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EXCESSIVE INTERNET USE AMONG ADOLESCENTS ON THE CONTINUUM FROM NORMATIVE TO RISKY BEHAVIOUR

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Summary. The present study examines excessive internet use in the context of adolescent leisure. It seeks to clarify the boundary between normative and risky digital behavior by arguing that the decisive criterion is not the intensity of digital exposure, but the function that online activities serve in adolescents' non-school time. Specifically, the article asks whether these activities support meaningful social participation or assume a compensatory role when the offline environment is insufficiently structured, boredom occurs, or psychological discomfort is present. The empirical component is based on a school-based cross-sectional survey of 397 adolescents in the Ústí Region. It examines their leisure activities, the structure of their online engagement, and the mechanisms through which normative behavior may move toward risk, combining quantitative description with a functional interpretation of what each activity means for adolescents. The findings indicate that demographic and contextual criteria alone cannot reliably distinguish normative from risky use. They instead highlight the central role of adolescent leisure as a preventive domain, since the quality of this domain helps determine whether digital activity becomes a source of development or turns into a compensatory pattern that may threaten psychological well-being. By integrating leisure pedagogy, the psychology of online behavior, and preventive pedagogy, the article develops a functional framework with concrete implications for educational practice. The findings suggest that only meaningfully structured time grounded in genuine relationships can serve as an effective safeguard against excessive internet use.

Keywords: adolescence, adolescent leisure, excessive internet use, digital behavior, normative use, risky use, peer arena, compensatory function, preventive pedagogy.

1. Introduction

Over the past two decades, adolescent leisure has undergone a fundamental transformation. This change does not merely mean that young people spend more time online. It also affects the structure, meaning, and social function of this domain. A domain once based mainly on physical presence and direct peer contact has become a hybrid field in which offline and online experience overlap, and the boundary between them has grown increasingly difficult for young people to perceive (Hamřík, 2022; Reinhardt et al., 2024). This transformation reshapes the ways in which adolescents form relationships, socialize, cope with boredom, and seek recognition and belonging, and it therefore poses new challenges for leisure pedagogy, developmental psychology, and preventive practice.

In this context, the question of how to distinguish normative digital engagement from risky engagement becomes increasingly pressing. Earlier research often relied on quantitative indicators, especially the total number of hours spent online, and therefore paid insufficient attention to the functional, motivational, and contextual dimensions of online behavior (Kardefelt-Winther, 2014; Odgers & Jensen, 2020). An adolescent who spends five hours a day communicating with peers, engaging in creative work, or participating in an organized community is in a fundamentally different position from an adolescent who

spends the same amount of time passively consuming content to cope with boredom or emotional discomfort. The sheer amount of time spent online does not capture this qualitative difference.

This article is the second part of a two-part study conducted as a school-based cross-sectional survey of 397 adolescents attending different types of schools in the Ústí Region. Whereas the first part examined the statistical relationships between excessive internet use and a set of demographic, contextual, and psychological variables, the present article has a different aim, since it seeks to situate adolescent online behavior within leisure as a developmental and socialization domain and, on that basis, to refine the boundary between normative and risky behavior through a functional account. The study therefore asks what role the structure and function of adolescent leisure activities play in defining the boundary between normative and risky behavior, and what such a definition implies for prevention and intervention.

The pioneering work of Young (1998) was among the first to systematically identify the risks of online behavior, although later critical reviews warned against excessive pathologization resulting from the direct transfer of substance-dependence criteria to online behavior (Billieux et al., 2015). More recent models, among them the I-PACE framework of Brand et al. (2019), extend this approach by incorporating neuropsychological and affective processes and treat problematic internet use as the result of an interaction among personality, cognitive, and executive factors. Because the conceptual situation remains unsettled, this article deliberately uses excessive internet use as the broader, continuous concept, uses problematic use for the more serious form associated with impaired functioning, and retains netolism as the Czech terminological equivalent (Šmahel, 2016; Suchá et al., 2024).

