed overview of the answers is given above, before the respective tables. Students also spend a lot of time playing games, thus 39.8% of them play games for up to 3 hours, 31% of them play from 3 to 5 hours and almost as many more than that play 5 hours (29.2%) on a

school day. On the weekend, a huge percentage of the students (85.5% in total) play for more than 3 hours a day (57.9% - more than 5 hours). If these data are complemented by the previously reported findings about the time spent on social media and in front of the TV on the weekend (even during the working week), it becomes very worrying about the degree of the screen time and media content exposure of the students that is often not for educational purposes. This inevitably affects their overall development and goes in favor of the name by which these new generations are called in the world - digital natives. The fact that they are so frequent and intensive in the Internet space, however, does not imply that they by default know everything about digital communication and that they have developed media literacy (which is also referred by some of the findings of this research commented above).

3.2. Social media

Social media constantly form interactions between students. They use them to share experiences and form views. Social media platforms have become an integral part of the modern society fabric, shaping communication, information dissemination and social interactions. While these networks create opportunities for connectivity, they also pose challenges to privacy and security.

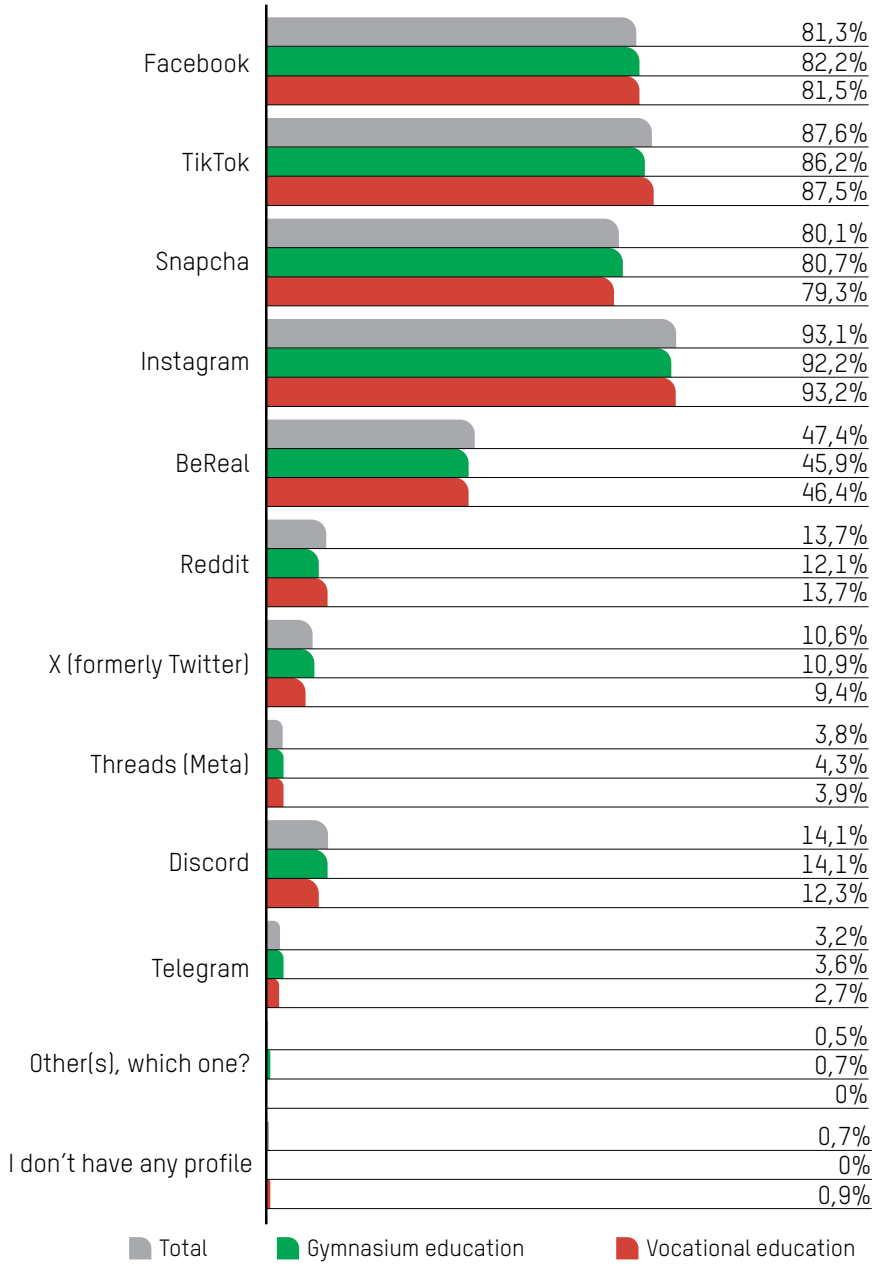
When asked the first question of this set, a high percentage of surveyed students answered that they have profiles on popular social media. In the first place they single out Instagram, leading by 93.1%, the second place is taken by TikTok by 87.6% and the third place by Facebook by 81.3%. Eight out of ten students (80.1%) also use Snapchat.

In regard to this question, no significant statistical differences were observed between gymnasium and vocational education (Figure 30).

Figure 30.

On which social media do you have a page or profile?

Multiple answers are possible (has an app/profile)

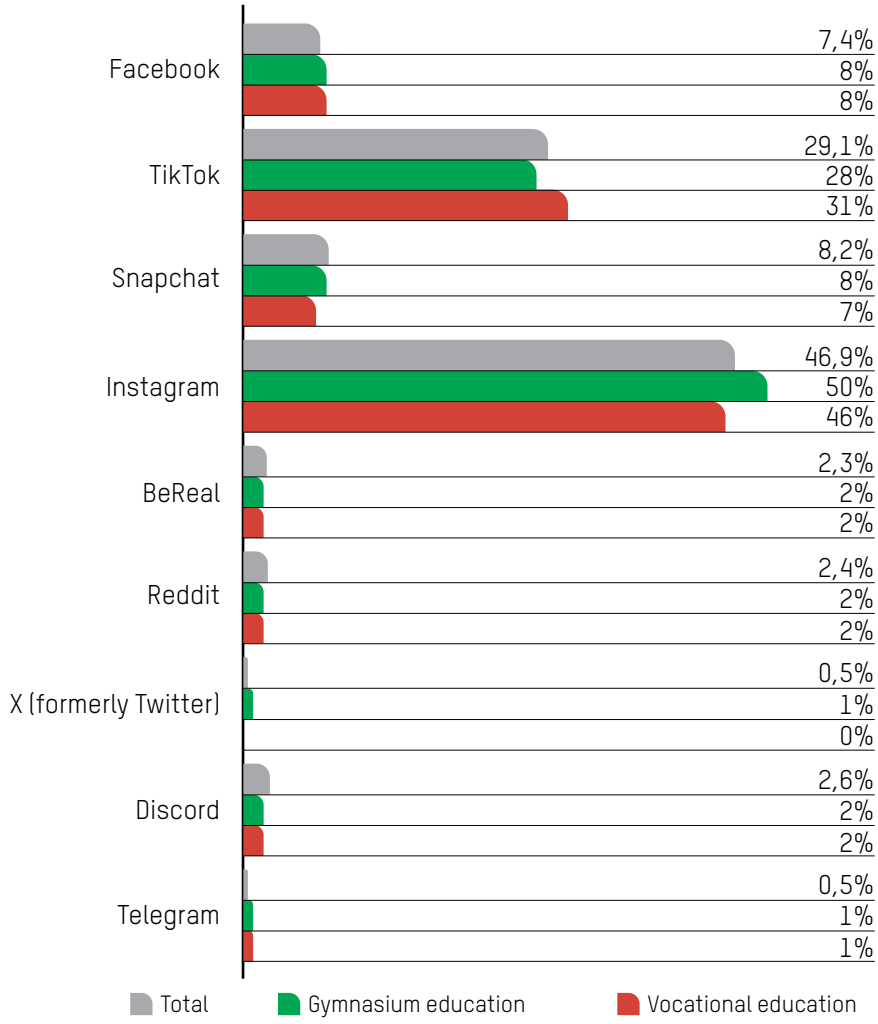


The previous question had given the opportunity for them to give multiple answers because the purpose was to see which social media students generally use. Then it was necessary to examine which social media they use most often (Figure 31). Their answers showed that the Instagram is again in the first place, which is used most often by 46.9% of them, and TikTok takes the second place by 29.1%. The difference with the previous answers occurs with the third most used social media - in third place, students single out Snapchat by 8.2%, and Facebook is used less, that is, 7.4%.

In regard to this question, no significant statistical differences were observed between gymnasium and vocational education.

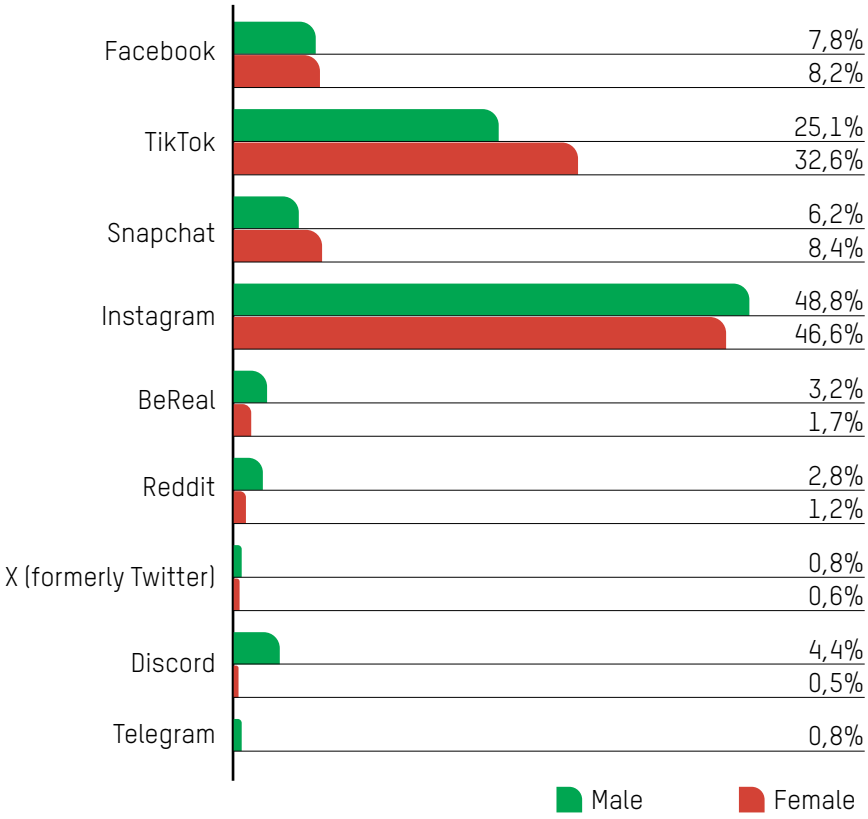
Figure 31.

Which social medium do you use most often?



A higher percentage of girls use the TikTok, compared to boys (Figure 31.1).

Figure 31.1.
Which social medium do you use most often?
Cross-sectional result by gender

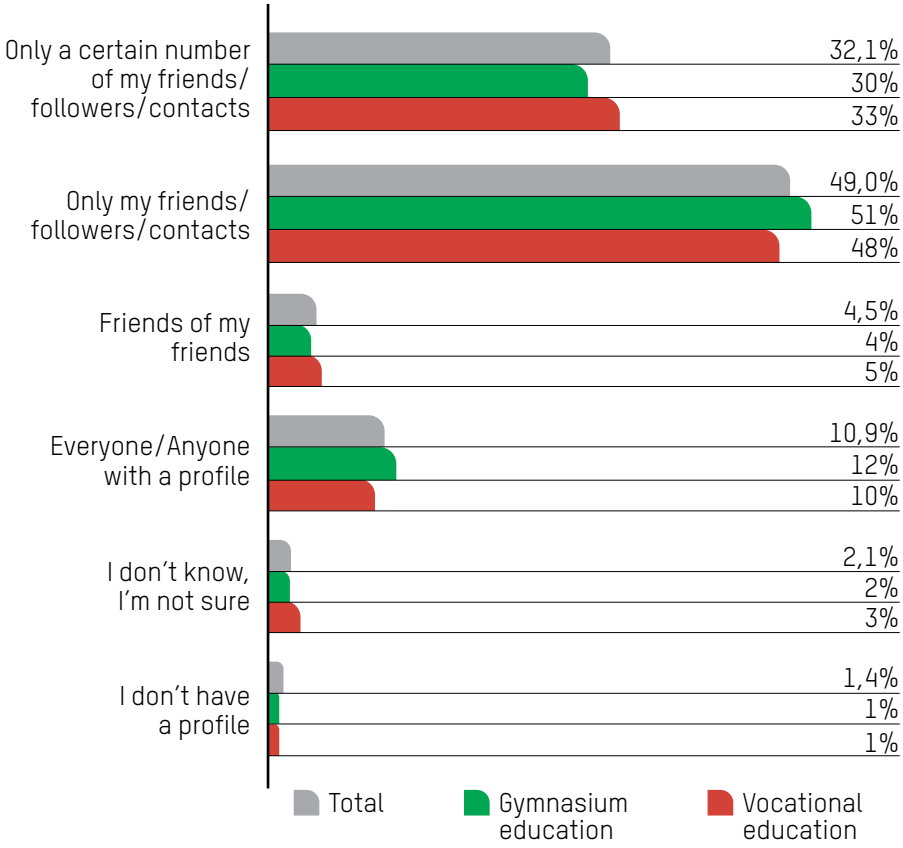


When asked: "Who can see your page or profile of the application you use the most", most students (49%) state that their profile can only be seen by their friends/followers/contacts. About 32.1% of them answered that their profile can only be seen by a certain number of their friends/followers/contacts. A small percentage (10.9%) leave their profile open to everyone.

In regard to this question, no significant statistical differences were observed between gymnasium and vocational education (Figure 32).

Figure 32.

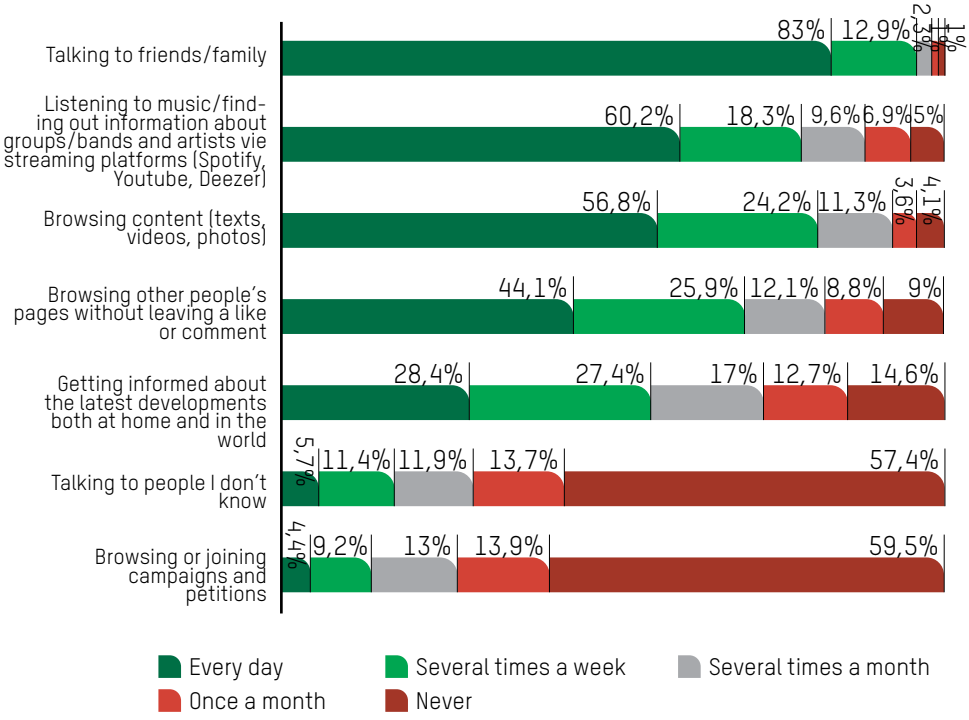
Who can see your page or profile on the application you use the most?



In regard to social media activities, shown below in the graph (Figure 33), a large majority of them (83%) answered that they talk to friends/family every day via social media, whereas more than half of them (60.2%) answered that they listen to music / find out information about groups and artists via streaming platforms. About 56.8% of them answered that they browse content (texts, videos, photos) on social media. Four out of ten respondents (44.1%) browse other people's pages every day without leaving a like or comment.

Figure 33.

How often do you do the following activities on social media?

