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Selected attributes of screen time spent on smartphones by Gen Z

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The study examines selected attributes of time spent on smartphone screens among Generation Z. The research was conducted during 'Digital Well-being Week' at a Slovak secondary school, focusing on the extent of exposure and nature of young people's digital activities. The methodology is based on quantitative analysis of data from weekly diaries based on internal smartphone statistics and subsequent questionnaires assessing the frequency of smartphone activities. The study provides empirical data and insight into the digital habits of Gen Z and serves as an example of good practice in integrating media education into the school curriculum to promote awareness, self-reflection regarding smartphone screen time and its impact on students' daily routine and digital well-being.

Die Studie untersucht ausgewählte Merkmale der Bildschirmzeit der Generation Z auf Smartphones. Die Untersuchung wurde während der „Digital Well-being Week" an einer slowakischen Sekundarschule durchgeführt und konzentrierte sich auf das Ausmaß der Nutzung sowie die Art der digitalen Aktivitäten junger Menschen. Die Methodik basiert auf einer quantitativen Analyse von Daten aus wöchentlichen Tagebüchern, die auf internen Smartphone-Statistiken beruhen, sowie auf anschließenden Fragebögen zur Erfassung der Häufigkeit von Smartphone-Aktivitäten. Die Studie liefert empirische Daten und Einblicke in die digitalen Gewohnheiten der Generation Z und dient als Beispiel für bewährte Praktiken bei der Integration von Medienerziehung in den Lehrplan, um das Bewusstsein und die Selbstreflexion hinsichtlich der Bildschirmzeit am Smartphone sowie deren Auswirkungen auf den Tagesablauf und das digitale Wohlbefinden der Schüler zu fördern.

1. Introduction

In today's digital world, screens have become an integral part of our lives. Digital device screens are used for entertainment, socializing, communication, and educational purposes. Over the past decade, smartphones have become a common form of communication, especially among teenagers, and significantly changed the information and communication environment, as these devices, originally designed for making phone calls, have almost replaced computers (Laid, 2024).

In parallel, there are growing concerns about the possible negative effects of excessive use of mobile devices on the healthy development of children and adolescents in terms of their cognitive,

physical, and social-emotional development. With the development of science and technology integrated into everyday and social life, the increasing use of smart digital devices simultaneously increases the amount of time spent on screens, with a possible negative impact on physical and mental health (Qi et al., 2023). Given the potential positive and negative impacts, it is essential to have clear information about the nature of screen activity of young people (Beynon et al., 2024).

In our study, we present the results of the survey conducted within the framework of activities during 'Digital Well-being Week' at a secondary school in Slovakia. The survey was focused on the amount of time spent using applications on smartphones by representatives of Gen Z. For the purpose of this paper, the term smartphone refers to a digital device with the access to internet and intelligent functions and applications (hereinafter apps). Within the scope of the survey, we were interested in what are the days with the highest exposure to smartphone screens and we also inquired about the nature of activities related to the use of smartphones and the frequency of their performance. The survey aimed to enhance the students' self-reflection concerning their digital behaviour regarding their smartphone activities and digital habits focusing on their consumption in digital environment.

2. Literature Review

Generation Z currently represents 32 % of the global population (Opena & Dudkiewicz, 2026). This term refers to young people

born between 1997 and 2012, although the dates of their birth vary among different authors. McCrindle & Fell situate the birth period of Gen Z between 1995–2009 and also list five defining characteristics of Generation Z: digital, global, mobile, social, and visual, designating Generation Z as "digital integrators" (McCrindle & Fell, 2019). Seemiller & Grace refer to this generation as "digital native", a term first used by Marc Prensky in 2001, for a new generation born in the age of the internet and exposed to modern digital technologies from an early age, which are an integral part of Generation Z (Seemiller & Grace, 2018).