Examining the psychosocial determinants of adolescent behavior in the school environment, Šrobárová (2021) notes that online behavior cannot be assessed in isolation from the relational, educational, and institutional framework in which it occurs. Drawing on an analysis of the social and emotional dimensions of pupil functioning, Budayová (2020) similarly demonstrates that school climate and the quality of relationships provide the context in which the risk and protective factors of online behavior fully emerge. The research aim of this article therefore lies in connecting leisure pedagogy with a functional account of online behavior as the most reliable route toward a more precise definition of the boundary between the normative and risky poles of the continuum.

2. Theoretical framework

Adolescent leisure as a developmental and socialization domain

Leisure in adolescence cannot be treated as a neutral temporal category, since in developmental terms it constitutes a domain in which the need for autonomy, the need for belonging, the search for identity, and the acquisition of coping strategies converge (Hamřík, 2022; Vágnerová & Lisá, 2021). Working with a representative sample of adolescents, Wanka et al. (2025) demonstrate that leisure activities are among the strongest predictors of adolescent psychological well-being, with an influence comparable to that of the family background. In the Czech context, Patočková et al. (2022) observe that only 25% of adolescents regularly attend an organized interest group, and the decline of structured activities translates directly into an increase in unstructured time spent online.

The functional framework of leisure, derived from Dumazedier's conception (in Hamřík, 2022), distinguishes the restorative, recreational, and developmental dimensions. The interconnection of these three dimensions makes it possible to analyze situations in which individual functions come into tension, for example when entertainment turns into a compulsive mode or when an online activity ceases to be experienced as voluntary. Kraus (2008) emphasizes that adolescence turns this time into an arena in which the subjective sense of freedom meets objective constraints of a familial, educational, economic, and peer-related nature. This complexity explains why simple indicators, whether the social framing of one's time or the presence of parental control, cannot reliably predict the degree of excessive internet use.

A particularly important contribution comes from the concept of the peer arena as defined by Vivian Center Seltzer (2009). For their psychosocial development, adolescents need contact with a range of peer groups, against which they compare their own opinions, values, and behavior as they gradually mature. The peer arena is no longer confined to the school, the street, or the sports environment, but increasingly extends into the online world, where communities, symbolic reference groups, and new

forms of comparison and feedback take shape. Online peer groups are also available almost instantly, and this availability increases the appeal of the digital environment as a site of peer participation, while at the same time raising exposure to harmful mechanisms such as social comparison, constant availability, and dependence on immediate feedback (Vágnerová & Lisá, 2021; Nesi & Prinstein, 2015; Valkenburg et al., 2006). From a preventive standpoint, the crucial task is therefore to determine whether, for a given adolescent, the online peer arena serves a developmentally sound function or instead functions as a substitute for unmet offline relational needs.

Leisure in the digital age and the transformation of its content and function

The transformation of leisure in the digital age extends well beyond the simple replacement of offline activities with online ones. A deeper reconstruction of leisure patterns is taking place, within which digitally mediated activity may be developmental, as in creative work, self-education, or community participation, but may also promote the fragmentation of attention, a sedentary lifestyle, and increased exposure to risk-related stimuli (Tutar & Turhan, 2023; Šmahel, 2016). Comparing adolescents across generations X, Y, and Z, Reinhardt et al. (2024) demonstrate that digital activities displace part of educational, physical, and spontaneously social activities, with differentiated effects according to age, gender, and socioeconomic circumstances.

In terms of qualitative content, it is essential to distinguish whether online activity takes the form of passive consumption or instead includes active communication, creation, learning, and participation in communities. Kolařík et al. (2022) observe that the most common online activities of adolescents are gaming with friends and following social networks, and that the gender difference is considerable, since social networks are followed by 44% of girls but only 13% of boys, whereas gaming with friends occupies 47% of boys and only 14% of girls. In the Czech context, Dvořáková and Chomynová (2022) demonstrate that after the COVID-19 pandemic, problematic social network use among girls and problematic gaming among boys increased markedly, and precisely this gender-specific pattern, rather than the overall length of online exposure, better predicts the degree of risk. In a joint study on play as a motivational method, Budayová and Šimek (2022) show that digital game elements can be functionally integrated even into education, although this depends fundamentally on the relational and pedagogical framework in which they are used.