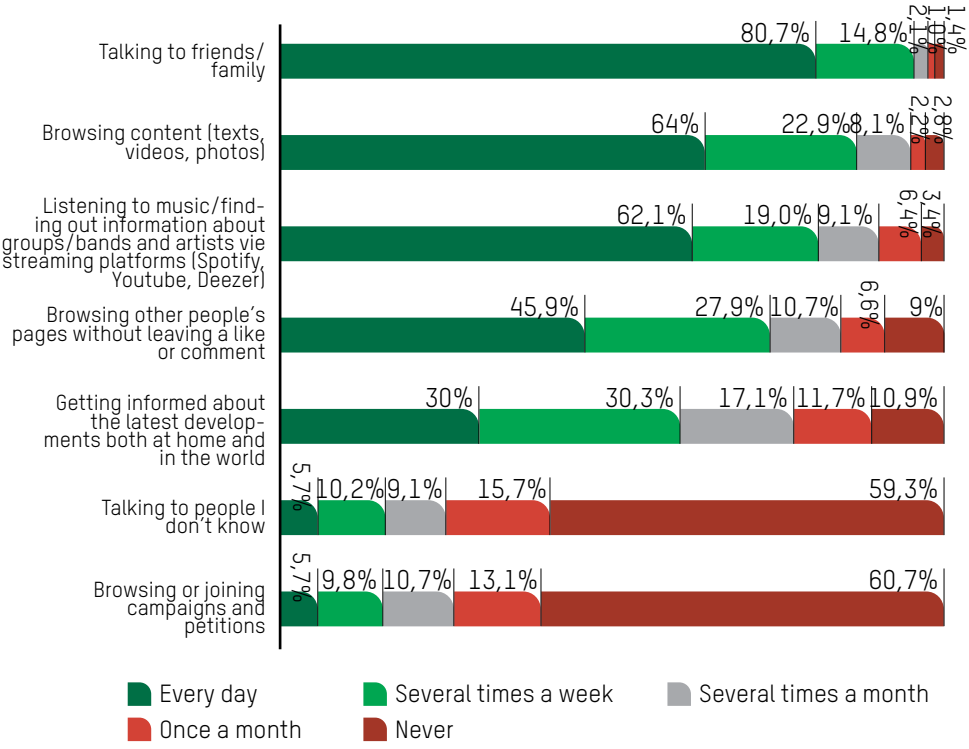


For two things, the answers are predominantly negative: six out of ten respondents (59.5%) have never considered or joined campaigns and petitions, and 57.4% of them have never talked to people they don't know via social media.

Figure 33.1.

How often do you do the following activities on social media?

Cross-sectional results – Gymnasium education

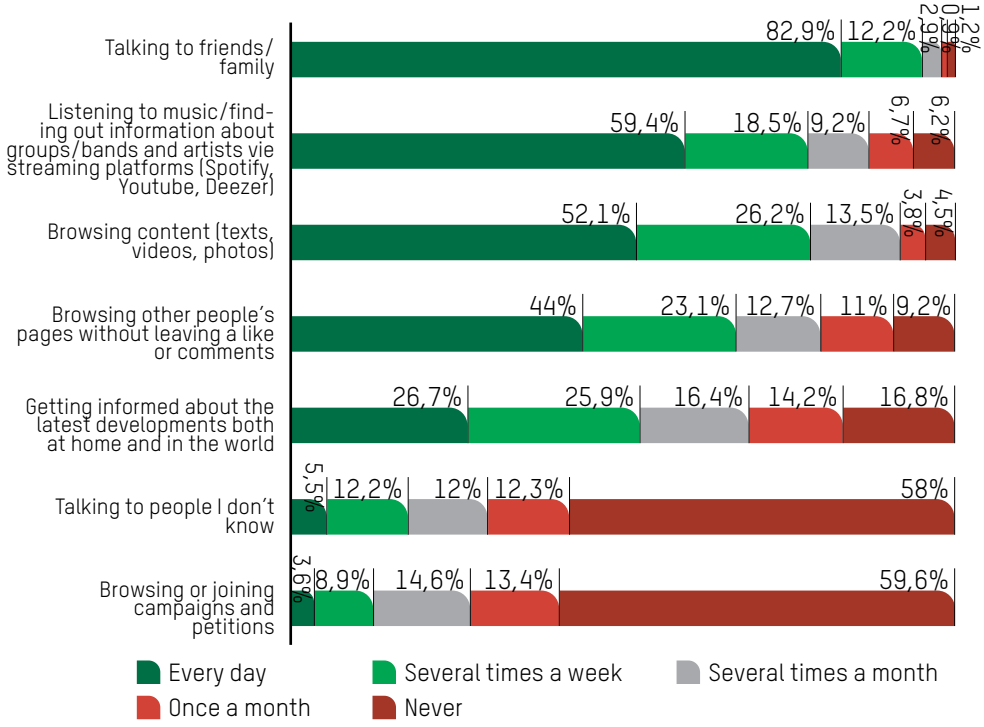


No significant statistical differences were observed between gymnasium and vocational education (Figures 33.1 and 33.2).

Figure 33.2.

How often do you do the following activities on social media?

Cross-sectional results – Vocational education

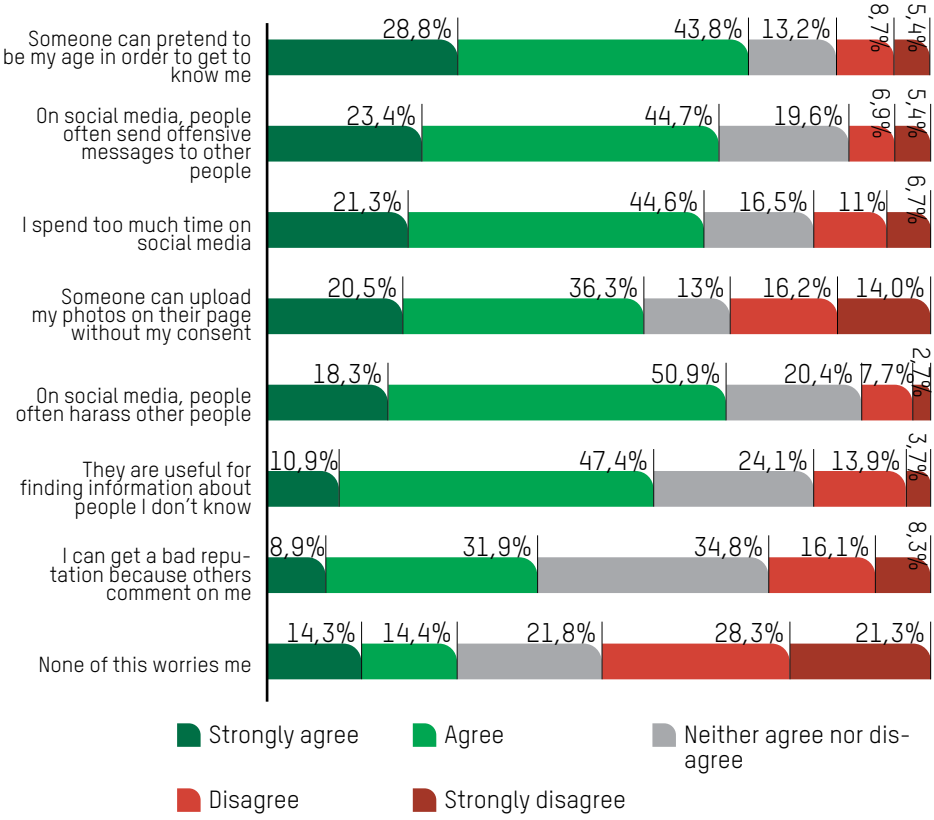


The next set of views are related, for the most part, to the dangers of social media (Figure 34). Seven out of ten respondents agree with the view that someone can pretend to be their age in order to get to know them (28.8% - strongly agree, 43.8% - agree). A significant 69.2% of the students consider that on social media people often harass other people (18.3% - strongly agree, 50.9% - agree). More than two-thirds of the students (68.1%) agree that on social media people often send

offensive messages to other people (23.4% - strongly agree, 44.7% - agree). Two-thirds of them (65.9%) feel they spend too much time on social media (21.3% - strongly agree, 44.6% - agree). Also, more than half of the students (58.3%) consider social media useful in finding information about unknown persons (10.9% - strongly agree, 47.4% - agree).

Figure 34.

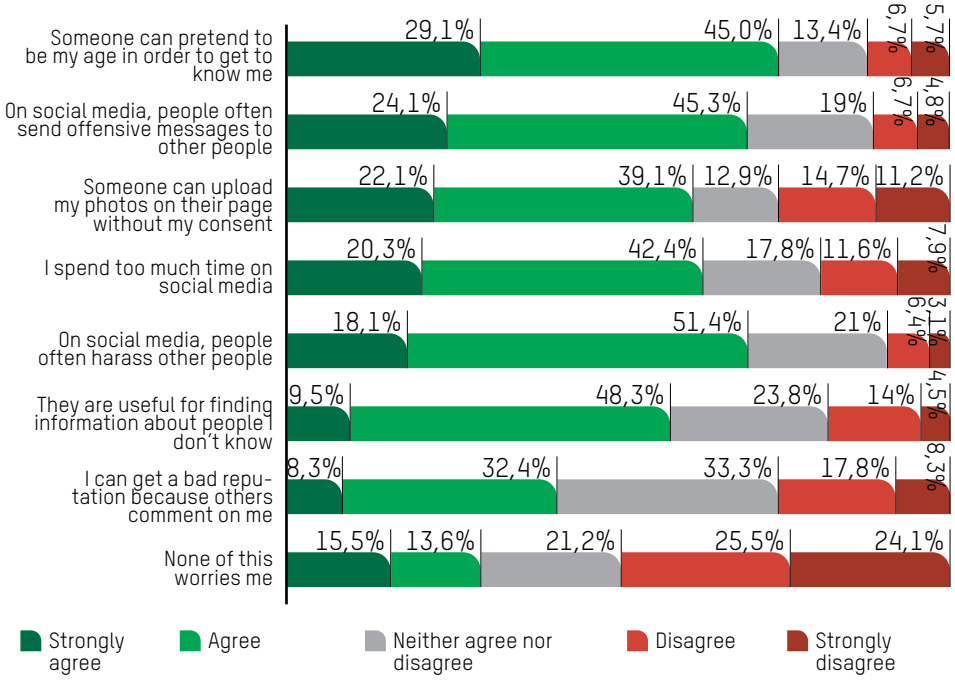
To what extent do you agree or disagree with the following views related to social media?



There are interesting views about whether they can get a bad reputation because others comment on them – a little less than a third of them agree with this (31.9%), and a little more than a third of them (34.8%) have not established view. Attention should be paid to the fact that 28.7% of the students do not worry about any of the above. A high 30.2% of them disagree with the statement that someone can upload their photos on their own profile without their consent, whereas 13% of them are neutral on this. Such findings indicate that a not insignificant number of the students obviously have insufficient knowledge about the dangers of misuse of personal data by cyber-predators and violations of security in the Internet space, or are otherwise uninterested in this topic.

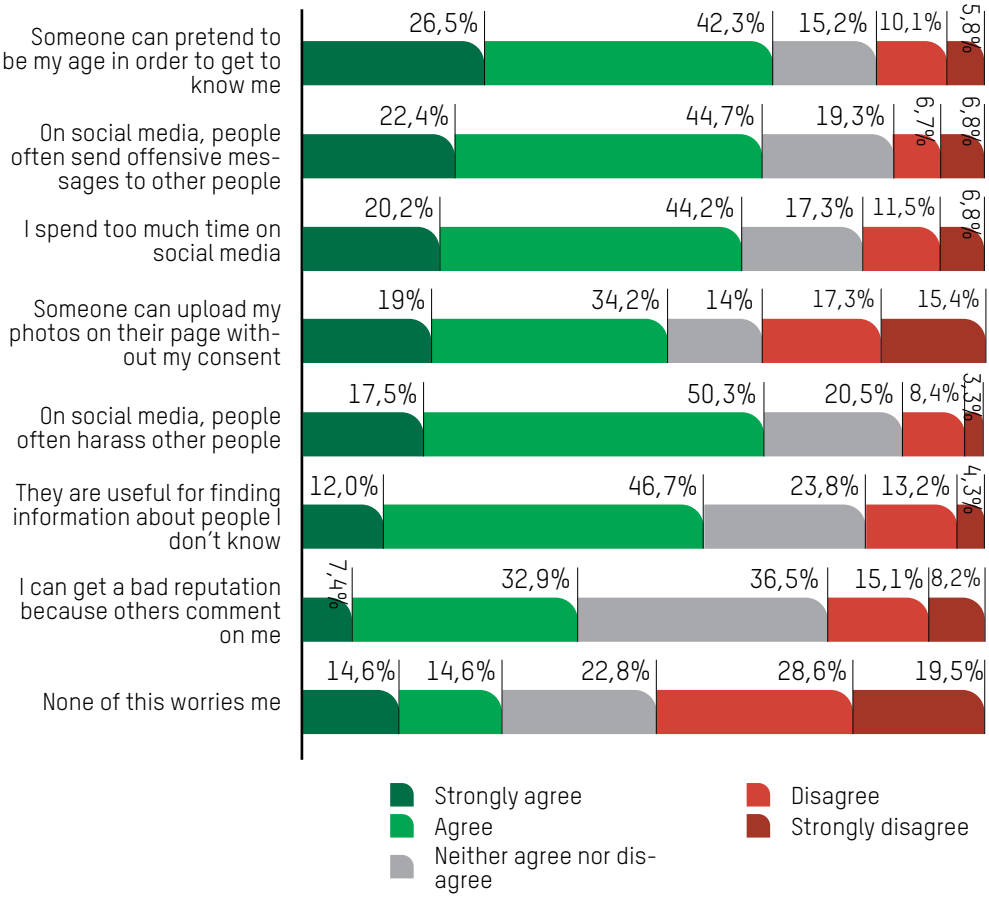
Figure 34.1.

To what extent do you agree or disagree with the following views related to social media?
Cross-sectional results – Gymnasium education



In regard to this question, no significant statistical differences were observed between gymnasium and vocational education (Figures 34.1 and 34.2)

Figure 34.2.
To what extent do you agree or disagree with the following views related to social media?
Cross-sectional results – Vocational education



When it comes to sharing personal information on the Internet (Figure 35), a large majority of the students share photos of their vacation – a total of 82% of which 41.5% of them do so without a problem, and 39.8% of them after thinking first about it. Sharing photos of going out with friends is very close in frequency - a total of 80% of which 48.8% of them share them without thinking, and 35.9% of them would think first about it, but still share them. A large majority (88.3%) of the students would never share their home addresses, and similar percentages were seen for other personal information such as email addresses (81.6%) and mobile phone numbers (82.5%). A large number of them, 70.1%, would not even share information about how they feel. However, 63.3% would share photos of their family or **other minor family members** (21.9% of them would share without a problem, and 41.4% of them would still share even though they would think first), whereas 36.7% of them would never do that. Taking into account the increasingly frequent urges by the cyber-security experts not to upload photos of children and minors on social media due to the range of risks related to stalking, tracking, facial recognition, misuse of personal photos, finding the location of the school where the child studies, etc., this behavior potentially endangers the safety of minor family members.

A higher percentage of male respondents (20%) would have no problem sharing public information about what they are doing, compared to female respondents (12%).

Figure 35.

Which of these would you share on the Internet publicly, so that the other can see it?
Cross-sectional results – Gymnasium education

