Thematical Article

How Do University Students Get Relevant Information?

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Abstract

The web and learning have evolved parallel as technological changes have influenced teaching and learning processes. In this study, I intend to extend this parallel with two other dimensions, namely, human 1.0-3.0 and influencer 1.0-3.0. The concepts are closely related to how the online world became popular abroad and what their impact is on learning and education. Thus, the question, "*what is the significance of social media, and of its latest, most popular actors, of the "work" of influencers (which can be interpreted as fake news) in the lives of students in higher education?",* is also a very pertinent issue to touch on. Its involvement in our lives is ever growing and very often influences our media literacy. This gives us even more reason to look into social media's impact.

However, our main goal is to find answers to the following questions:

- What opportunities does the digital toolkit give to students? What kind of digital literacy do students think they need to thrive in the job market?
- To what extent does the ICT literacy of pedagogical students differ from that of other students (lawyer, economics, doctor, technical)? What form of cognitive development is used for lifelong learning?
- To what extent are students' IT literacy influenced by cultural, material, and family capital?
- How is information acquisition implemented in education? How conscious is the use of media among university students, and what is their critical attitude?
- To what extent does online media penetrate the medium of formal-informal and non-formal learning? How does the influencer activity of professional opinion leaders help students to think critically and thoughtfully?

The sample of the survey is made up of students from the University of Debrecen. From the results we can see, that university students behave differently in the online space, on social media platforms and on messengers than they would elsewhere, thus this affects how they get information.

The current situation, the pandemic, clearly demonstrates that advanced digital competence is essential for a confident presence in the online space and advanced critical thinking. Problems of digital inequality and division have surfaced, and the constructed reality mediated by the media is becoming increasingly distorted. During this period, the relationship between the media and media consumers has changed greatly, and the interaction has intensified.

Keywords: ICT literacy, media literacy, digital competence, information sources, higher education

Introduction

Nowadays, information sources play a prominent role in providing information and raising public awareness (Ziaee et al., 2022). In the information community of the 21st century, society is undergoing a transformation that also affects the examined parallel. The expansion and effects of the online world have caused changes that affect our everyday lives. As the scene of media awareness and digital education, we give priority to educational institutions during the research, which also contributes to the development of conscious media use and the education of critical thinkers about the roles they ought to play in the whole affair. With the advent of such heavy online usage, information literacy has become one of the most important key competencies.

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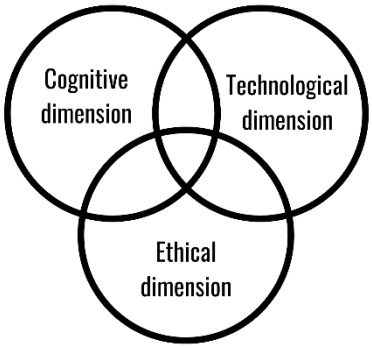
Advanced digital competence, a confident presence in the online space, and advanced critical thinking are essential. This is also proven by the fact that today we are not afraid to declare that we live in an informational society, in which we must strive to acquire the appropriate knowledge as much as and as quickly as possible (Herzog & Racsko, 2018).

In this study, we focus on information literacy, information acquisition, and information behavior, especially among university students. The keyword is information, which has now become a commodity. We believe it is important that students participating in higher education are motivated toward life-long learning and become information literate during their studies – they are well-informed in the digital world and move sensibly and responsibly on the information superhighway (Wong, 2010).

Digital competence and digital literacy

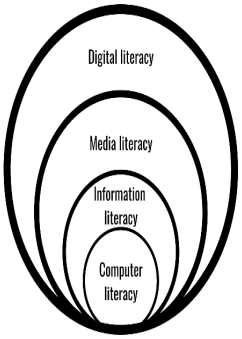
Competence is a complex system that contains knowledge, skills, abilities, personality traits, and attitudes, with which we become capable and equipt to act effectively and efficiently in different situations and solve tasks (Szabó, 2018). Calvani and his colleagues represented digital competence with set theory, which can be seen in the figure below.

Figure 1. Interpretation of digital competence (Calvani, 2008, edited by the author)



Today, digital presence does not depend on ICT tools – which include their conscious and critical use, both in the field of work, leisure, and communication – but rather on the knowledge, skills, and attitudes that enable the completion of tasks, the effective solving of problems, that result in good communication and cooperation. It includes ICT-based skills, which include using a computer, retrieving, evaluating, storing and producing, presenting and exchanging information, as well as communication and collaboration on networks (Molnár, 2020, p. 11).