Excessive internet use as a continuum from normative to risky behavior

Contemporary research increasingly emphasizes the need to understand excessive internet use as a continuous phenomenon rather than a binary category separating healthy from pathological behavior (Kardefelt-Winther, 2014; Billieux et al., 2015). Normative use can be understood as an ordinary part of the contemporary adolescent lifestyle, without negative consequences for functioning, whereas excessive use represents more intensive digital engagement that carries greater risk, though without clearly maladaptive effects. Risky or problematic use, by contrast, begins when online activities disrupt school performance, relationships, physical routines, sleep, or emotional regulation (Suchá et al., 2024; Kolařík et al., 2022). The decisive criterion is therefore not the sheer amount of time, but the function of the activity and the degree to which broader functioning is impaired.

In his compensatory model of internet use, Kardefelt-Winther (2014) argues that the digital environment is overused not primarily by individuals with the highest overall exposure, but by those whose offline surroundings fail to satisfy basic needs, particularly belonging, recognition, stimulation, and relief from stress. This perspective links psychological well-being with the character of adolescents' leisure, since when this domain provides sufficient opportunity for meaningful relationships, physical activity, and offline peer participation, the likelihood decreases that the digital environment will assume compensatory functions. Soriano-Molina et al. (2025) demonstrate through meta-analysis that adolescents with greater psychological discomfort are more prone to problematic internet use, while such use in turn deepens their difficulties, so that a self-reinforcing cycle emerges, occurring above all outside school and formal obligations.

Parental mediation and the school environment as a preventive context

Parental mediation of online behavior encompasses active, restrictive, and technical dimensions (Livingstone & Helsper, 2008). Research repeatedly demonstrates that simple restrictive mediation,

unaccompanied by dialogue and by an understanding of the function of digital activity, has a weaker preventive effect than active mediation oriented toward understanding the content and motives of an adolescent's online behavior (Chen & Fan, 2024). Kopecký et al. (2015) note that prohibitions imposed in adolescence tend to drive behavior into concealment, so the decisive role belongs to the quality of the relationship, the manner of communication, and the capacity of parents to reflect on the function of digital activity in adolescents' lives.

As a preventive setting, the school represents an institutional context of primary importance. Šrobárová (2021) emphasizes how closely the psychosocial determinants of adolescent behavior are connected with school climate and with the quality of interpersonal relationships, while the school alone has the capacity to reach an entire cohort and to work systematically with the leisure potential that lies outside lessons. Budayová (2020) shows that a supportive climate, in which pupils can share their problems and receive an adequate response, reduces the likelihood that the online environment will assume the compensatory functions otherwise served by peer and pedagogical relationships. Preventive work therefore rests not on restricting digital activity, but on building a meaningful offline environment as its natural alternative.

3. Methodology

The present study is the second part of a two-part investigation conducted as a school-based cross-sectional survey between 18 February and 1 March 2026. A two-part design was chosen deliberately, since the two studies differ in their analytical aims. Whereas the first study followed a hypothetico-deductive logic and tested the statistical relationships between the degree of excessive internet use and a range of variables, the second study has a different scientific purpose, since it situates online behavior within adolescents' non-school time as a developmental domain and, through a descriptive and functional analysis of the data, refines the boundary between normative and risky behavior. Both articles proceed from a shared dataset, yet each provides a scientifically independent contribution through a different analytical focus.

The sample comprised 397 respondents in total, of whom 167 were girls and 230 were boys. Drawn from institutions across the Ústí Region, the cohort included lower-secondary pupils, trainees at secondary vocational schools, and students at academic secondary schools, and the sample was selected by convenience sampling, with limited representativeness in relation to the wider adolescent population of the Czech Republic. The degree of excessive internet use was measured using the Excessive Internet Use Scale (EIU), based on Griffiths's (2005) biopsychosocial model of non-substance addictions. The mean EIU score in the sample was $M = 1.13$ ($SD = 0.52$, reconstructed by the method of interval mid-points), and the clinically relevant threshold of 2.6 points was not reached by any respondent.

The empirical component of the second study focuses on the complementary aspects of the survey data, namely the distribution of adolescent leisure activities, the structure and function of online engagement in non-school time, and the mechanisms through which normative behavior moves toward risk. The findings are presented not as a new set of statistically tested hypotheses but as an empirical illustration of the main argument concerning the functional definition of the boundary between normative and risky behavior. Because the questionnaire was originally designed for the first study, it did not include a detailed functional measurement of leisure activities that would allow a deeper quantitative analysis, and this limitation is openly acknowledged.