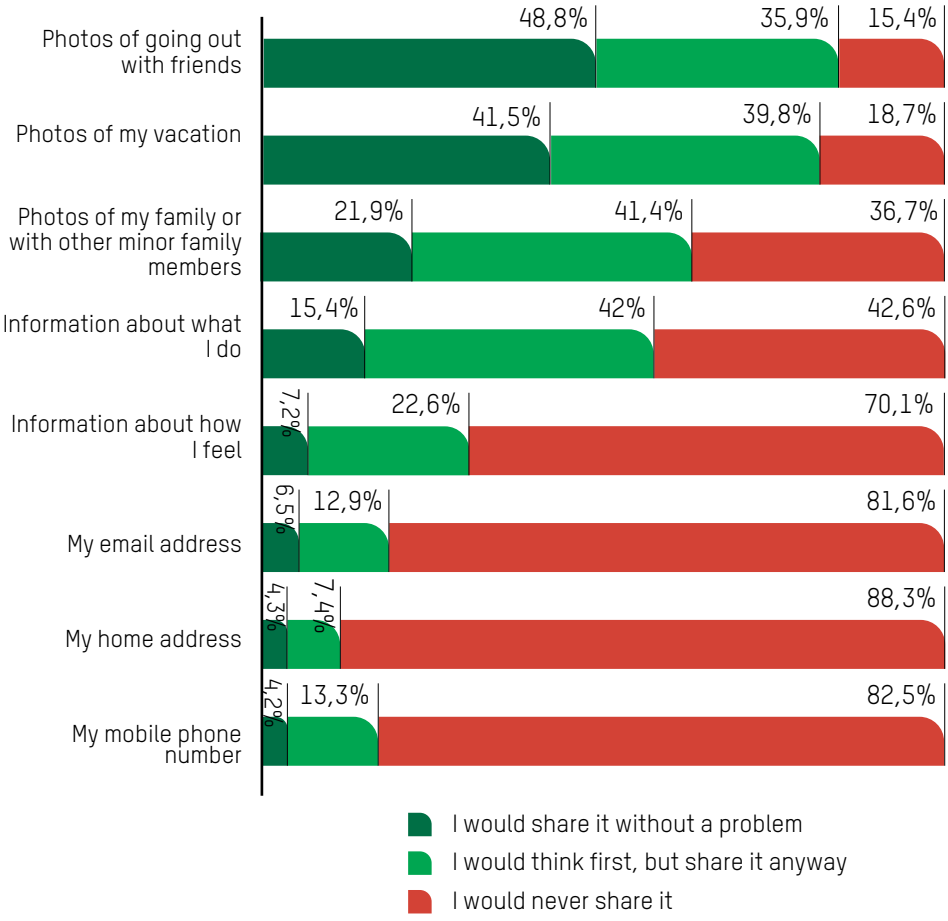
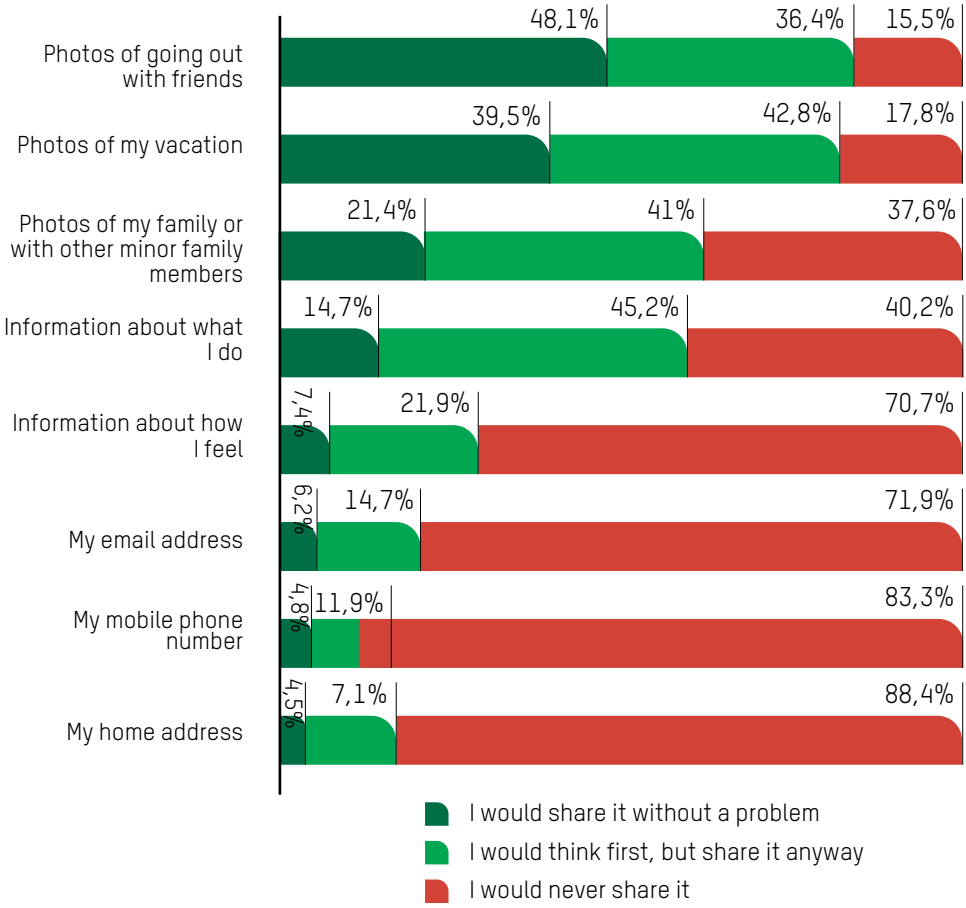


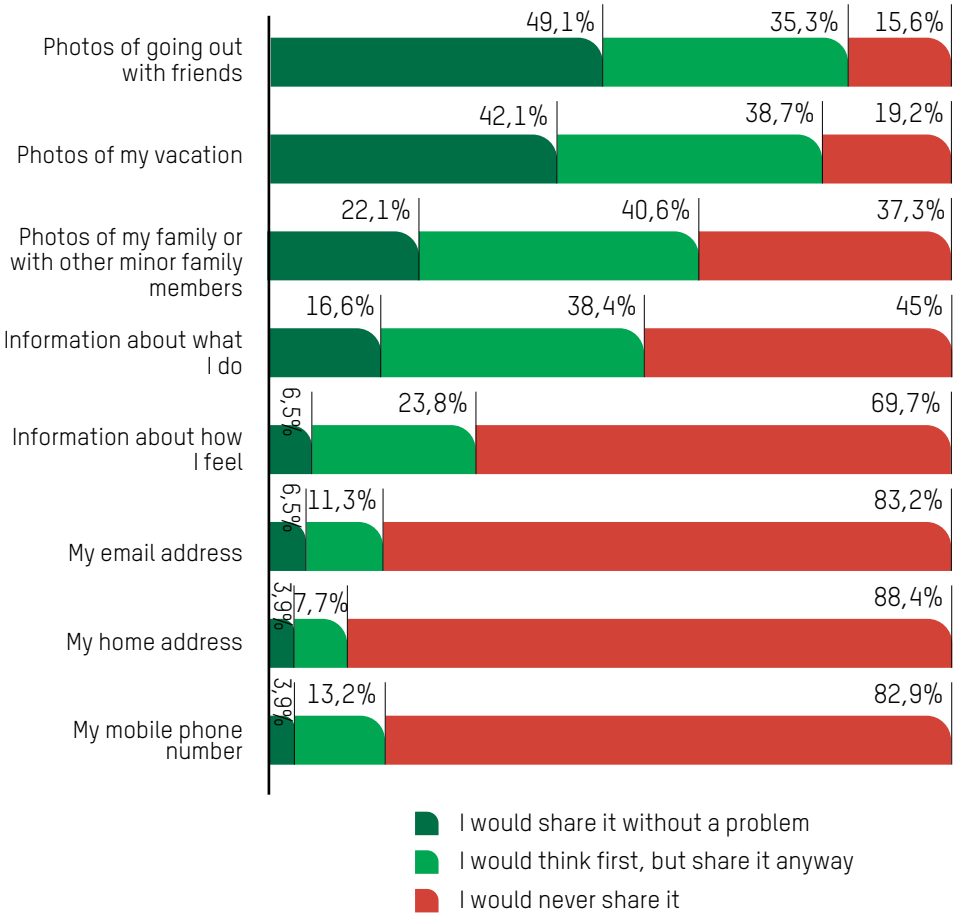
Figure 35.1.

Which of these would you share on the Internet publicly, so that the other can see it?
Cross-sectional results – Gymnasium education



In regard to this question, no significant statistical differences were observed between gymnasium and vocational education (Figures 35.1 and 35.2).

Figure 35.2.
Which of these would you share on the Internet publicly, so that the other can see it?
Cross-sectional results – Vocational education



The use of social media would not be complete if the students were not also asked if they follow influencers and bloggers and who they are. Almost 60% of them (Figure 36) answered that they follow influencers/bloggers. Thus, the largest number of them (27.6%) did not single out the person they follow the most (Table 3). Those who have done so single out the Serbian YouTuber Baka Prase[16] (3.7%) in the first place, the Macedonian YouTuber Stefan Lazarov[17] (2.7%) in the second place and the American YouTuber Mr. Beast[18] (2.6%) in the third place.

Figure 36.
Do you follow influencers and bloggers on your social media?

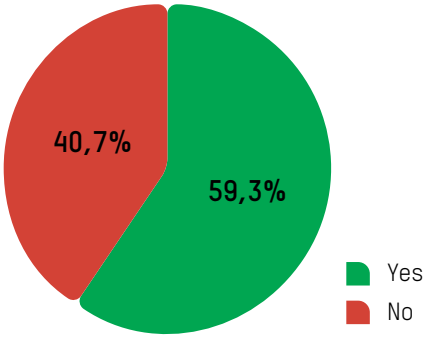


Table 3.
Name the two influencers and/or bloggers whose content you follow the most? Top 10

Baka Prase	**3,7%**
Stefan Lazarov	**2,7%**
Mr. Beast	**2,6%**
Anaj Bla	**1,9%**
Cristiano Ronaldo	**1,6%**
Roberto Navali	**1,4%**
Kaylie Jenner	**1,1%**
Ana Lazarevik	**1,0%**
Lea Stankovic	**1,0%**
Kendall Jenner	**0,9%**
No answer	**27,6%**

16 Serbian YouTuber, Internet personality, rap singer, gamer, artist and entertainer.

17 Macedonian YouTuber, Internet personality.

18 American YouTuber-buisness-phylanthropist.

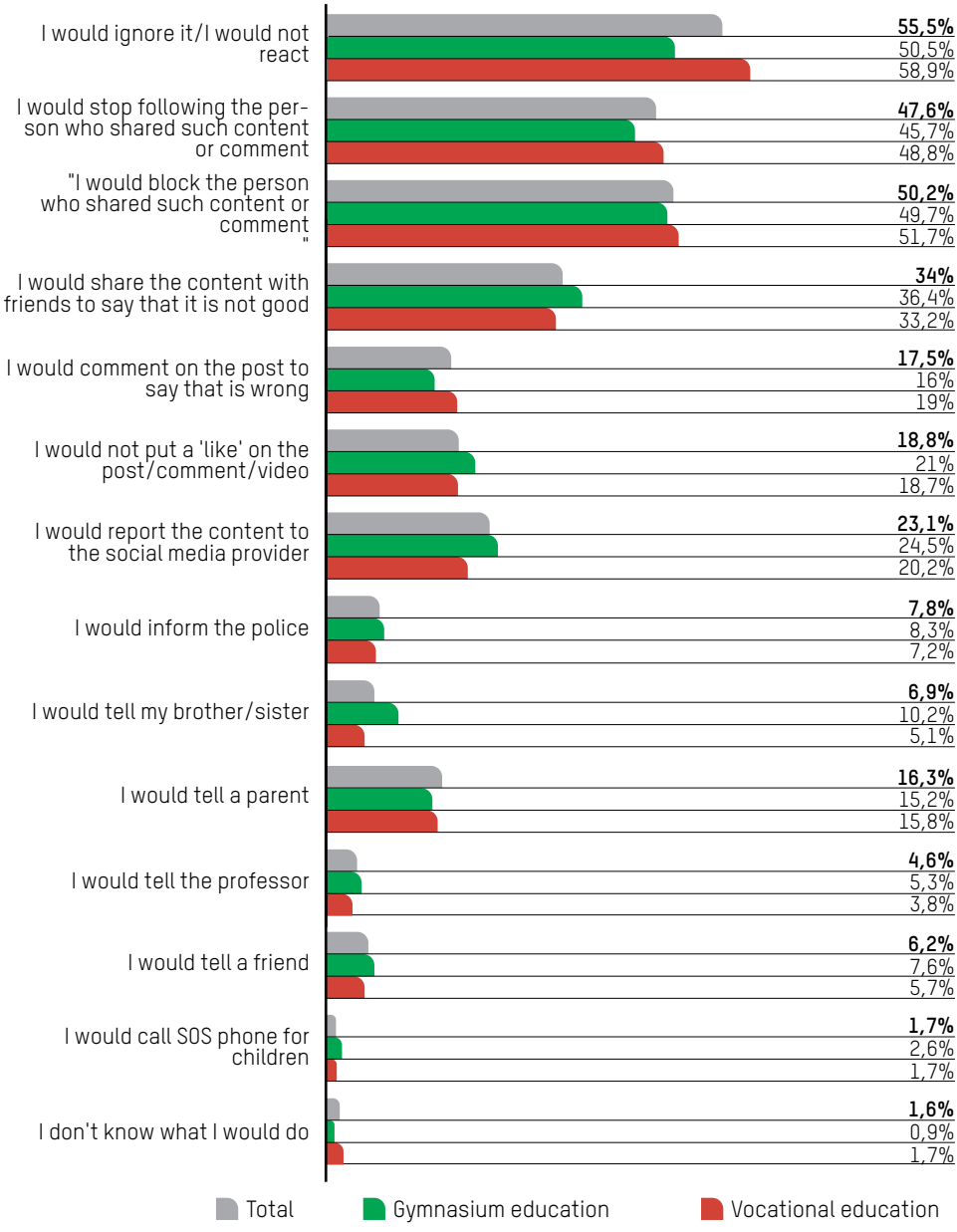
When it comes to how the first and second year students in secondary education react when they are faced with negative content on the Internet, the majority of the students (55.5%) answered that they would ignore it/would not react (Figure 37). In the second place, 50.2% of the respondents answered that they would block the person who shared it, 47.6% of the respondents answered that they would stop following the person who shared such content, 34% of them would share the content with friends to indicate that it is not right, whereas 23.1% of them would report it to the social media provider. The other options for a possible reaction would be done by less than a fifth of the respondents, by only 1.6% of them answering that they do not know what they would do.

In regard to this question, no significant statistical differences were observed between gymnasium and vocational education.

Figure 37.

What would you do if you see something on the Internet that you consider to be disturbing, rude, offensive, that can harm or affect someone negatively?

Up to three answers are possible



In regard to whether and from where students received information on how to be safe on the Internet (Figure 38), a significant number (81.6%) state that they received advice on Internet safety from their parents. About 40% of the students received advice from another family member, and 36.9% from teachers at school. A smaller percentage (29.8%) of the students received information from friends.

For two of the options, there are slightly more answers of gymnasium students than of vocational school students – namely, gymnasium students more often received information about Internet safety from another family member and from a teacher at school, in contrast to their peers of secondary vocational schools.

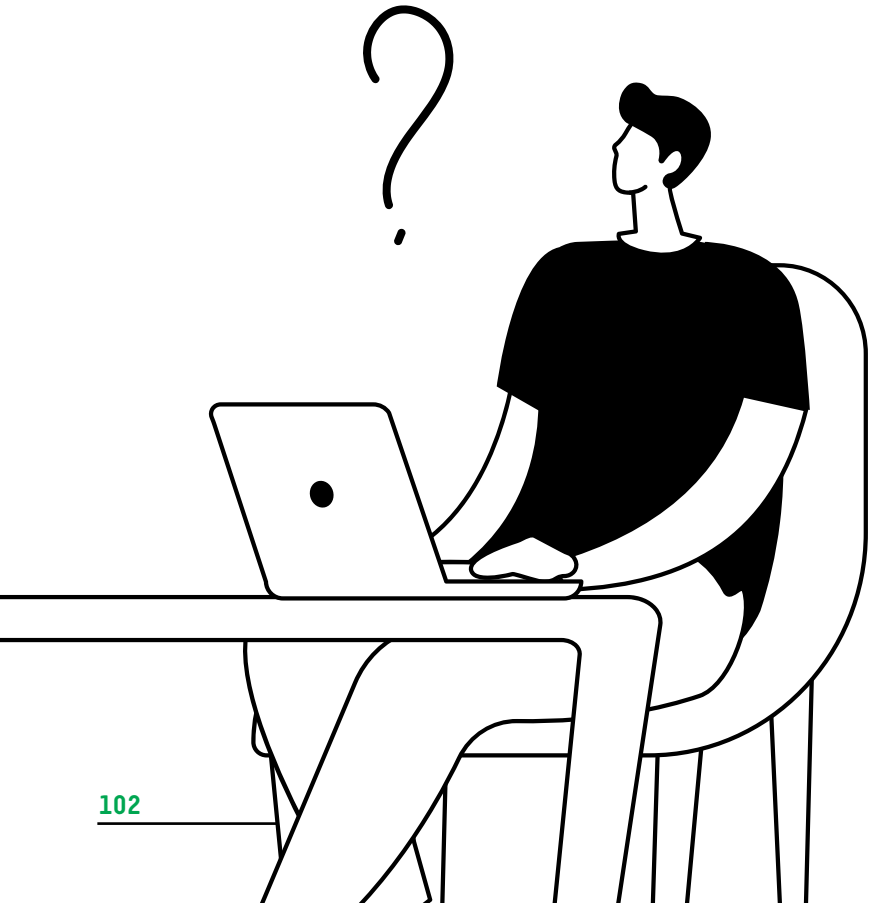
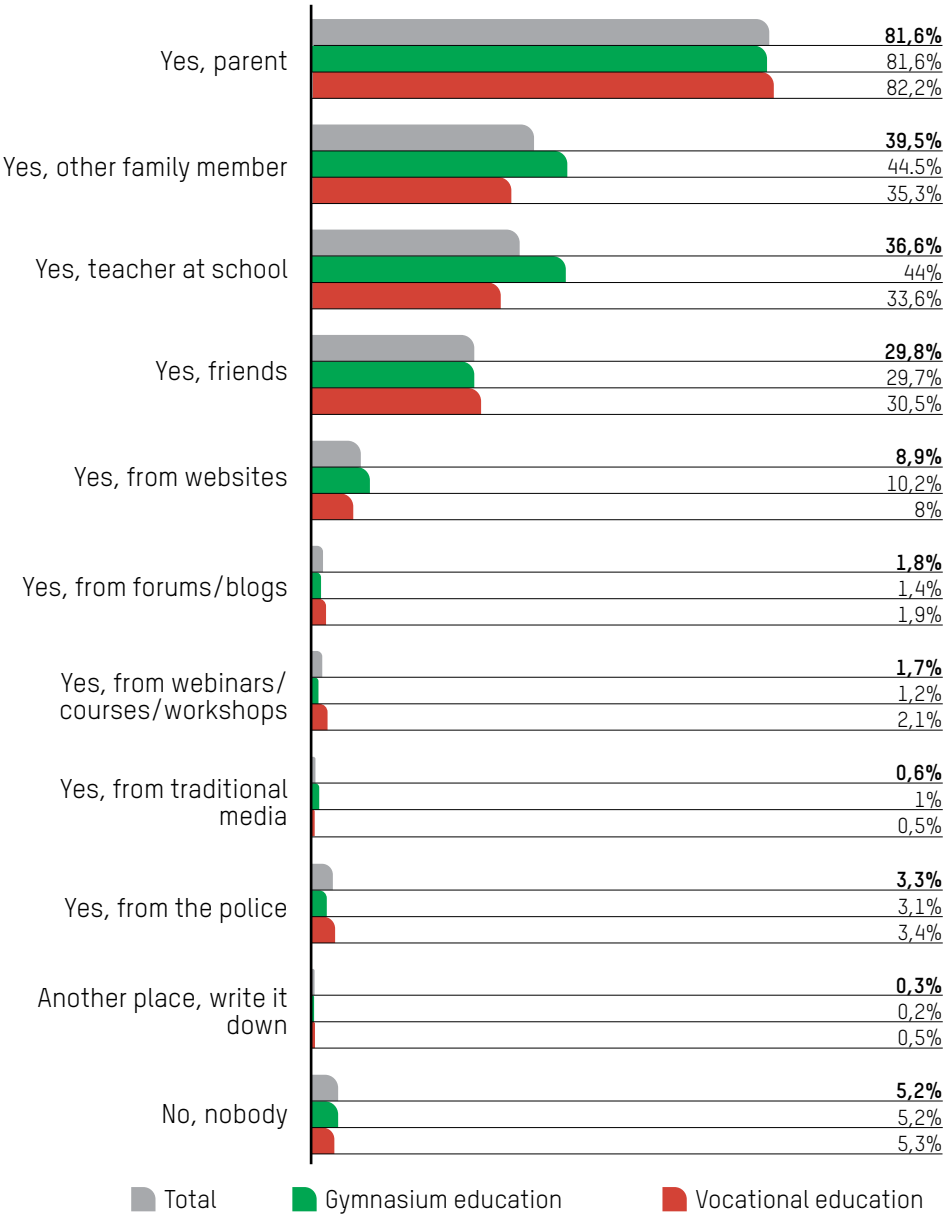


Figure 38.