Figure 2. Literacy areas of digital competence (Lévai, 2013, edited by the author)



Digital literacy includes skills and knowledge that enable users to take advantage of the possibilities provided by computers, and knowledge of the Internet and multimedia applications. In addition, we interpret it to be a collective term meaning, a synthesis of traditional knowledge – computer literacy – information literacy (Szabó, 2018). As a result of the digital revolution, the acquisition, knowledge, and development of digital literacy became necessary in the info-communication society that has now enveloped our world. In the 21st century, we can already be at a significant disadvantage in its absence, since information literacy has become a commodity in an economic sense, and a key competence in pedagogical terms.

Digital literacy consists of literary, documentative, numerical, linguistic, and computer and Internet literacy (Szabó, 2018). Nagy defined digital literacy as computer knowledge that enables the use of information technology. However, the spread of the Internet expanded the concept, and it now also includes the functions that operate the World Wide Web, for example, the use of search engines, the search for information, which activities are vital from the point of view of our research (Nagy, 2016). Without digital literacy, it is not possible to keep up with the continuous developments of the info-communication society. According to Buckingham, it is not only a set of skills in terms of function, but other competencies are also needed for our digital literacy to reach the appropriate level (Buckingham, 2006).

Media literacy

In recent years, media awareness and the development of digital competence have played a major role in the Hungarian curriculum regulations, this can already be seen in the 2007 National Basic Curriculum, which followed the recommendation of the European Parliament and the European Council 2006/962/EC and formulated the lifelong learning key competencies list (Herzog, 2016). On that list is a new mode of media literacy. This new media literacy is multifaceted, as it has been supplemented with elements of digital, informational, and critical literacy, and is gaining more and more importance thanks to today's digital world and changing media environment. Potter defined media literacy as: "The set of perspectives that we actively use when we interact with mass communication systems and interpret the messages that reach us" (Potter, 2014, p. 25).

Appropriate media behavior and critical thinking should be encouraged in children from an early age so that later on they can move safely and effectively through the vast media environment that was brought on by the Internet. Alongside the family, educational institutions play a big role in their formation and development. The lightning-fast digital transition forced by external factors proves that advanced digital competence, a confident presence in the online space, and advanced critical thinking are necessary. In addition, it also supports the teachers studying in higher education, pushing for their theoretical, practical knowledge of digital methodology and their access to and use of ICT tools to be as high as possible. During this period, the relationship between the media and media consumers changed to a great extent, and the interaction intensified. On the one hand, because the students and teaching pedagogues could only work exclusively with the possibilities of the online world, preparation for, and access to specialist literature were also realized in this form, and the direct consequence of this is that the consumption of online content has increased to an incredible extent. On the other hand, in addition to work, this process affects teachers and students in many other ways.

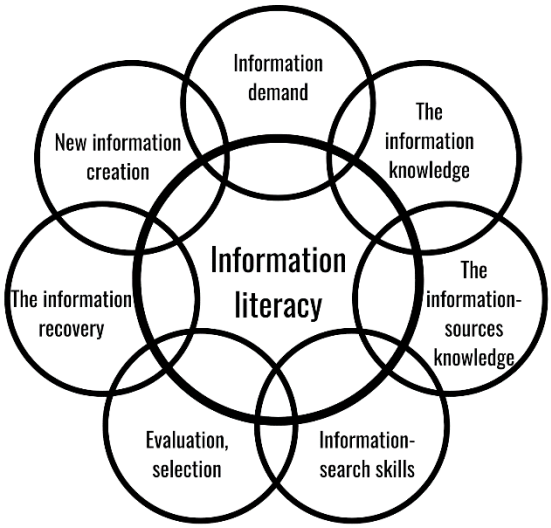
The question arises as to how those teachers who previously did not receive adequate knowledge for teaching media literacy during their higher education studies will be able to include it in their everyday education. In addition, media awareness and critical thinking appear as development areas. The goal is for students to meet new media, learn about its tools, and become responsible and conscious participants in the global public. This process is hindered by the fact that students not only rely on personal experiences but also learn about the world through the media, as they spend several hours a day online on social media platforms (Sági, 2006).

