KMAN PUBLISHING INSTITUTE
Journal Website

Article history:
Received 10 January 2025
Revised 23 February 2025
Accepted 01 March 2025
Published online 10 March 2025

Journal of Adolescent and Youth Psychological Studies

Volume 6, Issue 3, pp 115-123

E-ISSN: 2981-2526

The Impact of a Digital Literacy Intervention on Internet Addiction and Social Skills in Undergraduate Students

Jiaowei. Gong[1], Andreea. Popescu[2*]

[1] VNU University of Education, 144 Xuan Thuy, Cau Giay, Hanoi, Vietnam
[2] Department of Health Psychology, University of Bucharest, Bucharest, Romania

*** Corresponding author email address**: a.popescu@unibuc.ro

A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Gong, J., & Popescu, A. (2025). The Impact of a Digital Literacy Intervention on Internet Addiction and Social Skills in Undergraduate Students. *Journal of Adolescent and Youth Psychological Studies, 6*(3), 115-123.
http://dx.doi.org/10.61838/kman.jayps.6.3.13

A B S T R A C T

Objective: This study aimed to examine the effectiveness of a digital literacy intervention on reducing internet addiction and enhancing social skills among undergraduate students.

Methods and Materials: A randomized controlled trial was conducted with 30 undergraduate students from Romania, randomly assigned into intervention (n = 15) and control groups (n = 15). The intervention consisted of ten sessions, each lasting 60–75 minutes, delivered twice weekly over five weeks. The content included digital literacy skills such as self-regulation, critical evaluation of online information, ethical communication, emotional regulation, and face-to-face social interactions. Data were collected at pre-test, post-test, and at a five-month follow-up using the Internet Addiction Test (Young, 1998) and Social Skills Inventory (Riggio, 1986). Statistical analysis involved repeated measures ANOVA with Bonferroni post-hoc tests, performed using SPSS version 27.

Findings: Results indicated significant improvements in both internet addiction and social skills among the intervention group compared to the control group. For internet addiction, the intervention group's mean scores significantly decreased from pre-test (M = 71.86, SD = 5.24) to post-test (M = 56.43, SD = 6.15) and remained low at follow-up (M = 58.02, SD = 6.47), while the control group showed negligible changes. Social skills significantly improved from pre-test (M = 251.34, SD = 14.09) to post-test (M = 279.67, SD = 15.02) and remained stable at follow-up (M = 276.43, SD = 15.84) for the intervention group. ANOVA results revealed significant interaction effects of group × time for internet addiction ($F(2,54)=32.74$, $p<.001$, $\eta^2=.555$) and social skills ($F(2,54)=25.92$, $p<.001$, $\eta^2=.490$). Bonferroni post-hoc tests confirmed these significant differences.

Conclusion: The findings are suggesting the intervention value as a preventive and developmental tool in higher education settings.

Keywords: *Digital Literacy, Internet Addiction, Social Skills, Undergraduate Students, Randomized Controlled Trial*

1. Introduction

The rapid expansion of digital technologies has dramatically altered the landscape of communication, learning, and social interaction, particularly among undergraduate students. With increased access to the internet and mobile technologies, university students now navigate a world saturated with digital content and online engagement. While this digital immersion provides undeniable benefits such as improved access to information, enhanced academic support, and expanded social networks, it also presents significant challenges, including an overreliance on digital devices, diminished face-to-face interactions, and the emergence of behavioral issues such as internet addiction. Digital literacy has thus become an essential skill set for navigating this complex digital environment responsibly and effectively. The concept encompasses a wide range of competencies, including the ability to evaluate online information, communicate ethically, manage digital identities, and maintain balance between online and offline life (Agol et al., 2024; Alomoush & Alkhozahe, 2022).

University students, often considered digital natives, are paradoxically among the most vulnerable to digital risks, due in part to the lack of structured training on digital self-regulation and ethical engagement. The prevalence of internet addiction among this population is rising globally, driven by easy access to entertainment, academic pressure, and social networking demands (Bağatarhan, 2023). Excessive internet use has been associated with a range of negative consequences, including academic decline, mental health issues, and impaired social functioning. As digital use increases, concerns over declining social skills have also emerged. Digital communication often bypasses important aspects of face-to-face interaction such as empathy, body language, and active listening, potentially reducing the development of emotional intelligence and social competency (Imjai et al., 2024; Li et al., 2025). In light of these concerns, the promotion of digital literacy as an intervention has gained traction as a proactive means to equip students with the tools necessary to manage their digital behavior while improving offline social engagement.