Has anyone given you information or advice on how to stay safe while on the Internet?

Multiple answers are possible



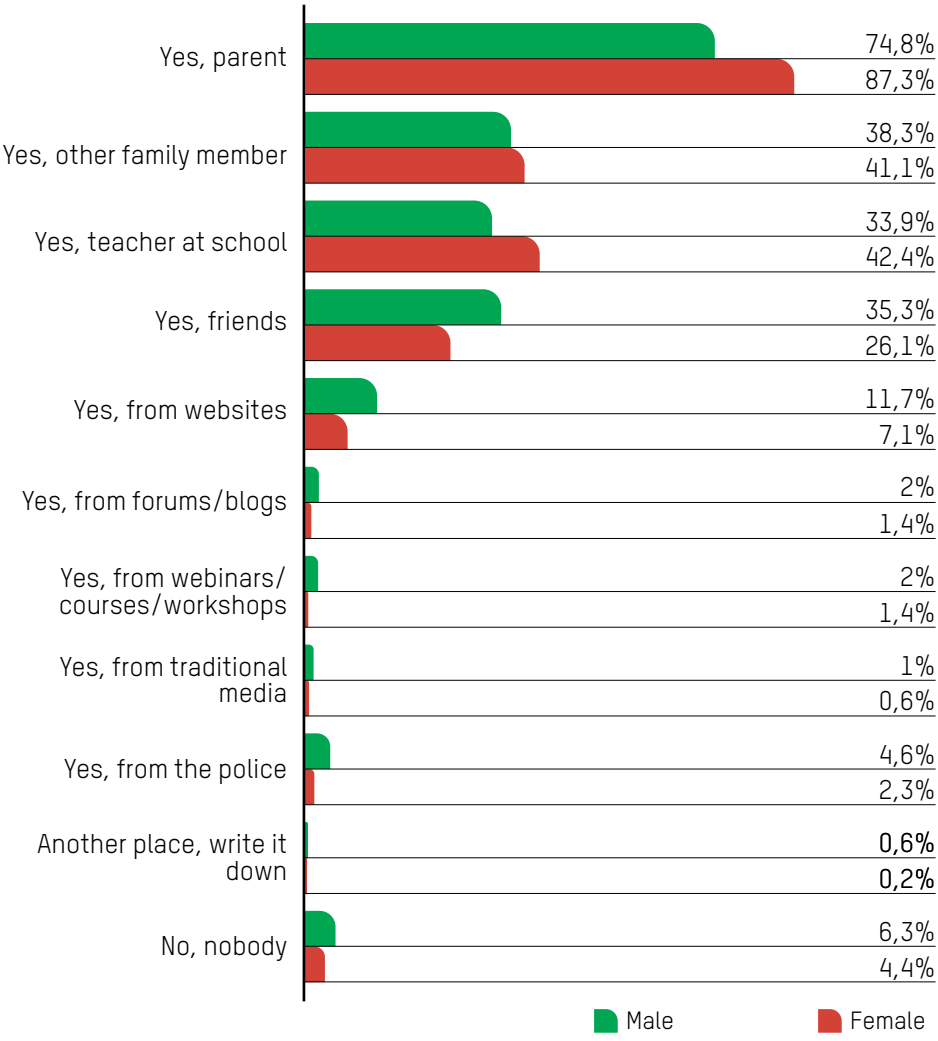
A higher percentage of female respondents stated that they have received information or advice from a parent about how to be safe while on the Internet, compared to male respondents (Figure 38.1).

Figure 38.1.

Has anyone given you information or advice on how to stay safe while on the Internet?

Multiple answers possible;

Cross-sectional results by gender



Based on the presented results, it can be concluded that almost all students in the research have profiles on popular social media (which is an expected finding), among which Instagram leads (93.1%), followed by TikTok (87.6%), then Facebook (81.3%) and Snapchat (80.1%). A higher percentage of female students use the TikTok, compared to male students. The majority of the students (81.4% in total) are generally cautious when it comes to who can follow/see their profile, stating that only their friends/ followers (49%) are allowed to do so, that is, some of them (32.1%). Their most frequent activities on social media can mainly be summed up in daily conversations with friends/ family; listening to music/finding out information about groups and artists via streaming platforms; viewing texts, videos, photos, or other people's pages without leaving a "like" or a comment. Furthermore, a larger percentage of them (72.6% in total) are aware that someone can pretend to be their peer in order to get to know them. A little less of them (69.2%) consider that on social media people often harass other people, as well as that on social media people often send offensive messages (68.1%). Two-thirds of the students are self-critical and aware that they spend too much time on social media, but based on the data obtained it seems that this is not a powerful enough motivator to change their behavior by reducing the time spent online and redirecting their attention to something else. The data is also indicative that 28.7% of the students do not worry about any of the above and that 30.2% of them do not agree with the statement that someone can upload their photos on their own profile without their consent. A higher percentage of them (63.3%) would share photos of their family or other minor family members. Such findings indicate that not so few students either do not have enough knowledge about the dangers of misuse of personal data by cyber-predators and security violations in the Internet space, or they think that such a thing cannot happen to them, or they are completely uninterested about these topics.

A large majority of them share photos of their vacations, going out with friends on social media, but they would also never share their home addresses, email addresses, and phone numbers. A large number of them would not even share information about how they feel. A

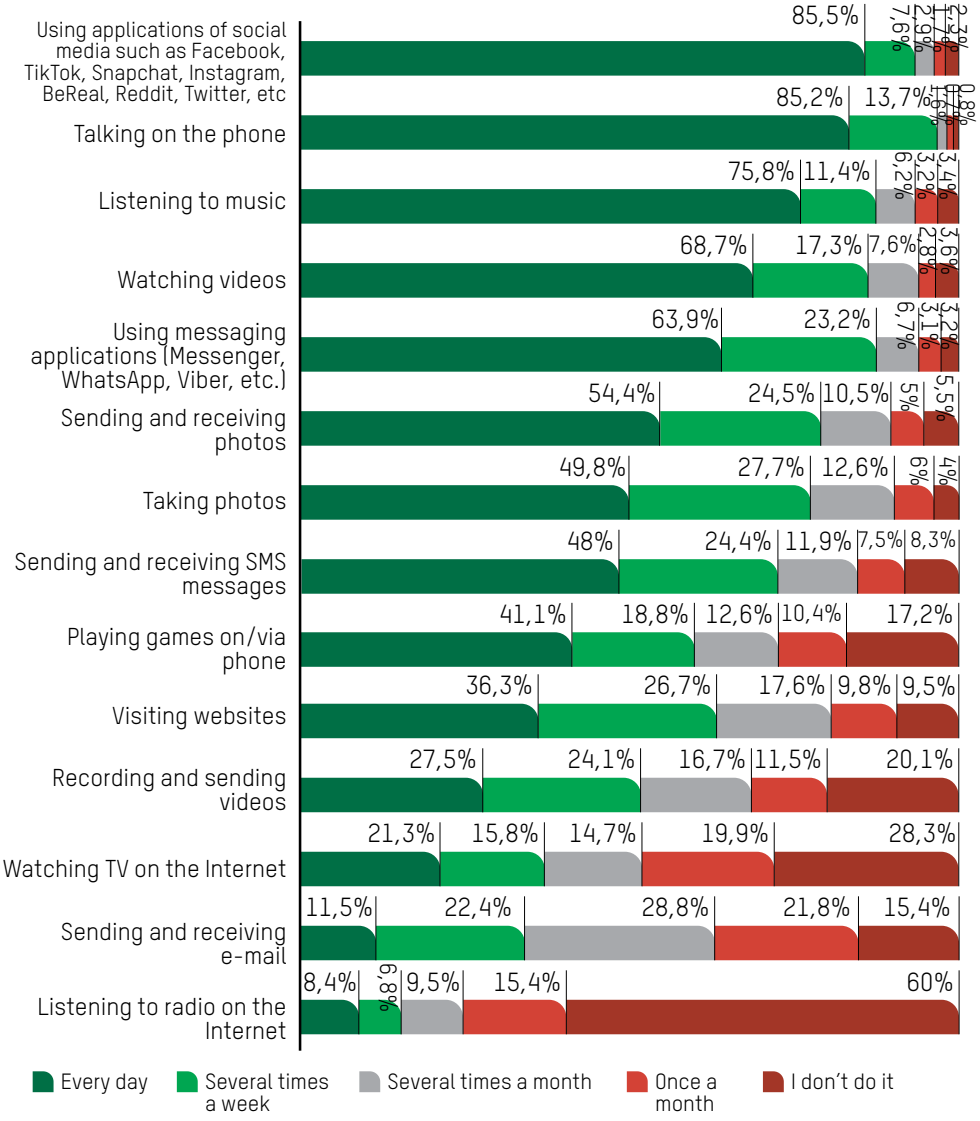
higher percentage of male students would have no problem sharing public information about what they are doing, compared to female students. When it comes to facing negative content online, a higher is the percentage of those who report that they would ignore it or block the person who shared it. Within this context, the finding indicating that only 1.6% of them do not know what they would do in such a situation is encouraging. The role of parents in advising students how to maintain safety in the Internet space is very large, which can be seen by the high percentage (81.6%) of answers that point to them as the main source of information. This is more pronounced among female students. Next in influence are another family member, teachers and peers. Among gymnasium students, information about Internet safety in a greater number of cases came from another family member and from a school teacher, compared to secondary vocational school students.

4. Mobile phone

In the contemporary digital world, it is becoming clear that mobile phones are not only technological devices, but also an essential part of the daily life of secondary school students. Therefore, it was necessary to determine the activities in which students use their mobile phones and by what frequency (Figure 39). A large majority (85.5%) of them use social media applications every day. It is interesting that talking on the phone, the original purpose of the phone, as a daily activity, is in the second place, this was indicated by 83.3% of the students as something they do every day on the phone, which is certainly a large majority, which should be complemented by 13.7% of the respondents who do it several times a week. In third place, students mentioned listening to music on the phone, with a high percentage of them doing this daily (75.8%). Seven out of ten students (68.7%) watch videos on their mobile phones every day, followed by the use of direct messaging applications (63.9%).

Figure 39.

How often do you do the following activities on your mobile phone?

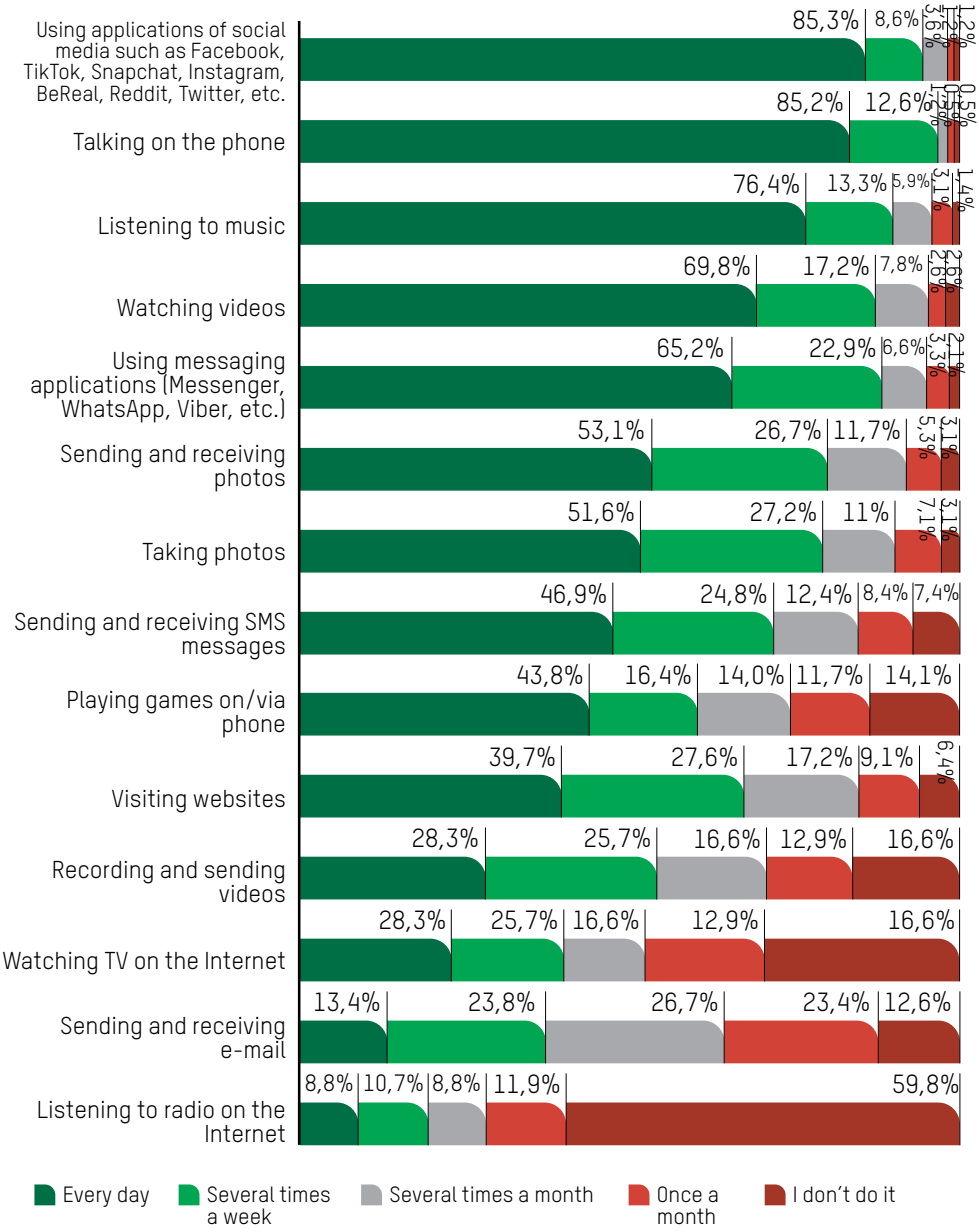


The mobile phone is also often used for taking/sharing photos. Thus, 54.4% of the students send or receive photos daily, and 24.5% of them do so several times a week, whereas 49.8% of them are photographed daily, and 27.7% of them several times a week. Phones are also often used for SMS messages, 48% - daily and 24.4% - several times a week; as well as for playing games, 41.1% of them play daily, and 18.8% of them play several times a week. The total percentage of those who often go to web pages via mobile is similar – a total of 63% of which 36.3% daily, and 26.7% several times a week. More than half of them (52% in total) often record and send videos via their mobile phones, 27.5% every day, and 24.1% several times a week.

Figure 39.1.

How often do you do the following activities on your mobile phone?