Information literacy

The most important key competence of the knowledge society of the 21st century is information literacy. The term includes skills that filter, recognize and overcome manipulations and effects due to information overload; the seeking and finding, recognition, evaluation, sorting, and use of information are all critical terms found under information literacy's umbrella. Anyone with adequate education knows how to find, organize and utilize information (Varga, 2013). In addition, testing the authenticity and reliability of information and the observance of ethical rules play an increasingly important role as well. It also raises the question of how we communicate, in what form, and how we share information on social media (Cilip, 2011).

In identifying the term, we distinguish three models of information literacy. The first model, the behaviorist model, is based on observable behavior and measures different abilities. The constructivist model prioritizes critical thinking and independent learning and is based on learning to learn. The third model complements the constructivist approach with a relational, critical use of information, and advocates the interaction of the student with the world (Koltay, 2009).

Figure 3. Model of information literacy (Varga, 2012, edited by the author)



The development of digital information literacy is slow compared to changes in information communication technologies, and this continues to be a problem in higher education. Competence in such skills is essential for full participation in society and at work. Furthermore, we consider these skills to underpin the ability to sustain lifelong learning. Evidence suggests that simple exposure to technology is not sufficient to promote adequate levels of literacy (Jeffrey et al., 2011).

Three broad strategies have been developed that potentially support the development of digital information skills. The first of these was cooperation and sharing. While the benefits of collaboration were established decades ago, the advent of the Internet has made it a reality through online communities. Dewey's support for experiential learning is widely used on the Internet. Finally, personal relevance, the third of Dewey's principles, is an integral part of Web 2.0 tools that personalize online environments for the individual (Jeffrey et al., 2011). Due to the resulting changing information acquisition, and the use of knowledge, the possibilities of storing and disseminating information, maintaining contacts, and knowledge have also broadened. In addition, it promotes learning through reflective thinking; it includes the conceptual understanding, dissemination, and use of information creation (Wong, 2010).

The challenges facing information users have shifted from searching for information to the skills needed to evaluate and use information. Herro writes that "the rapid acceptance of the validity of computer-generated information and the 'magic' of students requires a special emphasis on the application of critical thinking in library research." (Herro, 2000, p. 556). According to UNESCO experts, information literacy should be included in educational curricula at all educational levels (Koltay, 2007). In higher education, the following requirements have been formulated for information literacy:

- defining and formulating the nature and extent of the necessary information
- efficient and effective access to the necessary information
- critical evaluation of information and its sources
- effective application of information individually or in groups for a goal
- knowledge and ethical application of the economic, legal, and social problems related to information (Varga, 2008, pp. 5–7).

According to this, in educational institutions, emphasis must be placed on teaching knowledge of information sources, information search techniques, and critical thinking. The basic task of the courses is to emphasize the role of information literacy in most subjects (Varga, 2008).

Information literacy (IL) in the library

Libraries play an important role in the process of developing information literacy, as all their services promote this. And librarians must also have above-average general education. Along with the development of information and communication technology, the focus of information literacy education also changes. When information first became digital, librarians focused on computer and database search skills. With the advance of the web, the information environment has become more complex, so the focus of information literacy needs has

shifted to conceptual understanding and critical thinking. Effective cognitive level instruction in IL requires librarians who understand and consider the development of students' intellectual stages. In addition, well-designed IL interventions can promote students' intellectual development (Wong, 2010).

21st century development skills including critical thinking, problem-solving, communication, and creativity have become an important goal. IL is essential for students to become critical, reflective, and lifelong learners. McCormick wrote in 1983 that "one of the values of formal education is to help us continue our education throughout life, and library education can play a vital role in this process, especially education that teaches us to ask questions." (McCormick, 1983). The practice of effective pedagogy means that "higher education institutions should design learning experiences and student development interventions that focus specifically on the cognitive stage and help students move to the next stage" (Gatten, 2004). A fundamental element of library teaching is the learning acquired by students during their university life. Librarians are well-positioned to contribute to the intellectual development of students as they progress. In teaching IL, librarians should work to develop interventions that can promote the alignment of cognitive skills. and improving students' developmental levels (Wong, 2010). Basically, during all training, students must be supported in acquiring literacy and navigating through information. The shortest and most efficient way must be found to get from the recognition of the need for information to the reproduction and creative use of the acquired knowledge. Several domestic and international literature deal with how the library and librarians can support the acquisition of digital competence and literacy areas, and the development of skills (Varga, 2008).