This generation was born after the emergence of Google, in the era of internet technologies, and immediately took a liking to touchscreen media, with technological innovations becoming synonymous with convenience for this group (Wijaya et al., 2020). Panagiotou et al. use the term "digital technophiles" for Generation Z, who have access to touchscreen devices with smart features that they use to "swipe, tap, like, and share" from an early age (Panagiotou et al., 2022). One of the main characteristics of this generation, compared to its predecessors, is the level of exposure and extent of internet use for various purposes, such as watching videos, playing games, searching for information, and using apps (Zilka, 2023). Among new media consumption trends of Gen Z, Rand lists subscription streaming services, in-app purchases, using social media to interact, watching short videos (shorts, reels), getting news, using augmented and virtual reality or live-streams (Rand, 2025).

Along with social media, *smartphone*s are clearly a status symbol for Gen Z (Szabó & Dani, 2022). This generation considers getting their first smartphone to be a significant milestone in their lives, just like graduating from school and getting a driver's license (Sharma & Singh, 2023). McCrindle refers to Generation Z as the "smartphone generation", for whom the smartphone is not only a communication tool but an indispensable tool for daily tasks, adding that it has become "an extension of themselves," having the smartphone always on and integrated into all aspects of their lives (McCrindle, 2014). According to Szabó & Dani, Generation Z requires smartphones to be personalized and equipped with internet connection, access to social networks, YouTube, communication apps, and music playback apps, the usage of which leads to the formation of new habits and behaviour (Szabó & Dani, 2022). An important feature of today's smartphones is their connection to app stores, enabling users to search and download applications in areas such as productivity, gaming, word processing, note-taking or social networking, while Bluetooth headsets, external speakers, and special protective equipment are standard accessories for smartphones (Kirvan, 2023). In addition to phones, mobile digital devices also include tablets, iPads and laptops, but it is smartphones that are the most commonly used tool for connecting to the internet (Panagiotou et al., 2022).

Various statistics and survey results provide data confirming the popularity of smartphones. According to a 2025 Pew Research Center survey, 98 % of Americans own a smartphone (Pew Re-

search Center, 2025). It is estimated that there are over 6.8 billion smartphone users in the world (Kumar, 2025). In the European context, it is reported that 93.3 % of Gen Z survey respondents use a mobile phone daily (Panagiotou et al., 2022). Adamčák et al. cite a survey conducted among Spanish secondary school students that provides evidence of even excessive use and abuse of smartphones, with 41.1 % of adolescents admitting to sometimes abusing smartphones and 24 % defining themselves as smartphone addicts (Adamčák et al., 2023).

Activities typically performed on a mobile phone include searching for information, browsing the internet, using apps (including social media), listening to music, taking photos and recording videos, reading emails, using GPS, checking, sending, and receiving text messages, making phone calls, and getting news (Rosen et al., 2013). Among the prevalent smartphone applications are those used for sending messages and emails, social media apps that allow users to post comments or photos “on the go,” the use of health and wellness apps that track sleep, diet, physical parameters, vital functions, and provide exercises for mental health (Kirvan, 2023). The same authors also mention the popularity of connecting smartphones to other mobile devices, such as smartwatches, or using smartphones as digital wallets for payments and banking services. Fortunato et al. state that adolescents use their smartphones mainly to access social networks and instant messaging apps (Fortunato et al., 2023).

According to DataReportal's report, 34.7 % of time spent on smartphones is spent on social media apps, 31.4 % on entertainment apps, 14.4 % utility and productivity, 11.1 % on mobile games, 6.3 % web browsers and search engines and 1.5 % on shopping apps (Wildwood, 2026). Pursuant to recent surveys, the top mobile apps in terms of time spent on them are YouTube, TikTok, Facebook, WhatsApp, Instagram, and the Chrome browser, while recently, there has been a significant increase in the use of the ChatGPT mobile app, which is on the list of the 10 most visited web domains (Kemp, 2025). As reported by Fagbemi, in 2025, the list of most downloaded apps on smartphones was topped by ChatGPT, followed by TikTok, Meta-owned applications Instagram, Facebook, WhatsApp and Messenger, and video editing app CapCut, retail app Temu, Google's Gemini, Telegram and Snapchat (Fagbemi, 2026). The author also names Uber, Google Maps or Wave for travelling, DramaBox, ReelShort and Netflix for video streaming, PhonePe, PayPal or Google Pay for digital wallets and P2P payments apps. Mobile applications were originally designed to encourage users to spend as much time as possible on them through notifications, automatic video playback, or gaming features. However, designers are gradually adding digital well-being features that measure time spent with the app and encourage breaks in use (Cecchinato et al., 2019).