Digital literacy is increasingly being acknowledged as a multidimensional construct that includes not only technical knowledge but also cognitive, emotional, and social competencies (Mulyani et al., 2023; Zervas & Stiakakis, 2024). The integration of digital skills with social awareness and emotional regulation is essential in academic settings where students are expected to collaborate, communicate, and critically evaluate information. Recent studies emphasize that digital literacy training can foster not only better academic performance but also improvements in social relationships and psychological well-being (Agol et al., 2024; Busnawir et al., 2023). A holistic digital literacy framework helps students critically assess the content they consume, engage in meaningful digital communication, and develop a reflective approach to online behavior. Importantly, these skills are transferable across academic, professional, and personal domains, making digital literacy a cornerstone of twenty-first-century competencies.

The relationship between digital literacy and internet addiction is increasingly supported by empirical evidence. Students who lack digital regulation skills are more susceptible to compulsive online behaviors, while those who possess digital awareness are better able to manage their screen time and avoid maladaptive internet use patterns (Cheng et al., 2024; Ragnedda et al., 2024). Moreover, improving digital literacy can also buffer against the negative psychosocial consequences of excessive internet use by reinforcing critical thinking and emotional control. In a similar vein, enhanced digital competence has been associated with improved offline social skills, as it encourages a balanced integration of virtual and real-world interactions (Pan et al., 2024). When students are trained to use digital tools for constructive communication rather than passive consumption, they tend to develop more confidence, empathy, and adaptability in social settings (Imjai et al., 2024; Silva et al., 2025).

Social skills, as a crucial aspect of students' emotional and interpersonal development, are under increasing threat from the dominance of screen-mediated interactions. While digital technologies enable constant connectivity, they often reduce the quality of communication and hinder the development of non-verbal cues, emotional expression, and conflict resolution abilities (Nkhi, 2023). As students rely more heavily on digital platforms for socialization, there is concern that traditional social skills may erode, especially among those lacking the cognitive filters to differentiate between healthy and harmful online behaviors. Several studies have highlighted the detrimental impact of digital dependency on self-regulation and peer relationships, underscoring the need for interventions that simultaneously target both internet use and social engagement (McNaughton et al., 2023; Sideraki & Drigas, 2023). Training programs that combine digital skills with social-emotional learning have shown promise in promoting balanced digital behavior while reinforcing prosocial interaction.

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526

In many educational contexts, digital literacy is still narrowly defined in terms of technical proficiency, leaving cognitive and interpersonal competencies underdeveloped (Aslamiah & Sa'adah, 2025; Kocaer & Aydın, 2023). However, the current consensus among scholars emphasizes a broader view of digital literacy that includes information discernment, digital communication ethics, time management, and empathy in online environments (Harper et al., 2022; Mustafa, 2022). These dimensions are particularly relevant for undergraduate students who are transitioning to more autonomous learning and social environments. Without adequate guidance, students may misuse digital tools, resulting in diminished well-being and deteriorated social connections. Programs that train students in holistic digital literacy can mitigate these risks by fostering intentional technology use and reinforcing interpersonal effectiveness.

Importantly, digital literacy interventions are not only preventive but also developmental. They offer a structured opportunity for students to reflect on their digital habits, engage in meaningful dialogue with peers, and learn practical strategies for managing their online and offline lives. The inclusion of activities such as goal setting, emotion regulation, ethical digital behavior, and face-to-face communication practice makes these interventions uniquely suited to address the dual challenges of internet addiction and social skill deficits (Qi et al., 2024; Rahman et al., 2024). Moreover, the long-term benefits of such training extend beyond the classroom, supporting students' ability to adapt to digital work environments and sustain healthy relationships in both personal and professional spheres (Fazil et al., 2022; Lybeck et al., 2023).