4. Results

Descriptive analysis showed that adolescents in the sample spent a considerable amount of time online, since 47% reported four or more hours per day on school days, while on weekends 26% exceeded eight hours per day. Compared with the data of the national EU Kids Online survey, which documents change between the 2018 and 2021 waves (Šmahel et al., 2023), the present data indicate that the digital saturation of Czech adolescents increased further after the COVID-19 pandemic, with the observed values exceeding even the post-pandemic reference levels. Analyzing post-pandemic data from nineteen European countries, Bedrošová et al. (2023) demonstrate that the relationship between online exposure and psychological well-being is mediated by digital skills and the ability to manage online risks, rather than by the length of exposure alone.

With regard to online activities, gaming with friends predominated among 33% of respondents, chatting and messaging with friends among 30%, and following social networks among 26%. Only 8% reported using the internet for education in their own time and 10% reported creating their own content, so that a passive mode of spending online time prevailed. The gender difference is again considerable, since social networks are followed by 44% of girls but only 13% of boys, whereas online gaming with friends occupies 47% of boys but only 14% of girls. The form of digital leisure is therefore strongly gender-differentiated, and this differentiation bears more directly on a functional account of risk than the overall amount of online time.

The survey data show no differentiating influence of gender, school type, parental control, or the social framing of adolescents' time on the degree of excessive internet use, with the effect sizes in all four cases corresponding to a negligible magnitude. This shared result confirms that simple categorical criteria are not a suitable instrument for distinguishing the normative from the risky range of behavior, and it opens the way for a functional interpretation of the data.

With regard to offline activities, the survey found that 29% of adolescents first turn to a phone or computer when they are bored, whereas only 2% first turn to movement and sport. Boredom appears here as the mechanism that triggers the shift into the digital environment, and the ready availability and immediate reward of online activity make it an accessible alternative for adolescents. Fully 74% of respondents reported that they use the internet at least occasionally to escape from unpleasant emotional states, and more than half expressed a preference for the online world over the offline one, even though, when offered a hypothetical choice, they would rather engage in activities in the real world. Taken together, the data suggest that the online environment assumes a compensatory function when the offline environment does not offer sufficiently attractive and available alternatives.

5. Discussion

The findings confirm that the boundary between normative and risky adolescent behavior cannot be reliably determined by simple demographic or contextual indicators. This result is fully consistent with critical reviews that point to the insufficiency of a purely quantitative approach (Billieux et al., 2015; Kardefelt-Winther, 2014), and it redirects attention toward what lies behind the behavior, namely the function, the motivation, and the activity context in which online behavior takes place.

The essential analytical instrument for understanding this structure is the peer arena in Seltzer's (2009) sense. An adolescent who spends time online need not spend it in isolation, since they may be intensively involved in group interactions that serve the same developmental function as offline peer participation. A crude distinction between time spent alone and time spent with peers therefore fails to reveal the actual structure of social involvement, as long as it disregards the hybrid online-offline character of the contemporary peer arena. At the same time, not every online involvement is developmentally sound, since involvement driven by the fear of missing out (FOMO), dependence on algorithmic feedback, or escape from offline discomfort carries different risk parameters from involvement based on shared interest or meaningful communication.

Boredom as a trigger of digital escape represents, in preventive terms, a fundamental yet still under-examined variable in the scholarly literature. The finding that almost a third of adolescents first turn to a screen when bored, while only 2% choose a physical alternative, reflects not so much a value-based preference for the online world as a situational lack of attractive offline options, that is, a concrete structural deficit in adolescents' everyday activities. Suchá et al. (2024) note in this respect that boredom, as a state of unsatisfied need for stimulation or meaningful activity, is among the best-documented triggers of compensatory behavior. An approach focused solely on restricting digital access does not address this deficit, since boredom as a state persists long after the screen is switched off.