Cross-sectional results – Gymnasium education

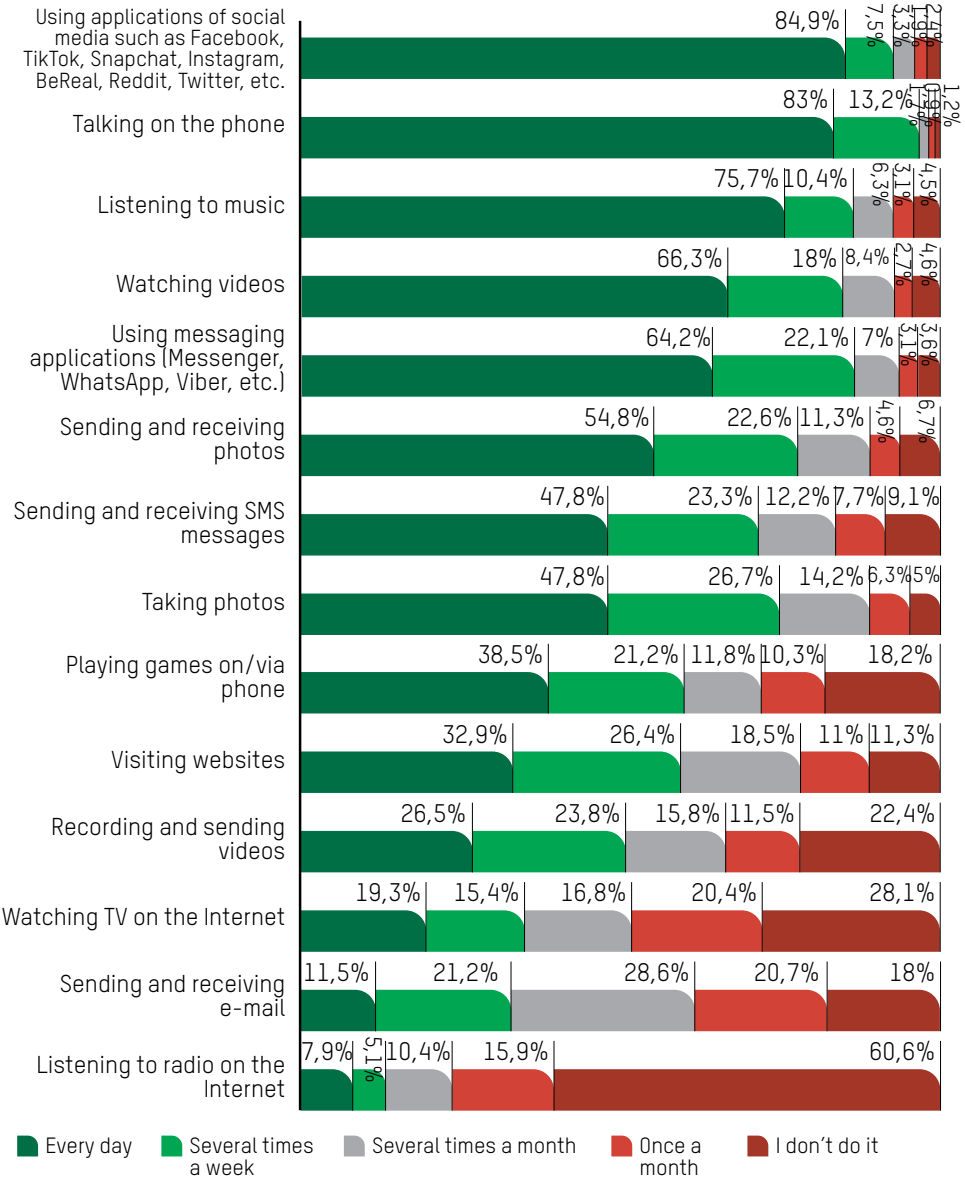


In regard to this question, no significant statistical differences were observed between gymnasium and vocational education (Figures 39.1 and 39.2).

Figure 39.2.

How often do you do the following activities on your mobile phone?

Cross-sectional results – Vocational education



As concluded in the previous segments, almost all students that have taken part in this research have their own mobile phone. A large majority of them use their phones to access social media, conversation, listen to music, as well as take/share photos, that is, record and send videos. It would be interesting to investigate in more detail the content of the videos they send and receive, for the reasons that, despite the fact that technology provides many benefits, in cases of cyberbullying, the same technology is the main medium used to send SMS messages, videos or photos that may include provocation/violent content or be compromising for the purpose of intimidation, extortion and threats.

5. General information and use of electronic equipment

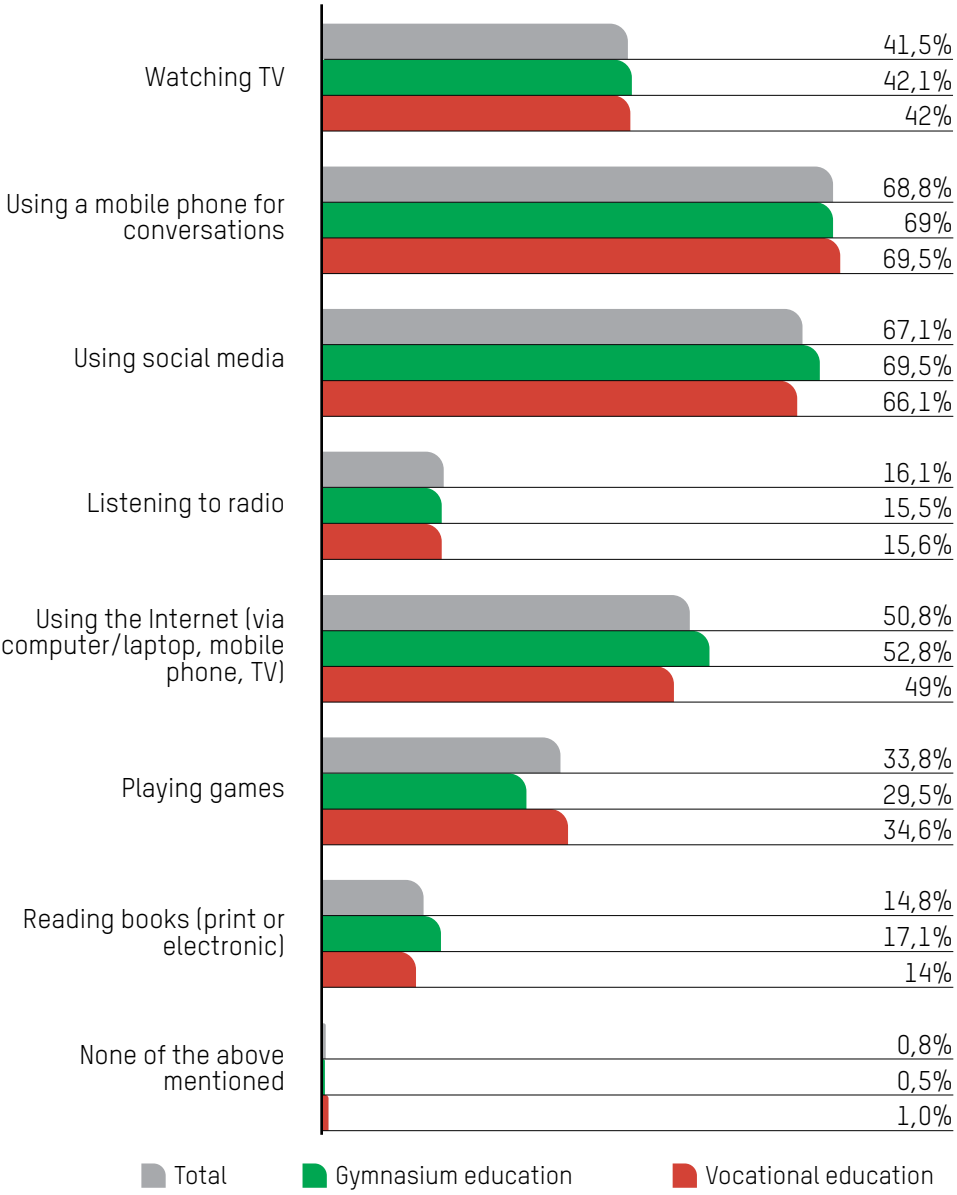
The last theme of the research places the emphasis on the activities that the students would miss the most if they could not do them during a week, as well as on the use of different types of electronic equipment.

Of the activities they would miss the most (Figure 40), the students single out the mobile phone for conversations (68.8%) and the use of social media (67.1%), whereas half of the students would also miss the use of the Internet (50.8%). The answers that they would miss watching TV, 41.5%, and playing games, 33.8%, have a more significant representation.

In regard to this question, no significant statistical differences were observed between gymnasium and vocational education.

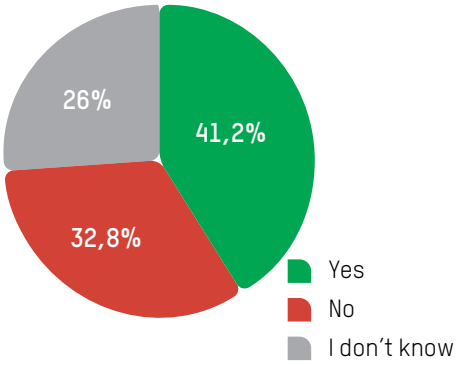
Figure 40.

Which three of the listed activities would you miss the most if you could not do during a week? *Up to three answers are possible*



When asked: "Do you receive enough information at school about the use of media and what media content actually means", four out of ten students (41.2%) consider that they receive enough information at school, whereas 32.8% of them disagree with this, and 26% of them are not sure (Figure 41).

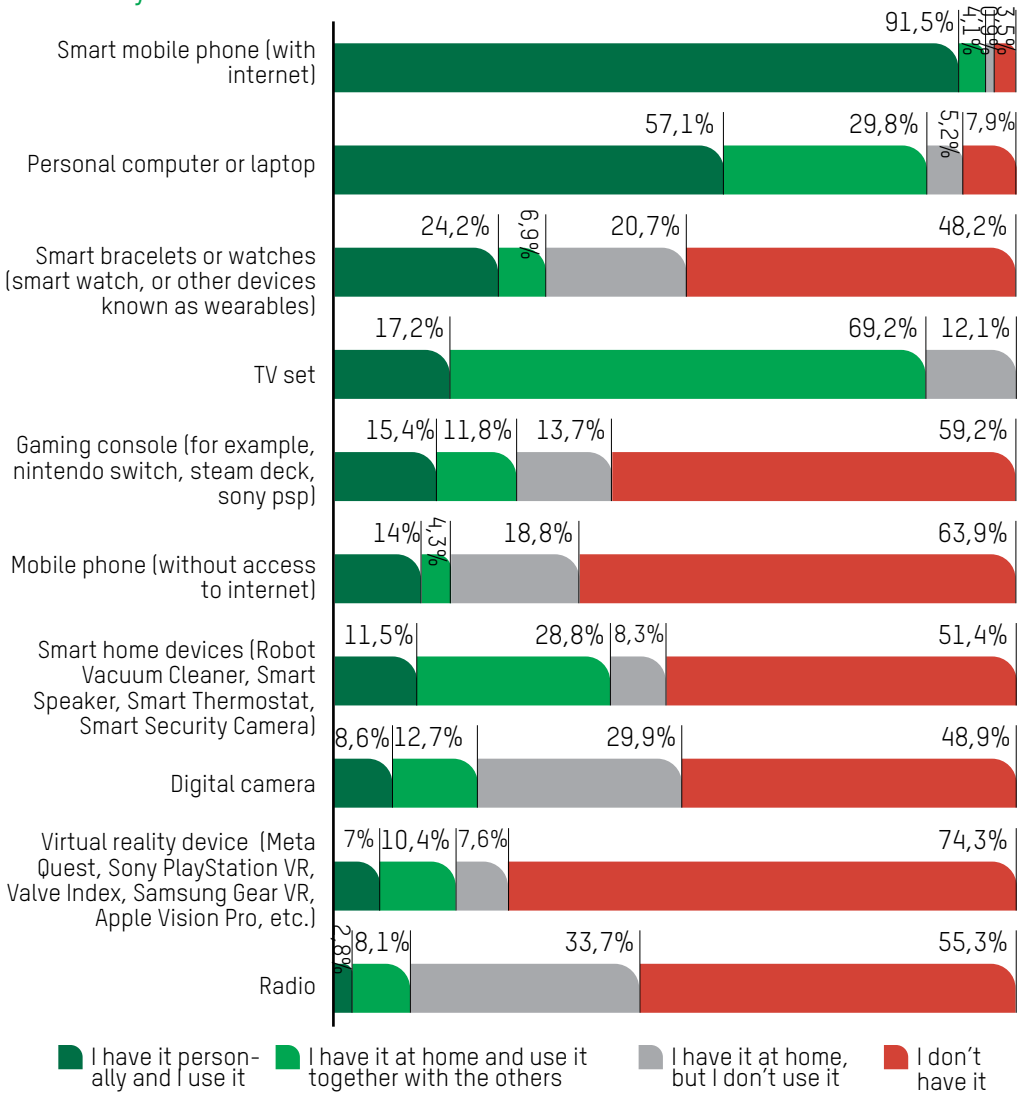
Figure 41.
Do you receive enough information at school about the use of media and what media content actually means?



When asked the last question, which refers to the possession of electronic equipment, the data show a high level of possession and use of smartphones by students (91.5%). Furthermore, a significant number of the students (57.1%) have and use personal computers or laptops, followed by another 29.8% who use their home computer or laptop (Figure 42). Most of the students do not have a virtual reality device in their home (74.3%), slightly less than two-thirds of them (63.9%) do not have a mobile phone without access to the Internet, followed by gaming consoles, 59.2%.

Figure 42.

What electronic equipment of different types do you have at home, and do you use it or not?

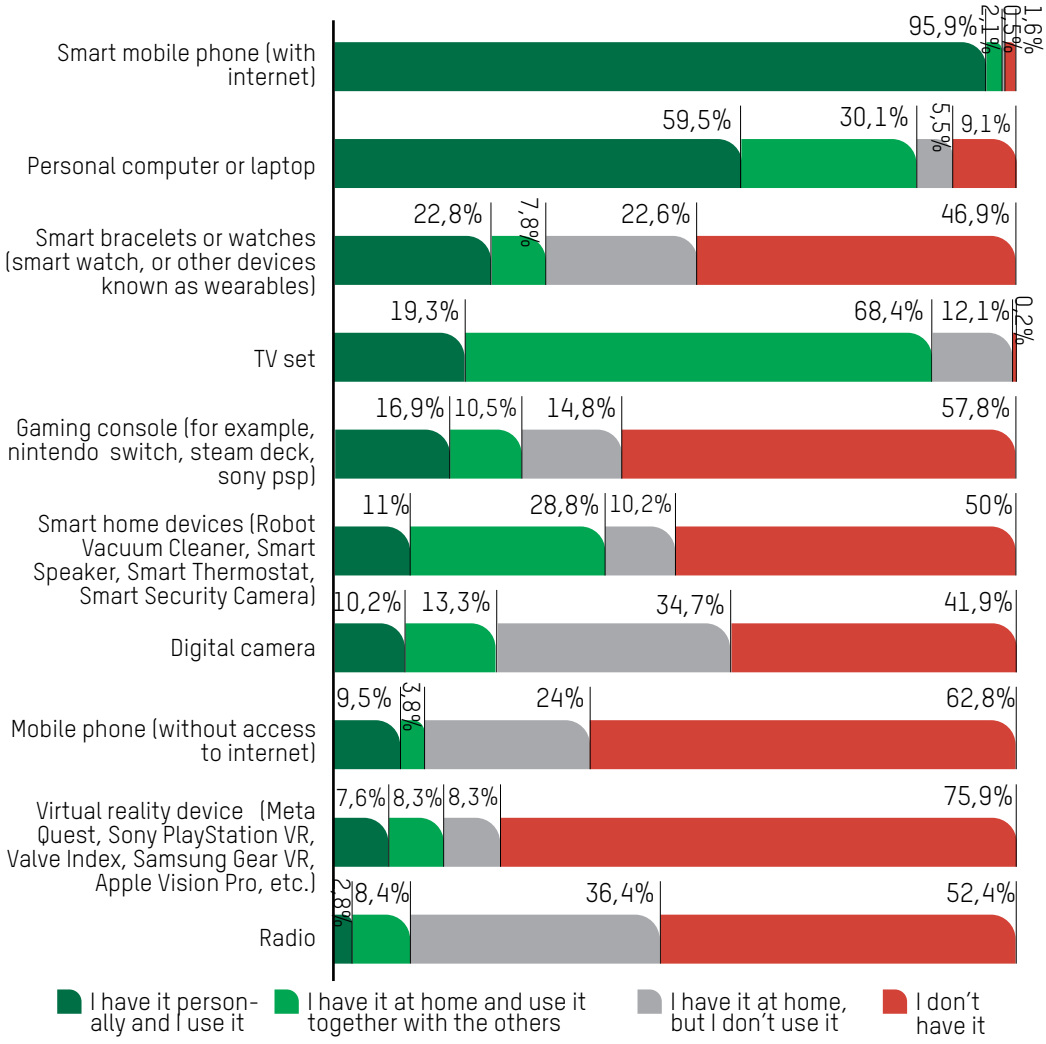


It is interesting to note the data that 55.3% of the respondents do not have a radio, one-third of them (33.7%) have it at home, but do not use it, and only a total of 10.9% of them use it regardless of whether the device is their own or of the household. Also, half of them (51.4%)

do not have smart home devices, but 41% do have them – fewer of them are personal (11.5%), and more of them have such devices in the home (28.8%). About half of them (48.9%) also do not have a digital camera (as a separate device, not on the mobile phone.)

Figure 42.1.