Research

In this new information environment, as a result of the rise of the media, it is important to think about how we relate to information, whether we are capable of critical and conscious media use, or whether we are passive users (Koltay, 2009). In this chapter, we would like to present our quantitative research conducted in connection with this, which we will conduct among the students of the University of Debrecen in April 2022. We sent an online questionnaire (Google Form) to the students with more or less success in the Neptun system and with the help of social media, Facebook. A total of 261 fill-ins were received in 2 weeks. The survey is not representative and is still ongoing, so we only want to publish partial results based on the current answers.

General Information

As expected, a significant majority of the respondents are women (76,2%), which can also be inferred from the attitude tests of the questionnaires, that the online surveys are mostly filled out by women. The stereotype that women/girls pay more attention, take their studies more seriously, and undertake extra activities (in this case, filling in the questionnaire is also included) is valid. The average age of university students is 23 years, the minimum age is 18 and the oldest is 56.

67% of those who completed it were in bachelor's education, 18% in undivided education, and a smaller proportion of students in master's education completed the questionnaire, which shows that most of them have been studying at DE for 1–3 years.

As already mentioned, the research is not representative. Responses were received from all faculties of the University of Debrecen, but this was also influenced by whom we reached on social media and how much the university's staff helped our work. As a result, most of the applicants are students of the Faculty of Economics and the Faculty of Arts. Our goal is to achieve a minimum of 100 completions in each area and to obtain more measurable results.

Digital competence

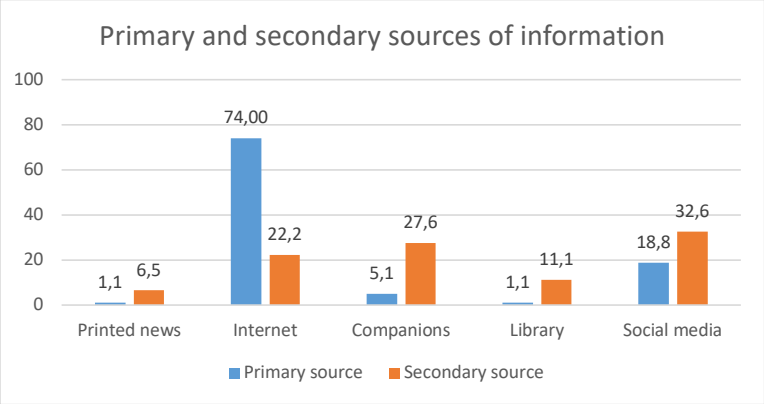
We were curious about the students' level of digital competence. For this, we provided a 6-point Likert scale, which corresponds to the A1-C2 levels of the DigCompEdu framework. Although this measurement was created primarily for teachers, in our opinion the level descriptions are suitable in any context; entrant, explorer, integrator, experienced, manager, innovator. Based on the results, most students place themselves at the B2 level. The trainees use digital technology with confidence, they are characterized by creativity and a critical attitude, they are curious and open to the online world, and they are innovative.

60% of the respondents agreed that their digital competence developed during their university studies and they became more conscious media users, while 29% could not decide. We were curious whether the digital

literacy of university students develops within a formal or rather informal framework. In general, it can be said that the vast majority acquired and developed their knowledge both in school and during self-education, but many are informed by peers and friends. Here, too, the importance and guidance of contemporary relationships are reflected, which is a necessity for emerging generations. It can also be read in various studies that, even in the field of education, peers facilitate the learning process, and students learn from each other more easily and listen to each other better.

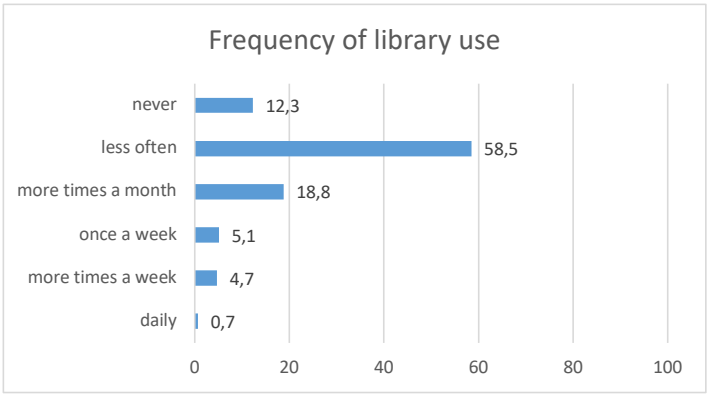
Getting information

Figure 4. Primary and secondary sources of information (edited by the author)