The time spent using mobile digital devices is referred to as "screen time," which refers to the time spent with visual technologies on the screen of a digital device, including activities such as

using the internet, social media, or text messaging, while some authors do not include phone calls and listening to music in screen time (Oswald et al., 2020). It is estimated that on a global average, people spend 6 hours and 45 minutes daily on screens, while Gen Z has an average screen time of over 9 hours a day, which is the most compared to other generations (Kumar, 2025). The global average time spent on mobile is 4 hours and 37 minutes, which makes smartphones the major contributors to the increased screen time as globally, they account for 53 % of screen time (Kumar, 2025). Another survey by DataReportal confirms the rising tendency, revealing that smartphone users globally spend an average of 5 hours and 1 minute using their devices (Wildwood, 2026).

When attempting to measure screen use, methods based on subjective assessment in the form of questionnaires or diaries are most commonly used. Their advantage is that they are easy to administer, but on the other hand, they are not entirely accurate due to possible distortion of information. Moreover, the complexity of measuring screen time makes it difficult to compare the results of individual studies. Measuring the objective use of technology and interpreting the results is challenging. This is due to factors like simultaneous use of multiple screens, shared family devices with different functions, differing perceptions of usage purposes between parents and children, or the time context of use (morning, evening, weekend, holidays) (Beynon et al., 2024). Xu et al. also argue that it is necessary to capture the complex nature of

screen use and its potential impacts, and given the diversity of this use, it is important to distinguish between different forms of use to objectively assess their impact on child development, because, according to the authors, the time spent on screens alone is insufficient to understand the overall impact on the development of children and adolescents (Xu et al., 2025).

We assume that media education plays a crucial role in building a responsible approach to digital consumption. Regarding the rising screen time and accessibility of digital tools, there is a need of having formal study of the media at schools to help young people to understand what they are spending so much time on (Butler, 2021). The focus of media education has changed over the years reflecting technological advancements. Nowadays, besides the acquisition of technical skills, it also emphasizes critical engagement and social contexts, fosters critical thinking and responsible media usage, which encourages not only mindful technology usage but also helps in cultivating a resilient personal and social identity among young people (Todino & Di Tore, 2025).

In Slovakia, media education forms an integral component of the school curriculum. It is delivered in diverse formats – as a standalone subject, block scheduled instruction, or cross-cutting theme integrated across all subjects throughout the school year via media content or digital environment-related activities (NIVAM, n.d.).

3. Methodology

In our study, we narrowed the scope of measuring screen time to smartphone screens and limited its measurement exclusively to the integrated screen time functions of individual applications or the smartphone itself. The survey is based on accurate time calculations according to data from smartphone applications, excluding tablets, iPads, laptops, and game consoles. The survey was conducted in a group of participants consisting of 30 students aged 15–19, all representatives of Gen Z, within the framework of media education as a cross-cutting theme in the curriculum of a Slovak secondary school in the context of French language lessons during 'Digital Well-being Week' in June 2025.

Screen time was measured every day (Monday – Sunday), and data were collected via diaries, which students were asked to keep for noting down the apps they use on their smartphones every day and the daily time they spent using them according to the in-built time-tracking functions. To get more complex indicators, along with the amount of screen time, we also investigated which day of the week students spend the most time on smartphones and which apps they use during that time. Having finished their weekly diary entries, students were asked to fill in a questionnaire about the frequency of activities they performed on their smartphones based on the previous self-reflection and data.