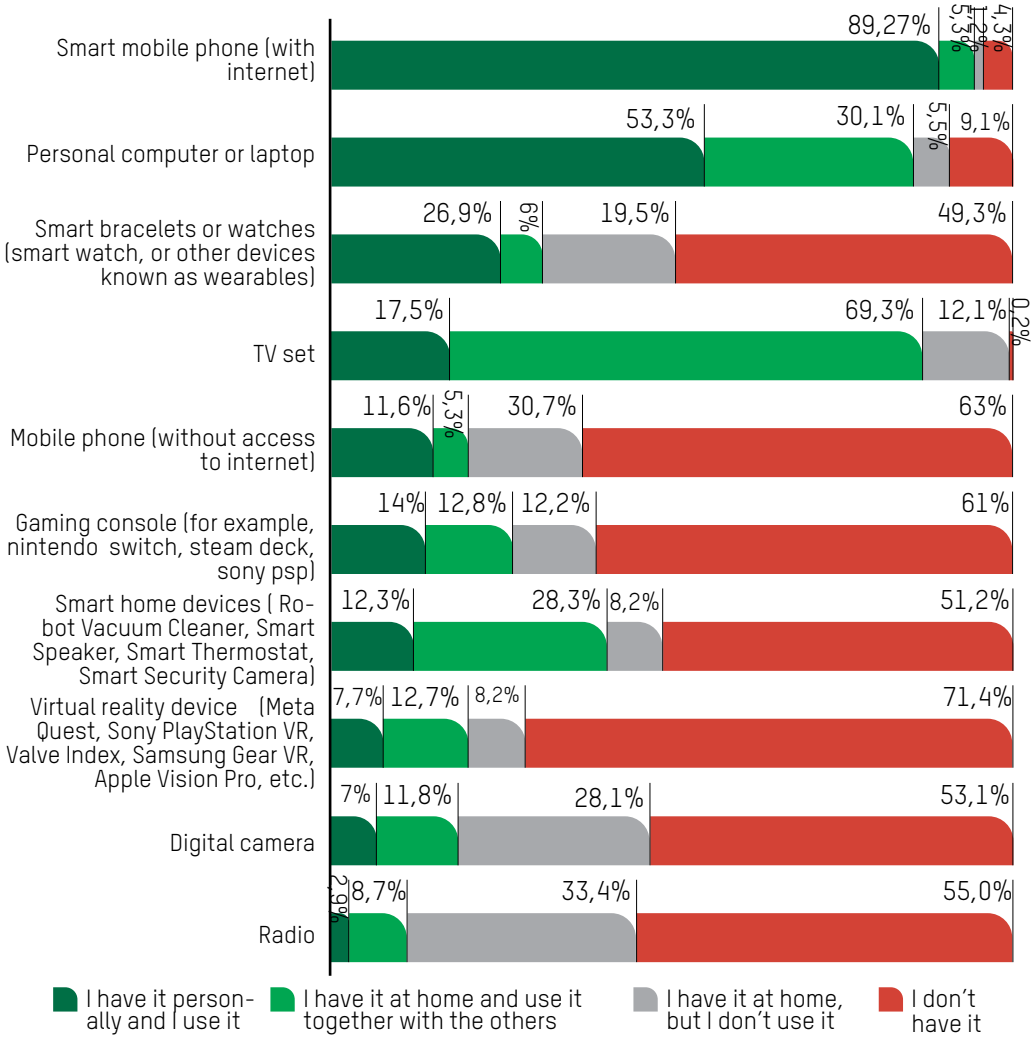
What electronic equipment of different types do you have at home, and do you use it or not? Cross-sectional results – Gymnasium education



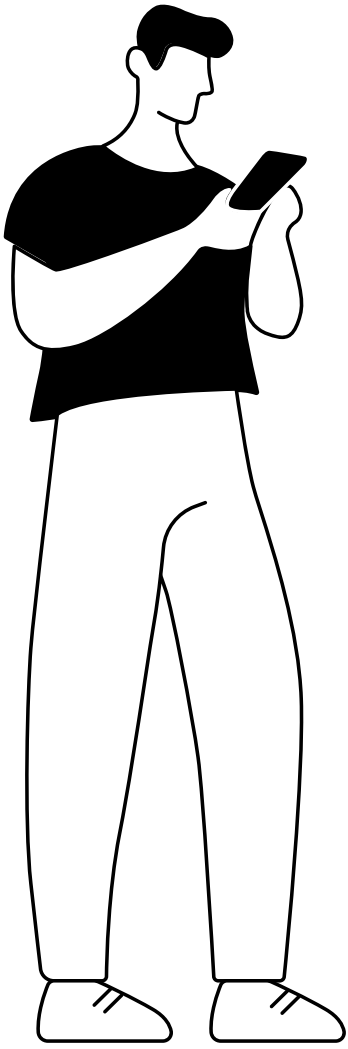
In regard to this question, with the exception of owning a smart mobile phone - which is more prevalent among gymnasium students, no significant statistical differences were observed in regard to other types of electronic equipment between gymnasium and vocational education students (Figures 42.1 and 42.2).

Figure 42.2.

What electronic equipment of different types do you have at home, and do you use it or not? Cross-sectional results – Vocational education



The answers to the question of which activities they would miss the most are in line with the findings about the possession of mobile phones and the frequency of their use (91.5%). Hence, it is expected that they would miss them the most (for conversations, using social media, the Internet, watching TV and playing games). Also, the majority of the students have other electronic devices at their disposal, such as a personal/home computer and a laptop. Of particular importance is the finding that 41.2% of them consider that they receive enough information at school about the use of media and what media content actually means, but also 32.8% of them disagree with this and 26% of them are not sure. Hence, this is an important indicator that more attention should be paid to these topics within the framework of teaching in secondary education.



Research conclusions

Television

Internet

Social media

Recommendations

(5)

CONCLUSIONS AND ECOMMENDATIONS

Research conclusions

Mobile (smart) phones are by far the most frequently used devices among students. The research has confirmed that mobile phones play a significant role in everyday lives of the secondary school students, by high use of the devices for phone conversations, social media applications and use of the Internet in general.

Even though, according to the data, there is significant awareness of the role/influence that algorithms have on the information/content they encounter online, yet a significant importance is attached to the finding that 41.2% of the students consider that they receive enough information at school about the use of media and what media content actually means, but a significant 32.8% of them disagree and 26% of them are unsure about this. This is an important indicator that more attention should be paid to these topics within the framework of teaching in secondary education.

In addition to formal education, the role of parents and teachers as sources of information about safe use of the Internet is also very significant. The influence of parents in advising children how to keep safe in the Internet space is great, which can be observed by the high percentage (81.6%) of answers that point to them as the main source of information. Next in influence are another family member, teachers and peers. Gymnasiums students have received information about Internet safety in a greater number of cases from another family member and from a school teacher, compared to secondary vocational school students. These data simultaneously emphasize the need for constant dialogue and responsible cooperation among schools, families and the community as a whole to ensure that young people are equipped with the skills needed to use digital technologies safely and responsibly.

The analysis of critical thinking and media literacy among secondary school students reveals a certain level of awareness and knowledge among students in regard to digital privacy and security. A large majority of the students (87.2%) have answered that they are willing to undertake preliminary checks before allowing applications to access their personal data and this is an indication

of a certain degree of understanding of the potential risks that the Internet brings and the importance of protection of their own privacy. However, if students' answers to some of the other sets of questions are taken into account, one gets a different impression. The inconsistency between the knowledge of what should/shouldn't be done (declaratively) and how students behave in reality is also visible in the answers to the block of questions about the use of social media (e.g. Instagram, TikTok, Snapchat, etc.) and their popularity with this age group. Hence, the previously reported high 87.2% should be taken with some reservation, for the reason that it is likely due to a tendency to give socially desirable responding. In fact, it is likely that a higher percentage of those students do not pay much attention to what personal data of theirs the application might have access to, but install it for various reasons (e.g. because it is popular, most of their peers use it, increases their visibility and popularity among peers, etc.).

One of the most significant challenges discovered by this research is the lack of skills among students to verify information and content on the Internet, specifically techniques and tools for verifying the origin of photos posted on the Internet. Additionally, even though the majority of the students have a basic understanding of the differences between disinformation and misinformation, yet, deeper knowledge and skills are needed to identify and understand these phenomena in practice, in particular on the Internet where they spend a significant amount of time every day.

Students have a general understanding of different forms of media advertising, including product placements in programs, although there is a difference in perceptions between students from different types of schools. At the same time, the answers to the questions in regard to their reactions to shocking information indicate that the majority of the students would verify the reliability of the information before reacting. However, the fact that a significant number of them would share such a post with their friends indicates the need for more education about the responsible use of social media and the potential consequences of sharing sensational content.

Even though there is a high percentage of the students who have detected true and false answers to

the offered statements in regard to social media, a not so small number of the students do approach social media in a worryingly naive (or disinterested) manner, which again points to the need for acquiring additional knowledge and further building of their critical view and strengthening digital and media literacy.

Lastly, it is important to note that the students believe, that is, they agree with the statement that people tend to seek information that confirms their own beliefs. This indicates a potential exposure to the echo chamber effect[19] – an environment where people are only exposed to opinions or information that support or reinforce their existing views, without encountering different and/or opposing perspectives/views/content. This effect is particularly prominent on social media and Internet platforms, where algorithms often filter the information that is presented to users – a point that most students are aware of. What is critical for the students is an understanding of the implications of the effect where content is rotated in a closed circle, without significant exposure to different or opposing views, which can ultimately result in opinion formation via information "serving" by algorithms.

Television

The perceptions and behaviors of secondary school students towards television show that it still plays a significant role in their lives, even though the way they use and experience it has been gradually changing. The analysis of the perceptions and behaviors of secondary school students towards television as a medium reveals significant trends and changes in the way young people experience and use this traditional source of information and entertainment. This is mostly reflected in the research

19 According to the definition in the Media Literacy Dictionary, echo chamber is a state that is created under the influence of computer-programmed algorithms which determine the information we receive. This process is closely related to our online activities, searches on the Internet and is a type of automated personalization of information. Echo chamber conceptually represents an information bubble which denotes a closed system of information communication which can prevent the user of media content from being exposed to several different points of views on the same topic. In this way, personal convictions and views are strengthened (https://recnik.medium.edu.mk/termin/eho-komora/

results, whereby a significant number of the students (23%) consider the possibility of watching on-demand programs as the main meaning of the term "watching TV".

Students watch TV daily (even though shorter during the work week), and the duration of viewing increases on the weekend, when 28.8% of them watch TV for more than 3 hours a day. In the first place, students watch sports matches (38.5%), then feature movies (36.5%), then comedy shows (33.3%). According to most of them, there are too many advertisements, news and debate shows on TV and not enough programs that they like. When it comes to documentary TV programs, students generally feel that they present true facts about events. They have a similar view towards TV news/daily news programs. The evaluations are divided about the excessive presence of programs with violence, thus there are approximately the same number of those who disagree with this statement and those who have a neutral view. A slightly smaller number of the students agree that there are too many such programs on TV. The answers are almost evenly distributed in regard to the view that there are many important positive events in life, but only the negative ones are reported in the TV news. In regard to the reality shows that are broadcast on TV, a not so small percentage (27.6%) of them consider that they show the events as they are, whereas 36.5% of them think that this is not the case. 39.9% of the students have a neutral view on this issue. These findings become indicative when analyzed together with the use of the Internet and social media.

Internet

Compared to watching TV during the work week, students are significantly more and longer in the Internet space. This difference is even greater on the weekend, when a large number of the students. (57.9%) actively use the Internet for more than 5 hours a day, and the percentage of those who are actively online from 3 to 5 hours a day is not small either (27.6%). When they are online, they spend most of their time on social media (89% - every day) and listening to music (72.6% - every day). Other activities for which students often use the Internet are: accessing Skype, WhatsApp, Messenger, Telegram, then searching for information needed for school, as well as watching TV programs, videos and movies. The majority of

the students (62.8%) never listen to radio on the Internet.

More than half of the students (62% to be precise) watch TikTok videos, followed by short videos (reels) on Instagram (46%), music (39%) and short videos (shorts) on YouTube (31%). A smaller number of the students show skepticism towards the truth of the content posted on social media. Unlike them, almost half of the students consider that the content is true (3.3% - completely true, 42.6% - somewhat true). In order to gain more detailed insight into the potential positive or negative impact of the indicated social media, it is necessary to further investigate the content of the videos and posts that students view through these applications.

In regard to the activities that students like or do not like to do on the Internet, the majority of the students (64.1%) have uploaded photos on a website or social medium, 41.6% have uploaded a photo to which they have added filters and edited it (additional 11.3% of them would like to do so) and 37.1% of them would not like to do it. 40.8% of them would not like to make a short video and post it on a website/social medium, but 38% of them have done it, and another 9.6% of them would like to do it. The situation is similar with going live on Facebook, YouTube, Instagram, etc. - about 44.5% of them would not like to do it, but 37.1% of them have done it, and 8.7% of them would like to do it. Also, 40.7% of them would not like to write a text and post it on a website/social medium, but 23.8% of them have already done it, and 19% of them would like to do it. A total of 49.5% of them have either already made a mime or a gif (29.6%), or would like to do so (19.9%), whereas 32.4% of them would not like to do so, and 18.1% of them stated that they do not know whether or not they would like to make a mime or a gif.

Students' views toward the Internet show that they feel comfortable using it as a tool for learning and entertainment, even though there are some concerns about security and privacy on the Internet. Many of them believe they have the necessary knowledge to stay safe online, but there is still a significant number of them who express uncertainty or a lack of such knowledge. It is interesting that even though the students participate in large numbers in various online activities, there is expressed skepticism towards the

positive effects of social media on their mental health and social skills, by a significant number of them who believe that the communication on the Internet is no substitute for real interpersonal relationships.

Students also spend considerable time playing games. In their answers, they single out shooting games (FPS and TPS) in the first place, which they often play in total of 38% - 20.5% - every day and 16.6% - several times a week, but contrary to this, 41.5% of the respondents never play such games, and 12% of them play once a month. In regard to intensity, the second place is taken by sports games and simulators, such as FIFA, NBA2K, Need for Speed (16.9% - every day, and 14.3% - several times a week), whereas 43.4% of them never play them (12.3% - once a month).

In regard to frequency, on a school day, 39.8% of the students play games for up to 3 hours, 31% of them play from 3 to 5 hours and almost as many more than 5 hours (29.2%). On the weekend, a huge percentage of the students (85.5% in total) play for more than 3 hours a day (57.9% - more than 5 hours). If these data are followed by the previously reported findings about the time spent on social networks and in front of the TV during the weekends (even during the working week), it becomes very worrying about the degree of screen time and media content exposure of the students that is often not for educational purposes. The fact that students are so frequent and intensive in the Internet space does not automatically imply that they know everything about digital communication and that they have developed media literacy. On the weekend, a huge percentage of the students (85.5% in total) play for more than 3 hours a day (57.9% - more than 5 hours). If these data are complemented by the previously reported findings about the time spent on social media and in front of the TV on the weekend (even during the working week), it becomes very worrying about the degree of the screen time and media content exposure of the students that is often not for educational purposes. The fact that they are so frequent and intensive in the Internet space, however, does not imply that they by default know everything about digital communication and that they have developed media literacy.

Social media

The analysis of the use of social media by secondary school students reveals that they are already an integral part of their everyday life. Almost all students in the research have profiles on popular social media, among which Instagram leads (93.1%), followed by TikTok (87.6%), then Facebook (81.3%) and Snapchat (80.1%). The massive presence of popular social media among students is expected, but it also speaks of the importance these platforms have in their communication, socialization and access to information. The result showing that the majority of the students are generally cautious about who can track and view/open their profiles indicates an existing awareness of privacy and security on the Internet. Along these lines, a large percentage of them (72.6% in total) are aware that someone can pretend to be their peer in order to get to know them. A little less of them (69.2%) consider that on social media people often harass other people, as well as that on social media people often send offensive messages (68.1%). It is interesting to note that, while two-thirds of the students are self-critical and aware that they spend too much time on social media, based on the obtained data it seems that this is not a powerful enough motivator for them to change their behavior by reducing the time spent online and diverting attention to something else. This highlights even more the need for enhanced education and awareness raising for safe and moderate use of these platforms.

Sharing personal photos and moments from everyday life is an essential activity on social media for many students, which emphasizes their social aspect. A large majority of them share photos of their vacations, going out with friends on social media, but they would also never share their home addresses, email addresses and phone numbers publicly. A large number of them would not even share information about how they feel. Compared to female students, a higher percentage of male students would publicly share information about what they are doing without a problem.

The answers of the students in regard to facing negative content on the Internet show that in addition to ignoring as the most common reaction, they would respond to this content by blocking users or stop following the person who shared such con-

tent. This is somewhat encouraging data because it shows that students are not completely indifferent to the negativity they may encounter on the Internet.

Recommendations

1. To develop a media literacy framework for secondary education, as there is one for primary education, which will achieve continuity in development of critical thinking and upgrading of media literacy across the two educational subsystems. It should take into account the prior knowledge of the students, developmental characteristics of this age period, degree of their cognitive and socio-emotional development, latest knowledge about the critical thinking development strategies, as well as about creation of teaching activities that would encourage specific skills by which the students' media literacy would improve.

2. Taking into account the high exposure of the students to social media, and yet at times insufficient knowledge of ways to verify if a certain photo is fake, then the relatively high percentage of those who do not read the Terms of Use before installing a certain application, insufficiently high percentage of recognition of hate speech, belief in the truthfulness of information that can be accessed via various media, etc., it is necessary to introduce additional content (lectures, trainings) on cyber-security in order to reduce the risks of various forms of misuse of personal data and privacy, online violence, etc. This is all the more so because, for example, a high percentage of the students upload their photos (from vacations, going out with friends, from their families) on the Internet, and one of the basic rules is that everything that is uploaded once on the Internet stays there forever (even when deleted). Hence, it is essential that they really understand the danger of inappropriate or reckless use of the Internet (not just knowing it declaratively) and even more – how to effectively protect themselves while online (in regard to the total percentage of the students, not only a certain percentage of them, as it may be observed in some of the answers in this research).