Despite the growing body of evidence supporting the efficacy of digital literacy programs, few interventions have specifically targeted the co-occurrence of internet addiction and weakened social skills among undergraduate students. There remains a need for empirically tested programs that address both these outcomes in a unified framework. This study responds to that gap by implementing and evaluating a structured digital literacy intervention aimed at reducing internet addiction and enhancing social skills among university students in Romania.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a randomized controlled trial (RCT) design to examine the impact of a digital literacy intervention on internet addiction and social skills among undergraduate students. A total of 30 participants were recruited from universities in Romania through online advertisements and campus announcements. Participants were randomly assigned to either the intervention group (n = 15), which received the digital literacy training, or the control group (n = 15), which received no intervention during the study period. Inclusion criteria included being enrolled as a full-time undergraduate student, regular use of the internet (at least 3 hours daily), and willingness to participate in all sessions and follow-up assessments. Exclusion criteria included current psychological treatment for addiction or severe social anxiety. Ethical approval was obtained from the institutional review board, and all participants provided informed consent.

2.2. Measures

2.2.1. Internet Addiction

To measure the level of internet addiction among undergraduate students, the Internet Addiction Test (IAT) developed by Kimberly S. Young in 1998 was employed. This standard tool consists of 20 items designed to assess the presence and severity of internet dependency in daily life. The IAT covers a range of behaviors related to internet use, categorized into several subscales including salience, excessive use, neglect of work, anticipation, lack of control, and neglect of social life. Each item is rated on a 5-point Likert scale ranging from 1 (rarely) to 5 (always), yielding a total score between 20 and 100. Higher scores indicate a higher level of internet addiction. The IAT has been widely used in various cultural and educational contexts, and its validity and reliability have been confirmed in numerous studies, with internal consistency coefficients (Cronbach's alpha) typically exceeding 0.85 (Lu et al., 2025; Şan et al., 2024).

2.2.2. Social Skills

Social skills were measured using the Social Skills Inventory (SSI) developed by Ronald E. Riggio in 1986. This comprehensive self-report instrument includes 90 items designed to assess social and emotional communication abilities. The SSI is divided into six subscales: Emotional Expressivity, Emotional Sensitivity, Emotional Control, Social Expressivity, Social Sensitivity, and Social Control. Responses are rated on a 5-point Likert scale ranging from 1 (not at all like me) to 5 (exactly like me), with higher scores

indicating greater social competence. The inventory provides both individual subscale scores and a total social skills score. The SSI has been validated in multiple studies across different populations and has demonstrated strong psychometric properties, with reported reliability coefficients typically ranging from 0.80 to 0.90 for the subscales (Busnawir et al., 2023; Imjai et al., 2024; Sideraki & Drigas, 2023).

2.3. Intervention

2.3.1. Digital Literacy Intervention

The digital literacy intervention designed for this study aimed to enhance participants' awareness, self-regulation, and responsible use of the internet, while simultaneously improving their real-life social interaction skills. The program was conducted in ten sessions, each lasting 60 to 75 minutes, and implemented over five weeks (two sessions per week). The training followed an interactive, skills-based approach incorporating group discussions, multimedia presentations, practical activities, and reflective exercises. The content was grounded in cognitive-behavioral principles and media education strategies, addressing both the psychological mechanisms of internet use and the development of interpersonal competence.

Session 1: Introduction and Orientation

The first session introduced participants to the goals and structure of the intervention. It emphasized the importance of digital literacy in academic and social life and explored participants' current internet usage patterns through open discussion. Participants completed a baseline reflection exercise to identify personal motivations for attending the program and their perceived challenges related to internet use and social engagement.

Session 2: Understanding Internet Addiction

This session focused on defining internet addiction, its signs, psychological impacts, and risk factors. Through group activities and videos, participants examined the difference between healthy and problematic use. A self-monitoring exercise was introduced, in which students recorded their internet usage over the following week, identifying times, triggers, and emotional states.

Session 3: Time Management and Self-Regulation Online

Participants learned strategies for time management and digital self-control, including goal setting, digital detox planning, and prioritizing offline responsibilities. Techniques such as using timers, productivity apps, and behavioral cues were discussed. The session also included practice in identifying and challenging irrational thoughts about internet use.