The activities listed in the questionnaire were suggested by students themselves before tracking their screen time in week diaries during the introduction class discussion. The list included soci-

al media, gaming, listening to music and podcasts, taking pictures, calling, streaming services, instant messaging, watching Reels, Shorts and YouTube tutorials, doom scrolling, getting news, using services (payment, discount coupons), stalking and using applications for mental and physical health. The frequency was rated on a 7-point scale, where 6 meant most frequently (several times a day), and 0 meant least frequently (never). For evaluating the received data, we used the quantitative methods of statistical average rating and weighted average to count the average time and frequency of use.

ANOVA method was used to compare the means of two groups of data (screen time and day) by analysing variance to set the dependence between the amount of screen time and a day of the week, which was verified by Friedman test.

4. Results

The results show that the average screen time spent daily on the smartphones, indicated by the survey respondents, is 4 hours 34 minutes while the day with the biggest exposure was Saturday (5 hours 13 minutes), followed by Tuesday (4 hours 41 minutes), Thursday (4 hours 35 minutes), Sunday (4 hours 34 minutes), Wednesday (4 hours 30 minutes), Monday (4 hours 18 minutes) and Friday (4 hours 17 minutes).

The extreme values reported by students touched the maximum of 15 hours 15 minutes, falling on Saturday, and the minimum touched 44 minutes, falling on Friday, which corresponds with the

general value for the most and least exposure day. However, the *p*-value, obtained by the ANOVA method, reached a value of 0.18 (0.05), which does not indicate significant statistical dependence between the amount of screen time and the day of exposure. The non-significance was confirmed by the Friedman test (0.78).

The apps that students used the most on their smartphones, based on the frequency of appearance in the diaries, are topped by Instagram, Spotify, TikTok, Edupage, Messenger, Snapchat and YouTube, followed by the apps Pinterest, Photos, Safari, Google, ChatGPT, WhatsApp, Vinted, Chrome, Duolingo and Strava. Figure 1 displays how many students entered here mentioned applications in their week diaries along with the total weekly screen time spent using these applications on their smartphones.

On average, students spent 1 hour and 17 minutes on Instagram daily, and it was the only app that was used by all students every day. The second most used app in the survey (83 % of students) was Spotify, with a total weekly time of 119 hours 9 minutes (on average 39 minutes per day).

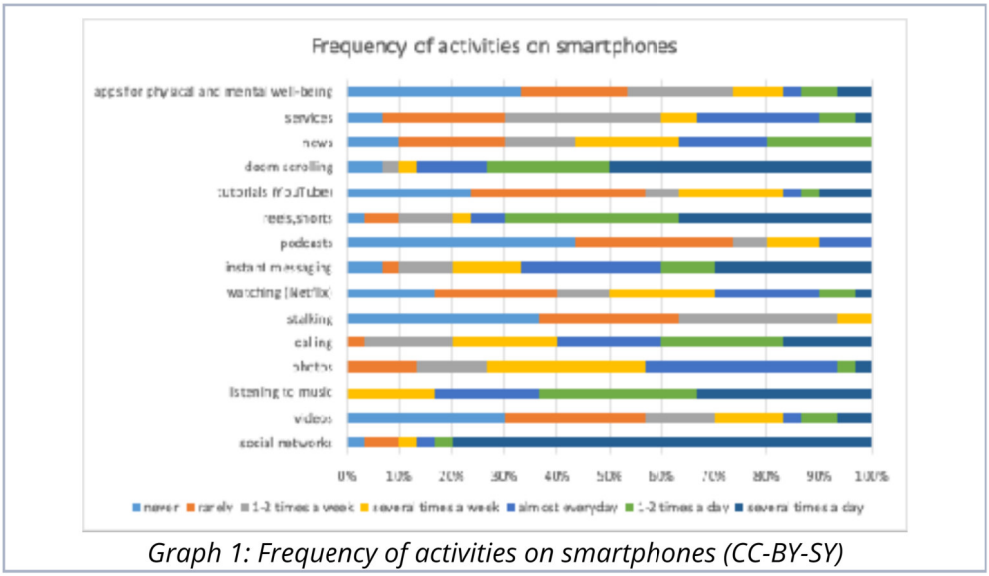
TikTok was used by 63 % of students, and the daily average time per student was 56 minutes. The same number of students (63 %) used Edupage, which is a cloud-based school management system and mobile application designed to streamline daily educational processes for teachers, students and parents, but students spent an average of only 4 minutes a day there:

Application	*Total week screen time*	*Users out of 30 students*
Instagram	270:52:00	100 %
Spotify	119:09:07	83 %
Edupage	14:26:00	63 %
TikTok	196:23:00	63 %
Messenger	22:05:24	53 %
Snapchat	23:32:00	50 %
YouTube	75:31:00	43 %
Pinterest	14:31:36	36 %
Photos	00:24:00	30 %
Safari	19:16:23	26 %
Google	19:08:51	26 %
ChatGPT	11:30:00	23 %
WhatsApp	26:55:00	23 %
Vinted	2:25:00	13 %
Duolingo	2:15:00	10 %
Chrome	4:39:00	10 %
Strava	1:36:00	10 %

Fig. 1: The most frequent used smartphone applications with the total week screen time (2026), own processing (CC-BY-SA)

Other apps downloaded to students' smartphones and used only by individual students (3–6 %) are Facebook, Block Blast, Photomath, Voyo, weather apps, Bookwalker, news, Clash Royal, Firefox, Perplexity, Facetime, clock, travel schedule app, Wattpad, X, Gmail, Brave, Wallet, Apple Music, Homescapes, PlantNet, podcast, stores, Tuneo, calendar, Notino, Clash of Clans, 365 Bank, Rouvy, GarageBand and CapCut.

As for the activities supported by the apps mentioned hereby, the top activity in terms of frequency of usage was the interaction with social networks in general, with specified activities of doom scrolling, watching Reels and Shorts and instant messaging. Besides social media and doom scrolling, students reported the same frequency of use for listening to music, followed by calling, taking photos, and getting news. Although stalking is reported to be the least frequent activity, with 30 % of students denying performing it, there are 70 % of students who do it rarely or even several times a week:



Graph 1: Frequency of activities on smartphones (CC-BY-SY)

5. Discussion

This study does not bring representative data about screen time seeing as only a small number of students participated. The survey presented here was a part of activities in the framework of a

preventive program within the context of media education as a crosscutting theme of the Slovak educational curriculum during the 'Digital Well-being Week' to enhance the awareness of secondary school students about their digital consumption based on self-reflection of their own smartphone activity. Nevertheless, the results obtained indicate some similarities with the data presented in the literature review. The average daily screen time, 4 hours 34 minutes, as recorded in the students' diaries, is almost identical to the screen time (4 hours 37 minutes) presented by Kumar (2025). The applications that are used by smartphone users listed in the global research presented by Kemp (2025) (in order of preference: YouTube, TikTok, Facebook, WhatsApp, Instagram, Chrome, ChatGPT) include the applications used by the participants of our survey. However, the preferences in our survey differ in favour of Instagram and indicate the decline of Facebook users among young people (only 6 % of respondents in our survey). The applications that appeared in students' diaries correspond also with the applications listed by Fagbemi (2026) as the most downloaded on smartphones – ChatGPT, TikTok, Meta-owned applications, Instagram, Facebook, WhatsApp, Messenger, CapCut and Snapchat, though our survey shows that Gen Z students use their smartphones also to support leisure time activities via specialized apps, such as reading (Bookwalker, Wattpad), music (GarageBand, Tuneo), sport (Rouvy, Strava), gaming (Clash Royal, Clash of Clans, Block Blast, Homescapes) or to support their studies of Maths (Photomath), Biology (PlantNet) or languages (Duolingo).