In figure 4, we can see sources from which the students of the University of Debrecen get their information. It is not surprising that the majority of respondents indicated the Internet as the primary source of information, followed by social media platforms. It is a sad fact that only 1-1% get information from printed news sources and libraries, but these are given space as secondary sources, along with their peers. About the studies, we also discussed the use of resources, in which the library and peers appeared in a larger proportion in addition to the Internet.

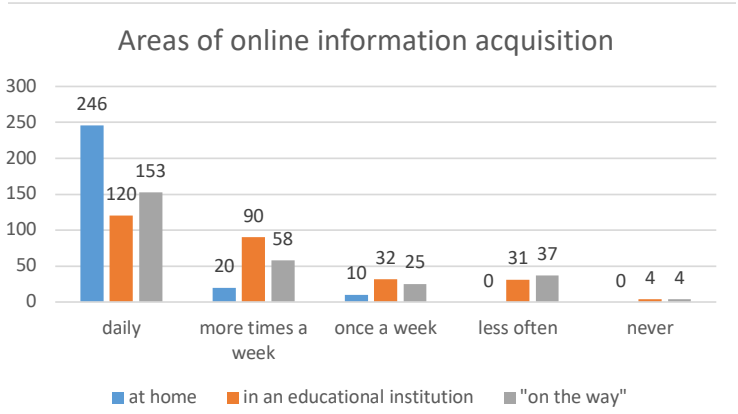
Figure 5. Frequency of library use (edited by the author)



Two of the respondents go to the library daily, while 59% stated that they visit the facilities of the University and National Libraries of the University of Debrecen, which are found on all campuses, less often. And there are students, approx. 13% who never use the opportunities provided by libraries. We asked the question here, how can a young person get a degree without ever setting foot in a library? Based on the answers, they go to the library for study purposes and to obtain information, but several also emphasized spending their free time, to which the renovated library spaces also contribute.

Among the respondents, only 2 students do not have a smartphone. This also shows how much we are defined by the accelerating time, the development of information communication devices, and the arrival of newer and newer devices on the market. In addition, 96% of students have a laptop. We can almost say that young people, digital natives, cannot even imagine their lives without the Internet and smart devices, to which the information revolution and the digital paradigm shift that has occurred in recent years have contributed.

Figure 6. Areas of online information acquisition (edited by the author)



From the results of Figure 6, we can see that the respondents use the Internet and access information daily at home, in educational institutions, and "on the go". From this, we can conclude that the unlimited possibilities of the web in space and time can be enjoyed anywhere and at any time. The distribution of answers is also influenced by unlimited Internet access, not everyone has the opportunity to have a continuous online presence. With the help of the Internet, we can quickly and easily access information through search engines. In general, it can be said that keyword search engines are easy to use, and there are several types, so we were curious which one university students prefer, and whether the domestic trend corresponds to international measurements. The results were expected, that 98% of the respondents use Google for searching, and no one uses the Bing and Yahoo services, or only when the browser is changed and the system we want must be reset as the default search engine.

Figure 7. A critical view of search results (edited by the author)

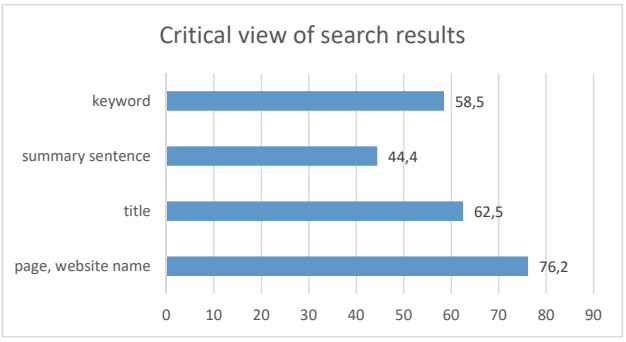
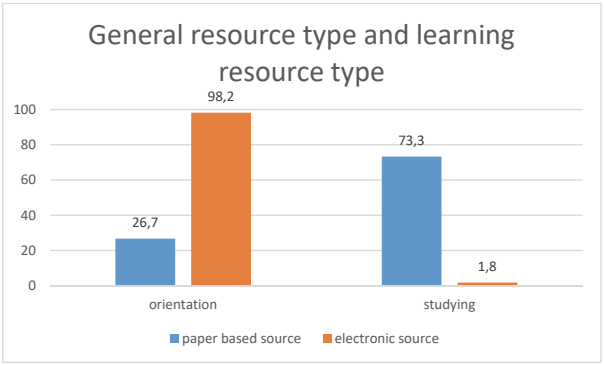