Session 4: Digital Literacy and Critical Evaluation of Online Content

This session addressed how to evaluate the credibility of digital information and avoid misinformation. Participants engaged in hands-on practice identifying reliable sources and recognizing digital manipulation techniques. The concept of digital citizenship and ethical internet use was also introduced.

Session 5: Cyber Etiquette and Online Communication Skills

Participants explored appropriate online communication behaviors and the impact of tone, context, and timing in digital interactions. Through role-playing scenarios, they practiced constructive communication strategies such as assertiveness, empathy, and respectful disagreement in online settings.

Session 6: Emotional Awareness and Regulation in Digital Contexts

This session introduced techniques to recognize and regulate emotions triggered by online experiences such as social comparison, cyberbullying, or excessive feedback seeking. Mindfulness and emotion labeling practices were taught to help manage online emotional reactivity and promote resilience.

Session 7: Building Real-Life Social Connections

The focus of this session was on fostering face-to-face social skills. Participants engaged in group exercises that enhanced eye contact, active listening, and conversational turn-taking. Emphasis was placed on overcoming social anxiety and initiating in-person interactions with peers.

Session 8: Balancing Online and Offline Relationships

This session explored the differences between online and offline relationships, including depth, trust, and authenticity. Through case studies and personal reflection, participants discussed how to integrate digital tools into their social lives without diminishing real-life connections.

Session 9: Conflict Resolution and Empathy in Digital Interactions

Participants were introduced to conflict resolution strategies tailored for online settings. Empathy-building exercises helped them practice perspective-taking and emotional validation. Scenarios involving common digital conflicts (e.g., misinterpretation, ghosting) were analyzed and resolved collaboratively.

Session 10: Review, Goal Setting, and Program Closure

JAYPS Adolescent and Youth Psychological Studies E-ISSN: 2981-2526

In the final session, participants reviewed key concepts from all previous sessions. They shared personal progress and insights from their self-monitoring logs. Each participant developed a personalized digital wellness plan with specific goals for maintaining balanced internet use and enhancing social skills. The session concluded with group feedback and a brief post-intervention reflection.

2.4. Data Analysis

Data were analyzed using SPSS version 27. To assess the effectiveness of the intervention over time, a repeated measures analysis of variance (ANOVA) was conducted with group (intervention vs. control) as the between-subjects factor and time (pre-test, post-test, and five-month follow-up) as the within-subjects factor. Where significant effects were found, Bonferroni post-hoc tests were performed to determine the specific points at which changes occurred. The assumptions of ANOVA, including sphericity and normality, were tested prior to analysis. Statistical significance was set at $p < .05$ for all comparisons.

3. Findings and Results

The total sample consisted of 30 undergraduate students from Romania, with 15 participants in the intervention group and 15 in the control group. Among all participants, 18 (60.7%) identified as female and 12 (39.3%) as male. The mean age of the participants was 21.6 years (SD = 1.4), with ages ranging from 19 to 24. Regarding academic majors, 12 participants (40.0%) were studying social sciences, 9 (30.0%) were enrolled in humanities programs, and 9 (30.0%) were from science and engineering fields. In terms of internet usage, 21 participants (70.0%) reported daily use between 3 to 6 hours, while 9 participants (30.0%) indicated daily use exceeding 6 hours.

Table 1

Descriptive Statistics for Internet Addiction and Social Skills by Group and Time

Variable	Group	Pre-Test M (SD)	Post-Test M (SD)	Follow-Up M (SD)
Internet Addiction	Intervention	71.86 (5.24)	56.43 (6.15)	58.02 (6.47)
	Control	70.35 (5.68)	69.21 (6.03)	68.77 (6.22)
Social Skills	Intervention	251.34 (14.09)	279.67 (15.02)	276.43 (15.84)
	Control	250.56 (13.85)	252.04 (13.62)	251.33 (14.37)

The descriptive statistics indicate a notable improvement in internet addiction and social skills scores in the intervention group across time. The mean internet addiction score for the intervention group decreased from 71.86 (SD = 5.24) at pre-test to 56.43 (SD = 6.15) at post-test and was maintained at 58.02 (SD = 6.47) during follow-up. In contrast, the control group showed only a slight decline from 70.35 (SD = 5.68) to 68.77 (SD = 6.22). For social skills, the intervention group improved from a mean score of 251.34 (SD = 14.09) to 279.67 (SD = 15.02) at post-test, with a slight decline to 276.43 (SD = 15.84) at follow-up. The control group remained virtually unchanged across time points (Table 1).