Activities performed on smartphones by students in our survey are mentioned in the study of Rosen et al. (2013) and correspond with the usage of applications mentioned by Kirvan (2023), Fortunato et al. (2023) and Wildwood (2026), where using social media far outweighs the others in frequency of usage. Notably, the students suggested to include stalking in the list of their screen activities although it did not appear in the previously mentioned studies. Stalking, in the context of online activities of generation Z, refers to checking the profiles of people of their interest. Stalking has become a part of dating culture and the number of students who admitted performing this activity in our survey appeared to be rather high (70 %).

The results obtained by ANOVA measurements indicate no significant difference in smartphone usage across weekdays. This conclusion was confirmed with a non-parametric Friedman test. Both values imply that the screen time does not depend on the day, however, from a slightly higher amount of screen time set on Saturday, we can deduce that fewer academic obligations might lead to higher consumption of smartphone screen time, which is to be confirmed by qualitative research focused on activities practised outside of the scope of screen time activities.

This study presents a primarily quantitative approach to the subject matter of research focusing on the overall amount of time spent on smartphone screens and the frequency of common smartphone activities. Nonetheless, it brings an insight into the character of Gen Z's smartphone activities indeed. The results of

the survey reveal a rather high level of screen time consumption predominantly driven by engagement with social media platforms, which leads us to believe in the need for integrating media education into the school curriculum to help students navigate in the digital environment and thus mitigate the risks associated with excessive smartphone interaction mentioned hereby. Educators should actively engage with and understand the needs of students and fears that exposure to smartphone screens can provoke, adhering to principles of self-regulation, alternation and accompaniment (Todino & Di Tore, 2025). The principles promote limited use of digital technologies, encourage a balance between screen time and other activities and ensure that students are not left alone in front of screens. The aim of initiatives such as 'Digital Well-being Week' is to make students conscious about their digital habits and help them to set their own rules based on the self-awareness of their screen time activities, and provide important data to teachers to be used to set and adapt the framework of media education in schools.

Although we are aware of the limitations of our study, we are convinced that all individually assessed survey results provide data that represent partial information in this area and may serve as a foundation for subsequent studies, which can significantly contribute to the research aimed at the examination of digital behaviour of young people reflecting the concerns about its possible harmful outcomes.

6. Conclusion

As digital technology is becoming an integral part of our daily lives, it is important to be aware of the risks of screen time and to set and follow recommendations that promote the healthy use of mobile digital devices. Despite the new possibilities offered by digitization, attention should be focused primarily on its conscious use (Malev, 2023). Responsible use of technology can be beneficial in a world that is increasingly technology-driven, as screen time can be both beneficial and harmful, depending on the type, amount, and quality of exposure. We are persuaded that school context can play an important role in initiating essential processes that equip young people with responsible digital consumption practices and foster a guided orientation toward their healthy digital lives. Our findings indicate that activities within the framework of the 'Digital Well-being Week', as a part of media education in the context of French lessons, are considered pertinent as they contribute to a healthy and sustainable approach to digital media. The presented concept exemplifies good practices of integrating media education in the Slovak secondary school context as it demonstrates an approach to embedding self-reflection tools into curricula and thereby fostering digital literacy of Gen Z. This model aligns with broader pedagogical frameworks like those in media and information literacy programs endorsed by UNESCO or the European Union. The empirical data presented in our study can contribute to the comprehensive synthesis of global research on the topic. Quantifying students' self-reported digital beha-

viours may provide an empirical justification for research in media literacy, particularly in educational settings. In the future, it might be possible to extend the research with qualitative methodology, for example, by using focus groups, which would strengthen the triangulation of results and help to explore the level of reflexive component of students' own digital habits in greater depth.

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