3. Given the increasingly frequent use of artificial intelligence by the younger generation, in possession of a large percentage of smartphones (according to the findings of this research), it is necessary to organize a series of lectures with experts in the area (e.g. university professors from FISCE), during homeroom periods and/or informatics lessons, who will introduce them to the positive and negative sides of AI and the most effective ways of using it, primarily for educational purposes. This is important, because as some of the results show, a large majority of the students (71.7% in total) consider that websites with information for learning are truthful, and that artificial intelligence generates truthful content (45.7% in total). This is not always true in practice.

4. The involvement of parents in the activities described under points 2 and 3 is extremely important, primarily because the students point to them as the primary sources of information on how to protect themselves in the Internet space. Teachers should also be involved in lectures/trainings/workshops on these topics, because they are in everyday contact with students and should have sufficient knowledge and skills to develop students' critical thinking, improve their media literacy, increase the awareness of ways to maintain the security of personal data in the Internet space, etc.

5. It is necessary to deepen the media regulation information dissemination among students, which can be achieved by including competent persons in the framework of teaching activities or by organizing workshops on specific topics related to media regulation in which they will work in groups, under the supervision of competent mentors.

6. Media and information literacy are closely related to a wider range of digital competences and skills requiring a development of a framework, both for students and teaching staff. Given that students have relatively developed digital skills for the topics covered by this research, it is necessary to focus on upgrading the critical thinking of the content they encounter on social media, as well as on the advanced use of the Internet. In this direction, hackathons can be organized on various relevant topics, where by cooperation and group activity, students will learn from each

other, by the help of their mentors, and will create innovative solutions for the topic of interest.

7. Encouraging the critical thinking development (which is closely related to media literacy) among students in secondary education should follow the development lines of formal operations and complex forms of thinking such as combinatorial, probabilistic, experimental, formal-conceptual and hypothetical- the deductive thinking. In that direction, it is necessary to create activities that will provide students with metacognitive reflection, by which they can reflect on their ideas, compare different ideas, assess their validity and make a choice of the best among those that are at their disposal. In this way, a deepening of the understanding of one's own ideas will be achieved and the ability to articulate personal beliefs and thoughts will increase. Also, critical thinking can be developed by solving practical problem-situations, in which students will have to select the strongest arguments and reason logically, in order to reach the best possible solution. Furthermore, it is necessary to use functional knowledge (and not only factual knowledge) as much as possible, which is achieved by research, presenting findings, evidence and explanations for the idea being researched, by asking open-ended questions in discussions that leave space for adolescents to express their thoughts and to focus more on devising the answers before answering, instead on giving the correct answer to the question asked.

(6)

ANNEX I - Demographics

Key characteristics of the respondents in the sample

List of secondary schools based on language of instruction and tatistical regions

Table 4.
Key characteristics of the respondents in the sample

Demographic data	N=884	Gymnasium (Base 580)	Vocational (Base 584)
Type of school			
Gymnasium	**33,9%**		
Vocational	**66,1%**		
Which year are you in?			
First year	**50,3%**	49,3%	51,0%
Second year	**49,7%**	50,7%	49,0%
Gender			
Male	**44,3%**	41,6%	45,0%
Female	**55,7%**	58,4%	55,0%
What is your language of instruction?			
Macedonian	**65,5%**	67,1%	66,3%
Albanian	**31,1%**	29,5%	30,5%
Turkish	**3,4%**	3,4%	3,3%
Age			
14 years	**5,7%**	5,9%	5,8%
15 years	**48,5%**	46,6%	49,3%
16 years	**44,9%**	47,1%	43,8%
17 years	**0,9%**	0,5%	1,0%

What language do you speak at home?			
Macedonian	**63,1%**	66,2%	63,0%
Albanian	**31,0%**	29,3%	30,5%
Turkish	**5,1%**	4,0%	5,5%
Roma	**0,0%**	0,2%	0,0%
Vlach	**0,1%**	0,2%	0,2%
Serbian	**0,2%**	0,2%	0,2%
Bosnian	**0,5%**	0,0%	0,7%
Other	**0,0%**	0,0%	0,0%
Statistical region			
Skopje	**31,4%**	34,7%	28,1%
Northeastern	**9,3%**	14,3%	4,3%
Polog	**10,7%**	6,9%	14,6%
Pelagonia	**7,5%**	8,6%	6,3%
Southeastern	**7,4%**	3,8%	11,0%
Southwestern	**17,4%**	17,2%	17,6%
Eastern	**8,6%**	7,8%	9,4%
Vardar	**7,7%**	6,7%	8,7%

Table 5.
List of secondary schools based on language of instruction and statistical regions

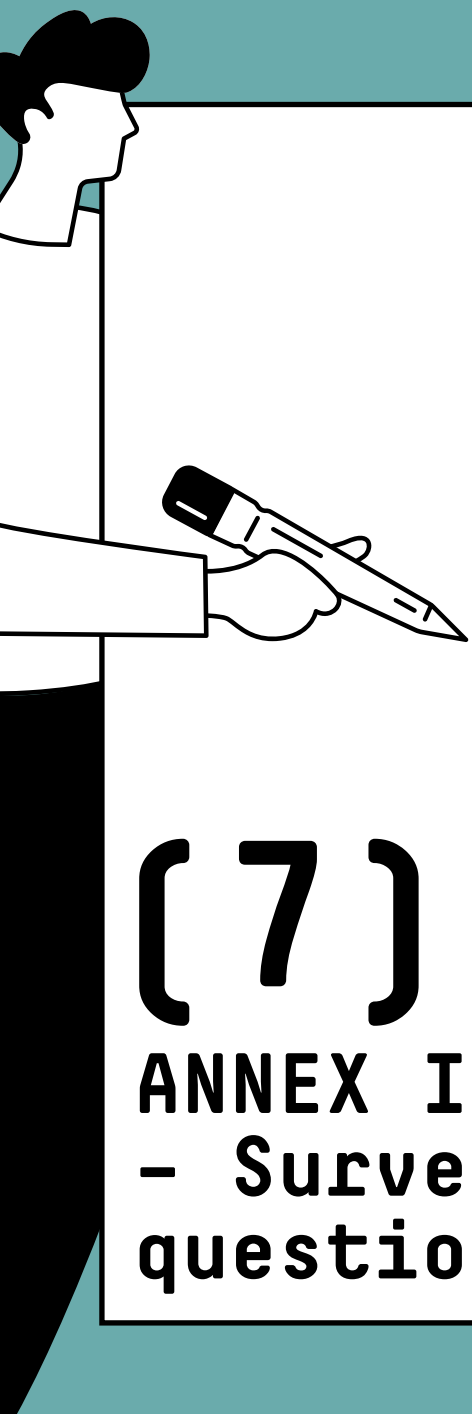
	Region	Municipality/ City of Skopje	Secondary school	Respondents (students)	
	Language of instruction - Macedonian			I year	II year
1	Skopje	City of Skopje	HSCS SUGS Gym. "Nikola Karev"	28	28
2	Skopje	City of Skopje	SUGS "Georgi Dimitrov"	25	26
3	Skopje	City of Skopje	DUFK "Metodija Mitevski Brico"	14	13
4	Northeastern	Kumanovo	SOU Gym. "Goce Delcev"	20	24
5	Vardar	Sv. Nikole	SOU "Koco Racin"	8	8
6	Vardar	Kavadarci	SOU Gym. "Dobri Daskalov"	11	11
7	Eastern	Stip	SOU "Slavco Stojmenski"	14	13
8	Eastern	Delcevo	SOU "Metodi M. Brico"	10	8
9	Southeastern	Strumica	SOU "Jane Sandanski"	10	12
10	Pelagonia	Bitola	SOU Gym. "Josip Broz Tito"	21	19

11	Pelagonia	Prilep	**SOU Gymnasium "Mirce Acev"**	16	18
12	Southwestern	Ohrid	**OSU "St. Kliment Ohridski"**	13	17
				190	197

	Region	Municipality/ City of Skopje	Secondary school	Respondents (students)	
	Language of instruction - Albanian			I year	II year
1	Skopje	City of Skopje	**SUGS Gym. "Zef Ljush Marku"**	21	26
2	Polog	Tetovo	**SOU Gym. "Kiril Pejcinovik"**	20	20
3	Southwestern	Kicevo	**OSU "Drita"**	6	7
4	Southwestern	Struga	**SOU Gym. "Dr. Ibrahim Temo"**	7	7
5	Pelagonia	Dolneni	**SOU Gymnasium "Prerodba - Rilindja"**	8	8
6	Northeastern	Kumanovo	**SOU Gym. "Sami Frasheri"**	10	11
7	Northeastern	Lipkovo	**SOU "Ismet Jashari"**	8	8
				80	87

	Region	Municipality/ City of Skopje	Secondary school	Respondents (students)	
	Language of instruction - Turkish			I year	II year
1	Skopje	City of Skopje	SUGS Gym. "Josip Broz Tito"	10	10

Note: The samples were created according to the percentage of the students enrolled in the first and second year in secondary vocational and gymnasium schools in the country, as well as the percentage representation of the students in the three languages of instruction (Macedonian, Albanian and Turkish). There is a deviation among students with Turkish language of instruction, that is, the number of the respondents has increased, because their percentage representation is not sufficient to extract quality data. There are no deviations from the sample designed for the needs of the research and the coverage of schools when conducting the survey.



Data

Critical thinking

Television

Internet

Mobile phone

General information

(7)

ANNEX II - Survey questionnaire

RESEARCH PROJECT:

Media literacy among first and second year students in secondary education

Dear Student,

This research, conducted by the Agency for Audio and Audiovisual Media Services and the "You Think" project, should help us find out how students from the first and second year in secondary education use different types of media and what they think about them. This survey is anonymous, meaning that all the answers given remain confidential and your identity will not appear anywhere. Your opinion will be used to plan activities to introduce media literacy and critical thinking in formal and non-formal education, as well as to protect young people from harmful content in audiovisual services received through TV or online.

In this research, we are interested in your opinion, so try, as much as possible, to make your answers as close as possible to what you objectively think or do. It takes **about 30 minutes** to fill out this survey.

Thank You

(Fiiled out by the surveyor)

Type of school:

A. Gymnasium

B. Vocational

1. DATA

Instruction:

For questions 1 to 5, circle the number of your answer.

I. How old are you?

1. 14
2. 15
3. 16
4. 17

II. Which year are you in?

1. First year
2. Second year

III. Gender

1. Male
2. Female
3. Refuses to answer

IV. What is your language of instruction?

1. Macedonian
2. Albanian
3. Turkish

V. What language do you speak at home?

1. Macedonian
2. Albanian
3. Turkish
4. Roma
5. Vlach
6. Serbian
7. Bosnian
8. Other (write down which one):

VI. What electronic equipment of different types do you have at home, and do you use or not?

Instruction:

Choose one answer in each ROW by circling the respective number in the COLUMN with your answer. Number 1 means "I have it personally and I use it", 2 means "I have it at home and use it together with the others", 3 means "I have at home, but I don't use it" and 4 means "I don't have it".

Electronic equipment	I have it personally and I use it	I have it at home and use it together with the others	I have it at home, but I don't use it	I don't have it
1. TV set	1	2	3	4
2. Personal computer or laptop	1	2	3	4
3. Smart mobile phone (with Internet)	1	2	3	4
4. Mobile phone (without access to Internet)	1	2	3	4
5. Gaming console (for example, nintendo switch, steam deck, sony psp)	1	2	3	4
6. Radio	1	2	3	4
7. Digital camera	1	2	3	4
8. Smart bracelets or watches (smart watch, or other devices known as wearables)	1	2	3	4
9. Smart home devices (Robot Vacuum Cleaner, Smart Speaker, Smart Thermostat, Smart Security Camera)	1	2	3	4
10. Virtual reality device (Meta Quest, Sony PlayStation VR, Valve Index, Samsung Gear VR, Apple Vision Pro, etc.)	1	2	3	4

2. CRITICAL THINKING

1. Suddenly you notice a lot of photos of older people in your social media feeds, and then you realize that your friends have been using applications like FaceApp to make their faces look older. These applications require installation, access to the camera or to enter personal data. Would you give these applications access to your data, photos and videos?

Instruction: *Choose one answer by circling the number in the column with your answer.*

Yes, immediately, without thinking	1
I will first check what data the application will have access to and consider whether to install it	2
I don't think there is any danger and I will give the application access	3

2. Lately, you have been only looking at news and posts of some of your friends on social media. Why do you think this is the case?

Instruction: *Choose one answer by circling the number in the column with your answer.*

This is because they are very active on social media.	1
Social media know whose posts I like and comment on, so they show me their posts more often	2
I assume others are simply not their friends anymore or I've stopped followed them on social media	3

3. Your friend sent you a link with the following message, Wow, I could never imagine you could do this. There are even photos. What is your reaction?

Instruction: *Choose one answer by circling the number in the column with your answer.*

Someone is following me! I should click these photos now!	1
I would put a sticker over the camera on my laptop and phone to protect myself	2
I should check with my friend first before clicking on the link	3
It must be some joke, I'll click the link to see	4

4. Are you familiar with some techniques and tools for verifying the origin of a photo posted on the Internet?

Instruction: *Circle the number of your number.*

1. Yes
2. No

10.1. If your answer is YES, write down which ones : _____

_____

5. Do you think it is necessary to read the Terms of Use before registering on a social medium or application?

Instruction: *Choose one answer by circling the number in the column with your answer.*

I don't have time for that. I automatically agree to the terms without reading like without reading, just like everyone else.	1
I always read these terms. I better know what I'm signing up for.	2
Why waste my time on that, I can't change them anyway.	3

6. The headline: "SHOCKING: Look what was happening yesterday in Skopje... be prepared!" (VIDEO)" is an example of:

Instruction: *Choose one answer by circling the number in the column with your answer.*

Objective informing.	1
Someone's opinion.	2
Headline - clickbait.	3
I don't know.	4

7. Which of the following elements may indicate that a social/online media profile may be a bot or a troll:

Instruction: *Choose one or more answers by circling the number in the column with your answer.*

Username contains many special symbols, uppercase letters and numbers.	1
Profile picture looks like a picture of a movie star.	2
The profile does not contain personal data.	3
There is an unusually high number of followers for a new profile.	4
All of the above mentioned.	5
None of the above mentioned.	6
I don't know what a bot is	7
I don't know what a troll is	8

8. The headline: "Fans protested in Skopje before the football match: Let's kill the "dogs"!" is an example of:

Instruction: *Choose one answer by circling the number in the column with your answer.*

Reporting on a sports event.	1
Use of hate speech.	2
Fake news.	3
I am not sure.	4

9. It is important to know the media owners, because?

Instruction: *Choose one answer by circling the number in the column with your answer.*

Ownership can influence the information the media decide to transmit.	1
It tells us who are the richest people in the country.	2
I don't think ownership has any effect on media content. Journalists are the ones who decide.	3
I am not sure	4

10. In the media, we can come across many facts, but also someone's opinions. In your opinion, which of the examples below are facts?

Instruction: *Circle the number in the column after each example that you think is a fact.*

Brazilian coffee is better than Kenyan coffee.	1
Democracy is the best form of governance.	2
World War II ended in 1945.	3
The dog is man's best friend.	4
Earth is the third planet from the Sun.	5
Macedonians are very hospitable and generous.	6

11. Which answer best explains what disinformation is:

Instruction: *Choose one answer by circling the number in the column with your answer.*

Incorrect information shared without the intention of harming.	1
Incorrect information with the intention of harming someone or lying.	2
Correct information, but shared with the intention of harming someone.	3

12. Which answer best explains what misinformation is:

Instruction: *hoose one answer by circling the number in the column with your answer.*

Incorrect information shared without the intention of harming.	1
Incorrect information with the intention of harming someone or lying.	2
Correct information, but shared with the intention of harming someone.	3

13. Which of the following media content has the purpose of convincing us of something:

Instruction: *Choose one or more answers by adequately circling the number in the column with your answer.*

Column.	1
Propaganda.	2
Advertisement.	3
All of the above mentioned.	4
None of the above mentioned.	5

14. If you come across a post on social media that is shocking and makes you angry, upset or furious, you:

Instruction: *Choose one answer by circling the number in the column with your answer.*

You would immediately share it with others on the social media.	1
You would send it only to those who are your friends.	2
You would move away from the screen and verify the reliability of the information.	3

15. Product placement, as a form of media advertising, occurs when:

Instruction: *Choose one answer by circling the number in the column with your answer.*

Viewers are invited to buy a product by calling in during a live television program.	1
Some brands or products become visible to the public during the program broadcast, being positioned to be captured by the camera.	2
Companies sell their products at a fair and invite the media to cover the event.	3

16. In your opinion, which of the following is true or false about social media?

Instruction: *Choose one true or false answer in each row*

	True	False
If we share something online, it cannot have consequences in real life.	1	2
People often seek information that is consistent with their own beliefs and views.	1	2
The information we get on social media is most often controlled by algorithms.	1	2
Journalists have and follow a code of ethics.	1	2
If the information is shared on TV, it means is always true.	1	2

3. TELEVISION

17. What does "watching TV" mean to you?

Instruction: *Choose one answer by circling the number in the column with your answer.*

Option	
1.I watch TV channels on **TV set** at the time they are broadcast	1
2. I watch TV channels on **computer or table** at the time they are broadcast	2
3. I watch TV channels **on mobile phone** at the time they are broadcast	3
4. I watch Netflix, HBO Go, Amazon Prime Video, Showtime and other on-demand programs **on TV set**	4
5. I watch Netflix, HBO Go, Amazon Prime Video, Showtime and other on-demand programs **on computer or tablet**	5
6. I watch TV, HBO Go, Amazon Prime Video, Showtime and other on-demand programs **on mobile phone**	6

18. On average, how many hours a day do you watch television programs?

Instruction: *You can give only one answer to each question in the table, by circling the respective number in the column with your answer.*

Be careful, the question in the first row refers only to a school day in the week, and the one in the second row to a day on the weekend.