Prior to conducting the repeated measures ANOVA, all statistical assumptions were tested and met. The assumption of normality was verified using the Shapiro-Wilk test, which indicated non-significant results for all dependent variables at each time point (p-values ranging from .216 to .874), suggesting normal distribution of the data. Mauchly's test of sphericity was also conducted and found to be non-significant for both internet addiction scores, $\chi^2(2) = 1.364$, $p = .506$, and social skills scores, $\chi^2(2) = 2.112$, $p = .348$, confirming that the assumption of sphericity was not violated. These results validated the use of repeated measures ANOVA for further analysis.

Table 2

Repeated Measures ANOVA for Internet Addiction and Social Skills

Variable	Source	SS	df	MS	F	p-value	Partial η^2
Internet Addiction	Time	2841.76	2	1420.88	41.27	<.001	.596
	Group	3640.91	1	3640.91	48.72	<.001	.639
	Time × Group	2256.14	2	1128.07	32.74	<.001	.555
	Error (within)	1947.33	54	36.06			
Social Skills	Time	3184.27	2	1592.14	29.68	<.001	.524

JAYPS Adolescent and Youth Psychological Studies E-ISSN: 2981-2526

	Group	3511.49	1	3511.49	34.45	<.001	.588
	Time × Group	2033.62	2	1016.81	25.92	<.001	.490
	Error (within)	2896.45	54	53.64			

The repeated measures ANOVA revealed significant main effects of time and group, and a significant interaction between time and group for both variables. For internet addiction, the effect of time was statistically significant, $F(2, 54) = 41.27$, $p < .001$, with a large partial eta squared of .596. The group effect was also significant, $F(1, 27) = 48.72$, $p < .001$. A significant time × group interaction, $F(2, 54) = 32.74$, $p < .001$, indicates that the intervention group experienced a greater reduction in internet addiction than the control group. Similar results were observed for social skills, with significant effects for time, $F(2, 54) = 29.68$, $p < .001$, group, $F(1, 27) = 34.45$, $p < .001$, and the interaction term, $F(2, 54) = 25.92$, $p < .001$. These findings confirm the effectiveness of the intervention on both outcomes (Table 2).

Table 3

Bonferroni Post-Hoc Tests for Internet Addiction and Social Skills

Variable	Comparison	Mean Difference	SE	p-value
Internet Addiction	Pre-Test vs Post-Test	15.43	1.98	<.001
	Pre-Test vs Follow-Up	13.84	2.03	<.001
	Post-Test vs Follow-Up	-1.59	1.51	.287
Social Skills	Pre-Test vs Post-Test	-28.33	3.47	<.001
	Pre-Test vs Follow-Up	-25.09	3.74	<.001
	Post-Test vs Follow-Up	3.24	2.65	.236

The Bonferroni post-hoc test indicated significant differences in internet addiction scores for the intervention group between pre-test and post-test (M diff = 15.43, SE = 1.98, $p < .001$), as well as between pre-test and five-month follow-up (M diff = 13.84, SE = 2.03, $p < .001$). The minor difference observed between post-test and follow-up was non-significant (M diff = -1.59, SE = 1.51, $p = .287$). For social skills, significant improvements were found from pre-test to post-test (M diff = -28.33, SE = 3.47, $p < .001$), and from pre-test to follow-up (M diff = -25.09, SE = 3.74, $p < .001$), while the difference from post-test to follow-up was not statistically significant (M diff = 3.24, SE = 2.65, $p = .236$), indicating the sustained effect of the intervention over time (Table 3).