Figure 7. shows the criteria on which the respondents open the search results. The results reflect a critical approach since the names of the websites already reveal the value of the given news. If they receive an inappropriate result, 82% of the students enter a new keyword or specify the term entered in the search engine. But more people – 52% – indicated that in this case, they use a different language.

The pie charts below contain conflicting information. 98.5% of the respondents use electronic sources for information daily, but when it comes to studying, 69% prefer paper-based documents.

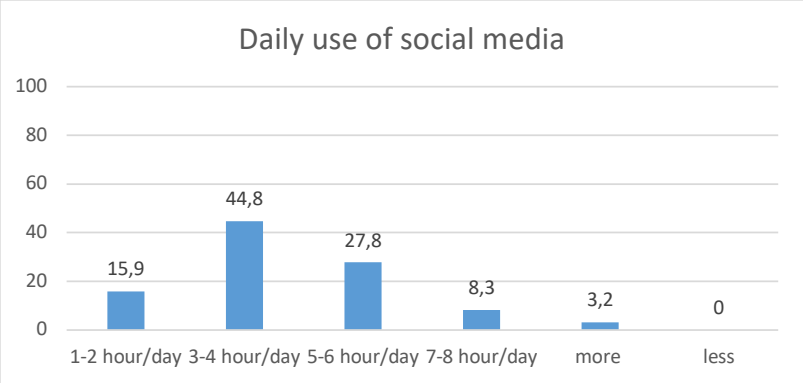
Figure 8. General resource type and learning resource type (edited by the author)



Media

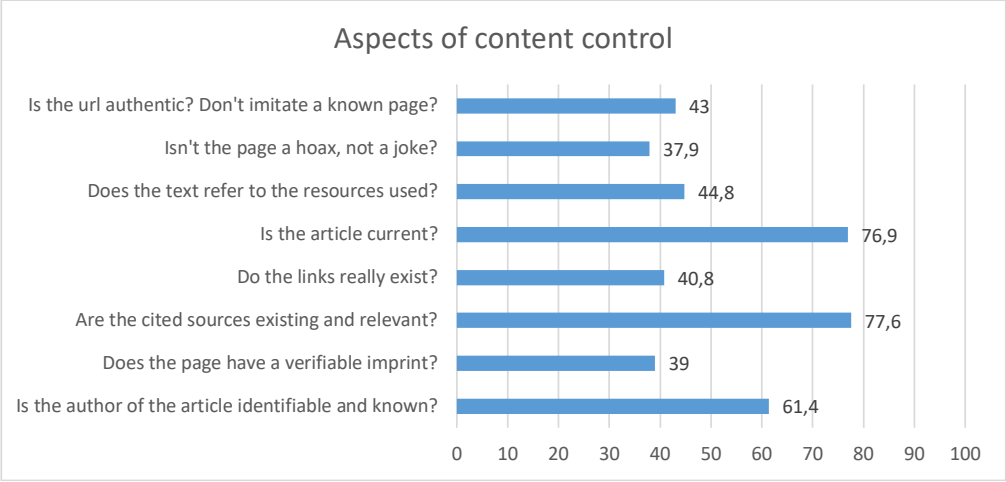
In the last phase of the questionnaire, we asked the students about the media, especially social media. According to respondents, social media is the most influential (56%), followed by the Internet and television.