Day	Less than 1 hour	from 1 hour to 3 hours a day	from 3 to 5 hours	More than 5 hours
On a school day	1	2	3	4
On the weekend	1	2	3	4

19. What do you watch most on television?

Instruction: *Choose up to three answers by circling the first choice in the first column, the second choice in the second column and the third choice in the third column.*

Content	First choice	Second choice	Third choice
1 News	1	1	1
2 Comedy shows	2	2	2
3 Documentaries	3	3	3
4 Music shows	4	4	4
5 Children shows	5	5	5
6 Educational programs	6	6	6
7 Cooking shows	7	7	7
8 Cartoons	8	8	8
9 Feature movies	9	9	9
10 Serial movies	10	10	10
11 Sports matches	11	11	11
12 Reality shows	12	12	12
13 Healthy life shows	13	13	13
14 Advertisements	14	14	14
15 Something else, *write down what:*	15	15	15
16 I don't watch television	16		

20. On a scale from 1 to 5, to what extent do you agree or disagree with the following views?

Instruction: *Choose one answer in each ROW by circling the respective number in the COLUMN with your answer. Number 1 means "Strongly disagree", 2 means "Disagree", 3 means "Neither agree nor disagree", 4 means "Agree" and 5 means "Strongly agree".*

VIEWS	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. Reality TV shows (such as "Survivor", "Naked and Afraid", "Perfect Match/Love is Blind", etc.) don't portray the event as they are.	1	2	3	4	5
2. Documentary TV programs (such as aminal programs, planet Earth, etc) show the facts about the events.	1	2	3	4	5
3. The news (such as daily news) shows the facts about the events.	1	2	3	4	5
4. There are many important positive events in life, but only the negative ones are reported on TV news.	1	2	3	4	5
5. There are too many advertisements on TV	1	2	3	4	5
6. There are too many programs with violence on TV.	1	2	3	4	5
7. There aren't enough programs on TV that I like.	1	2	3	4	5
8. There are too many news and debate shows on TV.	1	2	3	4	5

4. INTERNET

21. By what means do you usually go/access the Internet?

Instruction: *Choose one answer by circling the number in the column with your answer.*

Type of electronic equipment	
Smartphone	1
Personal computer or laptop	2
Tablet	3
TV set	4
Gaming console	5
Something else. What?	6

22. On average, how many hours a day do you actively use the Internet?

Instruction: *You can give only one answer to each question in the table, by circling the respective number in the column with your answer.*

Be careful, the question in the first row refers only to a school day in the week, and the one in the second row to a day on the weekend.

Day	Less than 1 hour	from 1 hour to 3 hours a day	From 3 to 5 hours	More than 5 hours
On school day	1	2	3	4
On the weekend	1	2	3	4

23. The table lists the activities that can be done on the Internet. Mark how often do you do each of the following:

Instruction: *Choose only one answer in each ROW by circling the respective number in the COLUMN with your answer. Number 1 means "Every day", 2 means "Several times a week", 3 means "Several times a month", 4 means "Once a month" and 5 means "Never".*

Activities	1. Every day	2. Several times a week	3. Several times a month	4. Once a month	5. Never
1. Sending or receiving email	1	2	3	4	5
2. Access to applications via social media (Facebook, TikTok, Snapchat, Instagram, BeReal, Reddit, Twitter, etc.)	1	2	3	4	5
3. Searching for information about learning at school	1	2	3	4	5
4. Using Skype, Viber, WhatsApp, Messenger, Telegram, etc.	1	2	3	4	5
5. Listening to radio on the Internet	1	2	3	4	5
6. Reading or downloading information about daily events from websites	1	2	3	4	5
7. Listening to music online	1	2	3	4	5
8. Downloading music	1	2	3	4	5
9. Watching TV programs, video, movies online	1	2	3	4	5
10. Downloading TV programs, video, movies	1	2	3	4	5
11. Visiting a website or blog/vlog	1	2	3	4	5

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Activities	1. Every day	2. Several times a week	3. Several times a month	4. Once a month	5. Never
12. Uploading content that you have created yourself (photos, videos, status...)	1	2	3	4	5
Searching ads and information about products and services	1	2	3	4	5
14. Shopping online	1	2	3	4	5
15. Downloading software	1	2	3	4	5
16. Using artificial intelligence (Chat GPT, Google Bard, etc.)	1	2	3	4	5

24. How often do you play games?

Instruction: *Choose only one answer in each ROW by circling the respective number in the COLUMN with your answer. Number 1 means "Every day", 2 means "Several times a week", 3 means "Several times a month", 4 means "Once a month" and 5 means "Never".*

Types of games	1. Every day	2. Several times a week	3. Several times a month	4. Once a month	5. Never play
1. Sandbox (Minecraft, GTA, Sims)	1	2	3	4	5
2. Strategic games (RTS) (Warcraft, Age of Empires)	1	2	3	4	5
3. Shooting games (FPS и TPS) (Counter Strike, Overwatch)	1	2	3	4	5

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4. Online multiplayer arena game (MOBA) – (Dota 2, League of Legends)	1	2	3	4	5
5. Role playing games (RPG, ARPG) – (The Witcher 3, Fallout)	1	2	3	4	5
6. Sports games and simulators (FIFA, NBA2K, Need for Speed)	1	2	3	4	5
7. Puzzles and party games (World of goo, Portal 2)	1	2	3	4	5
8. Action-adventure games (Assassin's Creed, Star Wars Jedi)	1	2	3	4	5
9. Horror games (Resident Evil, Amnesia)	1	2	3	4	5
10. Platformers (Crash Bandicoot, Cuphead)	1	2	3	4	5

25. If you play games, how many hours a day do you play?

Instruction: *You can give only one answer to each question in the table, by circling the respective number in the column with your answer.*

Be careful, the question in the first row refers only to a school day in the week, and the one in the second row to a day on the weekend.

Day	Less than 1 hour	from 1 hour to 3 hours a day	from 3 to 5 hours	More than 5 hours
On a school day	1	2	3	4
On the weekend	1	2	3	4

26. What content do you watch the most on the Internet (on social media or on websites)?

Instruction: *Choose up to three answers by circling the first choice in the first column, the second choice in the second column and the third choice in the third column.*

Content	First choice	Second choice	Third choice
Short videos (shorts) on You Tube	1	1	1
Short videos (reels) on Instagram	2	2	2
Short videos (reels) on Facebook	3	3	3
TikTok videos	4	4	4
Educational videos about nature, geography, history	5	5	5
Sports	6	6	6
Healthy life	7	7	7
Music	8	8	8
Funny videos	9	9	9
Incidents/accidents/disasters	10	10	10
Beauty and fashion	11	11	11
Videos with violence, military content	12	12	12
Movies (action, comedy, horror)	13	13	13
Serial movies	14	14	14
Animation movies	15	15	15
News	16	16	16
Food, cooking	17	17	17
Advertisements	18	18	18
Other, what? (write down)	19		

27. On a scale from 1 to 5, how true do you think is the content posted on

Instruction: *Choose one answer in each ROW by circling the respective answer in the COLUMN with your answer. Number 1 means "Completely false", 2 means "Somewhat false", 3 means "Neither true nor false", 4 means "Somewhat true" and 5 means "Completely true".*

Содржини објавени на:	Completely false	Somewhat false	Neither true nor false	Somewhat true	Completely true	I don't follow
1. Social media such as Facebook, TikTok, Snapchat, Instagram, BeReal, Reddit, Twitter, etc.	1	2	3	4	5	6
2. Websites with information about learning and scholl	1	2	3	4	5	6
3. On websites with information about daily events	1	2	3	4	5	6
4. Blog/vlog	1	2	3	4	5	6
5. Artificial intelligence (Chat GPT, Google Bard, etc.)	1	2	3	4	5	6

28. On a scale from 1 to 5, do you agree or disagree with the following views?

Instruction: *Choose one answer in each ROW by circling the respective number in the COLUMN with your answer. Number 1 means "Strongly disagree", 2 means "Disagree", 3 means "Neither agree nor disagree", 4 means "Agree" and 5 means "Strongly agree".*

VIEWS	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. I find it easier to talk on the Internet than in person.	1	2	3	4	5
2. The conversation on the Internet is much more interesting than the one in real life.	1	2	3	4	5
3. It's easier to hide information about yourself on the Internet than in real life	1	2	3	4	5
4. It's COOL to be frivolous and rude on the Internet.	1	2	3	4	5
5. It is easier to talk about personal matters on the Internet.	1	2	3	4	5
6. I know how to be safe when surfing the Internet.	1	2	3	4	5
7. I feel more confident on the Internet than in real life.	1	2	3	4	5
8. I find my way around the Internet very easily.	1	2	3	4	5

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VIEWS	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
9. I feel comfortable on social media (I don't think of problems and stress).	1	2	3	4	5
10. Social media are a substitute for other social contacts.	1	2	3	4	5
11. Social media help me solve personal problems.	1	2	3	4	5
12. I acquire new knowledge and skills via social media.	1	2	3	4	5
13. I use social media to form my own opinion.	1	2	3	4	5
14. I say or do things on social media that I would never do in person.	1	2	3	4	5
15. Social media have a negative effect on me.	1	2	3	4	5

29. The table below lists several activities that can be done on the Internet. For each of them answer if you have done it, would like to do it, or would not like to do it?

Instruction: *Choose one answer by circling the number in the column with your answer.*

Activity	I have done it	I would like to do it	I would not like to do it	I don't know
1. Make a short video and upload it to a website or social medium	1	2	3	4
2. Go live on Facebook, YouTube, Instagram, etc.	1	2	3	4
3. Upload photos on a website or social media	1	2	3	4
4. Upload a photo to which you have added filters and edited it	1	2	3	4
5. Create an online photo album, birthday card, etc.	1	2	3	4
6. Make a meme/mime or gif	1	2	3	4
7. Write a text and post it on a website or social medium	1	2	3	4
8. Make your own music or a remix of someone else's song	1	2	3	4
9. Create your own collections of ideas on sites like Pinterest	1	2	3	4
10. Create your own website	1	2	3	4
11. Create your own vlog (video blog) or blog	1	2	3	4

30. On which social medium do you have a page or profile?

Instruction: *Circle the numbers of all applications on which you have a profile/account. Then in the second column mark the application you use most often.*

	I have an application/ profile	Most often I use (circle only one answer)
Facebook	1	1
TikTok	2	2
Snapchat	3	3
Instagram	4	4
BeReal	5	5
Reddit	6	6
X (formerly Twitter)	7	7
Threads (Meta)	8	8
Discord	9	9
Telegram	10	10
Other/s, which?	11	
I don't have any profile	12	

31. Who can see your page or profile on the application you use the most?

Instruction: *hoose one answer by circling the number in the column with your answer.*

Only a certain number of my friends/followers/contacts	1
Only my friends/followers/contacts	2
Friends of my friends	3
Everyone/Anyone with a profile	4
I don't know, I'm not sure	5
I don't have a profile	6

32. How often do you do the following activities on the social media?

Instruction: *Choose only one answer in each ROW by circling the respective number in the COLUMN with your answer. Number 1 means "Every day", 2 means "Several times a week", 3 means "Several times a month", 4 means "Once a month" and 5 means "Never".*

Activities	1. Every day	2. Several times a week	3. Several times a month	4. Once a month	5. Never
1. Talking to friends/family	1	2	3	4	5
2. Talking to people I don't know	1	2	3	4	5
3. Browsing content (texts, videos, photos)	1	2	3	4	5
4. Browsing other people's pages without leaving a like or comment	1	2	3	4	5

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5. Listening to music/finding out information about groups/bands and artists vie streaming platforms (Spotify, Youtube, Deezer)	1	2	3	4	5
6. Browsing or joining campaigns and petitions	1	2	3	4	5
7. Getting informed about the latest developments both at home and in the world	1	2	3	4	5

33. On a scale from 1 to 5, to what extent do you agree or disagree with the following views related to social media?

Instruction: *Choose one answer in each ROW by circling the respective number in the COLUMN with your answer. Number 1 means "Strongly disagree", 2 means "Disagree", 3 means "Neither agree nor disagree", 4 means "Agree" and 5 means "Strongly agree".*

VIEWS	Strongly disagree	Disagree	Nether agree nor disagree	Agree	Strongly agree
1. I spend too much time on social media	1	2	3	4	5
2. They are useful for finding information about people I don't know	1	2	3	4	5
3. On social media, people often harass other people	1	2	3	4	5
4. I can get a bad reputation because others comment on me	1	2	3	4	5

VIEWS	Strongly disagree	Disagree	Nether agree nor disagree	Agree	Strongly agree
5. Someone can pretend to be my age in order to get to know me	1	2	3	4	5
6. Someone can upload my photos on their page without my consent	1	2	3	4	5
7. On social media, people often send offensive messages to other people	1	2	3	4	5
8. None of this worries me	1	2	3	4	5

34. Which of these would you share on the Internet publicly, so that others can see it?

Instruction: *Choose only one answer in each row by circling the number in the column with your answer.*

	I would share it without a problem	I would think first, but share it anyway	I would never share it
1. Information about what I do	1	2	3
2. Information about how I feel	1	2	3
3. Photos of my vacation	1	2	3
4. Photos of my family or with other minor family member	1	2	3

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5. Photos of going out with friends	1	2	3
6. My home address	1	2	3
7. My email address	1	2	3
8. My mobile phone number	1	2	3

35. Do you follow influencers and bloggers on your social media?

Instruction: *Circle the number of your answer.*

1. Yes
2. No

36. If you answered YES to the previous question, name the two influencers or bloggers whose content you follow the most?

7. _____

8. _____

37. What would you do if you see something on the Internet that you consider to be disturbing, rude, offensive, that can harm or affect someone negatively?

Instruction: *Choose up to three answers by circling the first choice in the first column, the second choice in the second column and the third choice in the third column.*

	First choice	Second choice	Third choice
1 .I would ignore it/I would not react	1	1	1
2. I would stop following the person who shared such content or comment	2	2	2
3. I would block the person who shared such content or comment	3	3	3
4. I would share the content with friends to say that it is not good	4	4	4
5. I would comment on the post to say that is wrong	5	5	5
6. I would not put a 'like' on the post/comment/video	6	6	6
7. I would report the content to the social media provider	7	7	7
8. I would inform the police	8	8	8
9. I would tell a brother/sister	9	9	9
10. I would tell a parent	10	10	10
11. I would tell a professor	11	11	11
12. I would tell a friend	12	12	12
13. I would call SOS phone for children	13	13	13

14. I don't know what I would do	14	14	14
15. Other, what?	15		

38. Has anyone given you information or advice on how to stay safe while on the Internet?

Instruction: *You can choose more than one answer, circle the numbers of the answer that apply to you.*

Yes, parent	1
Yes, other family member	2
Yes, teacher/at school	3
Yes, friends	4
Yes, from websites	5
Yes, from forums/blogs	6
Yes, from webinars/courses/workshops	7
Yes, from traditional media	8
Yes, from the police	9
Another place, write it down	10
No, nobody	11

5. MOBILE PHONE

39. How often do you do the following activities on your mobile phone?

Instruction: *Choose only one answer in each ROW by circling the respective number in the COLUMN with your answer. Number 1 means "Every day", 2 means "Several times a week", 3 means "Several times a month", 4 means "Once a month" and 5 means "Never".*

Activities	1. Every day	2. Several times a week	3.Several times a month	4.Once a month	5. I don't do it
1. Talking on the phone	1	2	3	4	5
2. Sending and receiving photos Sending and receiving SMS messages	1	2	3	4	5
3. Sending and receiving e-mail	1	2	3	4	5
4. Sending and receiving photos	1	2	3	4	5
5. Listening to music	1	2	3	4	5
6. Playing games on/via phone	1	2	3	4	5
7. Visiting websites	1	2	3	4	5
8. Taking photos	1	2	3	4	5
9. Using applications of social media such as Facebook, TikTok, Snapchat, Instagram, BeReal, Reddit, Twitter, etc.	1	2	3	4	5
10. Using messaging applications (Messenger, WhatsApp, Viber, etc.)	1	2	3	4	5
11. Watching videos	1	2	3	4	5
12. Recording and sending videos	1	2	3	4	5
13. Watching TV on the Internet	1	2	3	4	5
14. Listening to radio on the Internet	1	2	3	4	5

6. GENERAL INFORMATION

40. Which three of the listed activities would you miss the most if you could not do during a week?

Instruction: *Choose up to three answers by circling the first choice in the first column, the second choice in the second column and the third choice in the third column.*

Activities	First choice	Second choice	Third choice
Watching TV	1	1	1
Using mobile phone for conversations	2	2	2
Using social media	3	3	3
Listening to radio	4	4	4
Using Internet (via computer/laptop, mobile phone, TV)	5	5	5
Playing games	6	6	6
Reading books (print or electronic	7	7	7
None of the above mentioned	8	8	8
Other, what?	9		

41. Do you get enough information at school about the use of media and what media content actually means?

Instruction: *Circle the number of you answer.*

1. Yes
2. No
3. I don't know

Thank you very much for responding to our survey.