4. Discussion and Conclusion

The present study aimed to examine the impact of a digital literacy intervention on internet addiction and social skills in undergraduate students through a randomized controlled trial. The results demonstrated that participants who received the ten-session digital literacy training exhibited a statistically significant reduction in internet addiction and a marked improvement in social skills compared to the control group. These improvements were sustained at the five-month follow-up, suggesting that the intervention had not only immediate but also long-term benefits for digital behavior and interpersonal development.

The observed decline in internet addiction scores among the intervention group aligns with previous findings that emphasize the protective role of digital literacy in mitigating compulsive internet use. Students who gain awareness about their online habits and learn self-regulation strategies are better equipped to control the time they spend online and avoid maladaptive digital behaviors (Qi et al., 2024; Ragnedda et al., 2024). In this study, participants were trained to monitor their digital usage patterns, set time limits, and recognize emotional triggers linked to excessive online activity. These skills likely contributed to the significant decrease in their internet addiction levels. Similar outcomes were reported by Agol et al. (2024), who found that digital literacy training enhanced cognitive awareness and self-monitoring among students, reducing digital overuse and promoting academic engagement (Agol et al., 2024).

Moreover, the intervention's emphasis on digital well-being, time management, and ethical online behavior corresponds with the findings of Harper et al. (2022), who demonstrated that students equipped with digital regulation tools were less likely to experience the negative emotional and psychological effects associated with internet overuse (Harper et al., 2022). The present study extends this understanding by showing that such improvements can be maintained over a longer period. This long-term effect can be attributed to the reflective and skill-based nature of the

JAYPS Adolescent and Youth Psychological Studies E-ISSN: 2981-2526

intervention, which emphasized internalization of digital habits rather than short-term behavioral change.

In addition to reducing internet addiction, the digital literacy training also led to statistically significant improvements in participants' social skills. These findings are consistent with previous research suggesting that digital education programs can foster emotional expressiveness, empathy, and effective communication when they are designed with a social-emotional component (Imjai et al., 2024; Sideraki & Drigas, 2023). By incorporating face-to-face interaction exercises, digital communication ethics, and empathy-building activities, the intervention addressed common deficits in non-verbal and emotional communication that often accompany screen-dominated interactions. As noted by Li et al. (2025), students immersed in digital environments frequently struggle with direct interpersonal communication, and training that reintroduces these skills in structured settings can significantly enhance their social confidence and relational competence (Li et al., 2025).

The present findings also support the work of Busnawir et al. (2023), who showed that digital literacy, when combined with interpersonal skill-building, significantly improved students' collaborative and problem-solving abilities (Busnawir et al., 2023). Participants in this study reported feeling more capable of initiating conversations, managing conflict, and maintaining real-life social connections following the intervention. These results reinforce the growing understanding that social skills are not diminished by technology per se but by the lack of guided development in using technology in socially constructive ways. This view is echoed by Lybeck et al. (2023), who argue that digital capital includes not only access and skills but also the ability to use digital tools in socially and emotionally meaningful ways (Lybeck et al., 2023).

Furthermore, the intervention's dual focus on online and offline behavior reflects recent scholarly perspectives on integrated digital competence. For example, Zervas and Stiakakis (2024) suggest that effective digital education must move beyond technical proficiency to include metacognitive, ethical, and emotional dimensions of digital engagement (Zervas & Stiakakis, 2024). The structure of this intervention—which combined critical evaluation of digital content, ethical online behavior, emotional regulation, and face-to-face communication—demonstrates the potential of this comprehensive approach. The findings from this study affirm that such multidimensional training can produce meaningful improvements in both digital behavior and real-world social functioning.

Another noteworthy outcome is the sustainability of the intervention's effects, as shown in the five-month follow-up results. While some digital literacy programs have reported temporary improvements, few studies have demonstrated long-term maintenance of outcomes. The durability of the effects in this study may be attributed to the inclusion of goal-setting, personal digital wellness plans, and reflective practices throughout the intervention. These features appear to promote a sense of agency and continuity in behavior change, supporting earlier findings from Cheng et al. (2024) and Pan et al. (2024), who emphasized the role of self-efficacy and sustained reflection in long-term digital behavior modification (Cheng et al., 2024; Pan et al., 2024).