Figure 9. Daily use of social media (edited by the author)



It is debatable how much time is appropriate for young people to spend on social media since today it can be said that they learn about the world not only through personal experiences but also through the media. Figure 9 clearly shows that the university age group spends approximately 3-4 hours using different interfaces of the digital world. A third of the respondents would not last a day without using these interfaces. Application-specific results are diverse. The most and longest-used apps include Facebook, Messenger, Instagram, YouTube, and TikTok. It can be said about the respondents that they do not often share content about their current state, the number of acquaintances is not important to them, they prefer to read other people's content and do not comment, and they prefer to use these channels for private message exchanges. Although the response rate raises further questions; then who actively uses social media interfaces, how do the algorithms work? Social media sites are mostly used for communication and information. A shocking majority of respondents, 61%, believe that the TikTok app is the most addictive, although more than half said they use the video-sharing app for less than 15 minutes a day.

Figure 10. Aspects of content control (edited by the author)



In Figure 10, we can see the criteria by which the respondents check their search results and Internet content. 82% always check information.

Some questions were also related to the latest actors of social media, the influencers. In general, it can be said that everyone follows domestic or foreign opinion leaders (there was no significant difference), most of them in the field of music, sports or entertainment, or gastronomy, according to their interests. 73% of those surveyed prefer to follow "self-made" influencers who have become opinion leaders on their own, and not media stars or celebrities because they are more authentic, likable, and closer to the average person.

The majority of respondents, 48%, stated that it is difficult for them to decide whether these persons have a positive or negative effect on them. Here, the interviewees could even express their opinion, some pointed out that it depends on the person and the target group, it does not matter what the shared content is like (celebrity/ professional opinion leader), or the current situation and state of mind of the receiving person. But it can also influence what topic they produce content on. We would highlight two opposing opinions:

"Many famous people became known sooner than they started collaborating with certain companies, so we don't refer to a musician who, for example, is an influencer. he only promotes the products of a dear friend or higher quality things that are essential to his occupation. I don't even follow "official" influencers who are popular/popular just for that reason; only those who anyway have some kind of authority and expertise in a specific field, and they sometimes promote related products/companies. If we also consider it an influencer, it obviously has a positive effect, because recommending a better product to people working in a similar field can help, but I don't see the point of completely unjustified, purely money-focused collaborations at idle, and I don't even consider it a regular job (whatever it's called today already that)."

"Is influencer a job? Do you get paid for it? Some are good at their job, some are bad."

During the questionnaire, we asked a question that needs to be explained, since according to our previous experience, the target group does not fill them in, or misses the question one word at a time, or does not think when answering. Of course, there was an example of this in this case as well, there are unappreciable answers, but we asked the students what they think media awareness is. I would highlight some answers:

"That we consciously choose between the pages and, if necessary, handle information with reservations. We can filter what is valuable (content) and what is not."

"We can evaluate the content broadcasted by the media ourselves."

"To be aware of the interests behind media content, to distinguish real news from fake news, to consume all content and advertising with a critical point of view, to understand the processes that produce media content."

"We don't believe everything we see and read. We don't spend more time looking at social media than necessary."

"Almost all media surfaces, channels, and platforms serve interest groups, which makes the free and objective flow of information difficult. Media awareness is understanding this. Of course, not everything that e.g. the TV says and I know why it says what it says."

"I can distinguish between real and fake information. I am critical of advertisements. I can tell you which platform and page I use for what purpose and why."

"I pay attention to what content I read/share, I check their authenticity, I don't let fake news influence me."

"Rethinking how we share our content."

"We don't believe everything we read without a basis in reality. We get information from several places. We don't let ourselves be fooled that everyone on the Internet is perfect."

"You have to be able to select the relevant information from the news dumping."

"In my opinion, a media-savvy person should be characterized by a skeptical attitude towards information published on social media. The person who researches a source material in at least 5-6 different places and "personally" makes sure that the information received is correct."

"I know the consequences of my Internet activities and I know the disadvantages of the media. I will make a decision taking these into account."

"Being aware that everyone writes what they want and it's not necessarily real, and what I share will be visible forever."

Finally, we asked about media awareness in two ways; "How conscious of a media consumer are you?" and "I know how to behave safely and responsibly online." – where the answer had to be given on a 5-point Likert scale. The results are contradictory (Figures 12–13), since we should see the same distribution, and the respondents defined the concept well, apart from the non-evaluable definitions of media awareness. They could not identify responsible and safe behavior in the online world as the same as media-aware behavior.