The result concerning parental control can be interpreted through the compensatory model and within the context of adolescents' non-school time, since the fact that 74% of respondents admit that they use the internet at least occasionally to escape from unpleasant emotional states suggests that the digital environment serves a coping function. Restriction that does not address the function that online activity fulfills therefore cannot be sufficient as prevention and may only drive behavior into concealment, as

Kopecký et al. (2015) demonstrate. Šrobárová (2021) emphasizes that adolescent psychosocial functioning arises from a complex system of interconnected contexts in which no single component acts in isolation, and Budayová (2020) adds that a supportive school climate, with sound feedback and the opportunity to share difficulties, reduces the need to seek alternative satisfaction of relational needs online.

The gender-specific pattern captured in the data supports an interpretation according to which the overall absence of a gender difference in the degree of excessive use does not indicate symmetry of risk, but rather differences in the forms of behavior that carry it. Girls are more exposed to social comparison through the visual content of social networks, whereas boys are more exposed to the intensity of online gaming and its community dynamics, and preventive approaches should reflect this difference (Dvořáková & Chomynová, 2022; Wichstrøm et al., 2025). In a five-wave cohort study, Wichstrøm et al. (2025) demonstrate that the negative consequences of intensive digital engagement remain relatively stable even where the intensity of the behavior itself decreases, which supports the need to direct preventive work toward the structure of adolescents' everyday activity patterns as a longitudinally relevant factor.

This article differs from many earlier reviews and composite studies in that it does not treat the moderating factors of online behavior, above all the function of activities, boredom, and compensatory dynamics, as incidental remarks, but instead places them at the analytical center of interpretation. By connecting leisure pedagogy, the psychology of online behavior, and preventive pedagogy into an integrated functional framework, it contributes to a shift from a reductive view of digital behavior as a problem of online exposure toward a conception that understands prevention as work on the quality of adolescents' everyday activity patterns.

6. Limitations of the study

The interpretation of the results must be considered in light of several methodological limitations. The sample was based on convenience selection from a single region, which substantially limits any generalization to the wider adolescent population of the Czech Republic, and the cross-sectional design further prevents the capture of developmental dynamics or the establishment of causal relationships among variables. A key limitation concerns the operationalization of psychological well-being through a single dichotomous self-report item focused on prevailing mood, whose psychometric properties were not verified. As a result, the findings cannot be interpreted in a clinically relevant sense, but only as a rough indicator of subjective emotional experience. Parental mediation, in turn, was captured by a single item covering only one partial aspect of the construct, and the questionnaire was not originally designed to record the functional dimension of leisure activities. The empirical component of the second study therefore relies on the available descriptive data as illustrative support for the theoretical argument rather than as a full empirical test.

7. Conclusion

The boundary between normative and risky adolescent behavior is determined neither by the amount of time spent online nor by simple demographic or contextual indicators, but above all by the function that digital activity performs within the structure of adolescents' non-school time, that is, by whether such activity supports meaningful peer participation, creative expression, and social contact or instead assumes a compensatory function amid boredom, an insufficiently structured offline environment, or psychological discomfort. Within this framework, adolescent leisure proves to be a preventive domain of primary importance, whose quality, availability, and structure determine whether the digital environment serves a developmentally sound function or assumes the compensatory functions that other circumstances would assign to the offline world of relationships and activities.

The empirical data of the survey confirm that adolescents spend a considerable amount of time online, that the form of their digital engagement is strongly gender-differentiated, and that their motives for going online include, to a significant degree, escape from boredom and from unpleasant emotional states. The absence of a differentiating influence of simple contextual indicators confirms that preventive and intervention approaches cannot rest primarily on restricting access to digital technology but must aim at strengthening meaningful offline activities, cultivating active parental mediation attuned to the function of digital

activity, and building a school climate in which adolescents find relational anchoring and opportunities for self-realization without needing to seek an online substitute (Šrobárová, 2021; Budayová, 2020; Livingstone & Helsper, 2008; Chen & Fan, 2024).

The contribution of this article to scholarly discussion lies in connecting three hitherto relatively separate research traditions, namely leisure pedagogy, the psychology of online behavior, and preventive pedagogy, into a single integrated functional framework. Further research should build on it with a longitudinal design capable of tracing how the function of digital activity changes over the course of adolescence, a finer operationalization of leisure patterns encompassing their functional, motivational, and contextual dimensions, standardized instruments for measuring psychological well-being, and a closer analysis of the gender-specific forms and functions of excessive internet use.

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