Figure 11. Media awareness individual opinion (edited by the author)

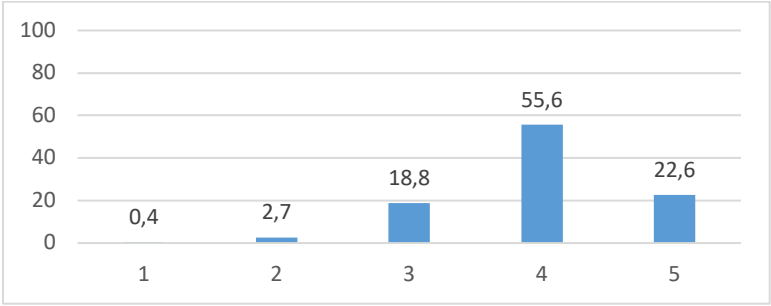
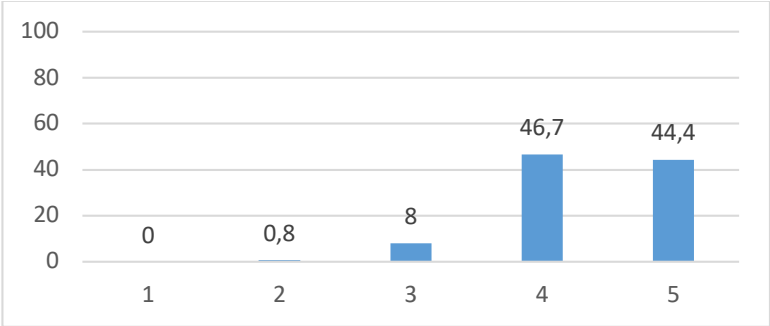


Figure 12. Safe and responsible behavior online (edited by the author)



The literature has identified several barriers that prevent students from developing their technology skills. The issue of access and the digital divide, which has preoccupied those concerned with social equity, continues to be a hot topic of debate. Students' beliefs and attitudes about learning new technology can also become barriers to their learning progress if they experience low self-efficacy or anxiety about their ability to develop digital skills. Conversely, students who are overconfident in their technical skills can hinder the development of good digital information skills (Jeffrey, et.al, 2011).

Summary

As we have seen, we can observe unidirectionality in the Web 1.0 system. This passive information consumption was later replaced by co-creation, which appeared in Web 2.0, and then made it possible to query information with Web 3.0 programs, which are already personalized. The technological changes also influenced the educational process and promoted student-centered learning, where the transfer of knowledge mediated by the teacher generates a collaborative knowledge-building process. As a result, learning became independent in time and space. So, the generations of Web and learning processes develop in parallel (Szabó & Dani, 2021) (Molnár & Turcsányi, 2011). Parallel to this is media awareness, education to become a critical thinker, and influencer activity, which always highlights the particularities of the era. Appropriate media behavior and critical thinking are essential skills for citizens in the 21st century. However, digital education still raises a lot of questions and is the subject of debate, to which the COVID-19 epidemic also contributed greatly. In a society of overflowing information, the generation and digital gaps are growing yearly.

Thanks to this continuous development and the new achievements of technology, the information acquisition habits of digital natives are subject to constant change. The role of education and information carriers is changing, and as you can see, the focus is increasingly shifting to the online world. Which increasingly encourages students to self-education and lifelong learning. In today's world interwoven with media, the rising generations must become conscious media consumers, acquire the basic knowledge and skills of digital media literacy, and use this attitude in everyday life.

In the course of the thesis, we could find the answers and opinions of 279 students of the University of Debrecen. From the results, it seems that the students' critical thinking is adequate, but their conscious media consumption still needs to be developed, and the innovations of the Internet, social media, and influencer activity create conflicts even within generations. So far, the results reveal problems related to media literacy among university students and raise new questions for us. How can the development of information literacy be integrated into higher education in Hungary, regardless of major or subject? After all, as Stern, the director of

the National Research Council, said: "A person of the digital age can thrive by becoming a master of information." (Racsko, 2015).

- What opportunities does the digital toolkit give to students? What kind of digital literacy do students think they need to thrive in the job market?
- To what extent does the ICT literacy of pedagogical students differ from that of other students (lawyer, economics, doctor, technical)? What form of cognitive development is used for lifelong learning?
- To what extent are students' IT literacy influenced by cultural, material, and family capital?
- How is information acquisition implemented in education? How conscious is the use of media among university students, and what is their critical attitude?
- To what extent does online media penetrate the medium of formal-informal and non-formal learning? How does the influencer activity of professional opinion leaders help students to think critically and thoughtfully?

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