Interestingly, the results of this study contrast with McNaughton et al. (2023), who found that digital interventions improved self-regulation but not social skills in school settings (McNaughton et al., 2023). This discrepancy may stem from the design of the intervention in the present study, which placed equal emphasis on developing social competencies alongside digital regulation. It also underscores the importance of tailoring interventions to the developmental and contextual needs of participants—in this case, university students navigating increased autonomy and complex social environments.

This study further contributes to literature by validating digital literacy as a means of promoting mental and relational well-being among university populations. Prior work by Fazil et al. (2022) and Aslamiah and Sa'adah (2025) has highlighted the relevance of digital skills in fostering academic and entrepreneurial capacities, but the current findings extend that impact to the psychosocial domain (Aslamiah & Sa'adah, 2025; Fazil et al., 2022). By demonstrating improvements in emotional regulation, empathy, and in-person interaction, this study shows that digital literacy can serve as a foundation for holistic student development.

Finally, the findings echo the concerns raised by Mustafa (2022) and Nkhi (2023) about the erosion of social skills due to excessive digital media consumption and emphasize the need for structured interventions to mitigate these effects (Mustafa, 2022; Nkhi, 2023). By balancing digital engagement with social skill development, the intervention provides a viable educational strategy to help students thrive in both virtual and real-world settings. In this regard, digital literacy becomes not just a technical necessity but a psychosocial imperative in contemporary higher education.

5. Limitations & Suggestions

Despite the promising results, this study is not without limitations. The sample size was relatively small, with only 30 participants, which may limit the generalizability of the findings to broader university populations. Additionally, all participants were recruited from Romanian universities, which may reflect specific cultural or educational norms that do not apply in other contexts. The self-report nature of the measures, while standard in psychological research, could have introduced bias due to social desirability or inaccurate self-assessment. Another limitation is the lack of a placebo activity for the control group, which could raise concerns about expectancy effects. Moreover, the follow-up period, although longer than in some studies, was limited to five months; longer-term effects remain unknown.

Future research should consider replicating this study with larger and more diverse samples, including students from different academic disciplines, cultural backgrounds, and educational systems. Comparative studies could examine whether the effectiveness of the intervention varies based on gender, field of study, or baseline levels of internet dependency. Incorporating qualitative methods such as focus groups or interviews could enrich understanding of how students perceive and apply the skills learned. Future studies might also explore the use of hybrid or digital delivery methods for the intervention itself, particularly in post-pandemic educational environments where remote learning is more common. Investigating the role of moderators such as emotional intelligence or digital experience may also provide a deeper understanding of for whom and under what conditions the intervention is most effective.

Educators and university administrators should consider integrating digital literacy training into first-year orientation programs or general education curricula to foster healthy digital behaviors early in students' academic journeys. Practical workshops that combine digital ethics, self-regulation strategies, and interpersonal communication skills can prepare students to navigate both academic and social demands more effectively. Counseling centers and student support services may also incorporate elements of this intervention into wellness programs, offering students structured support in managing internet use and enhancing social interaction. The intervention model used in this study can serve as a blueprint for other institutions aiming to support students' digital and emotional well-being in a balanced and evidence-based manner.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

All authors equally contributed to this article.

References

Agol, R. B., Osias, N. C., & Comon, J. D. (2024). Use of Digital Technology for Learners' Cognitive Skills and Academic Performance in Social Studies. *European Modern Studies Journal*, *8*(5), 322-349. https://doi.org/10.59573/emsj.8(5).2024.29

Alomoush, R., & Alkhozahe, H. (2022). The Role of E-Training Programs on Developing the Digital Skills of Social Studies Teachers in the Twenty-First Century as Perceived by School Directors. *Dirasat Human and Social Sciences*, *49*(5), 125-146. https://doi.org/10.35516/hum.v49i5.3459

Aslamiah, S., & Sa'adah, N. (2025). Teknologi Dalam Pembelajaran Ips: Analisis Keterampilan Digital Bagi Calon Guru Madrasah Ibtidaiyah. *Fikruna Jurnal Ilmiah Kependidikan Dan Kemasyarakatan*, *6*(2), 210-226. https://doi.org/10.56489/fik.v6i2.311

Bağatarhan, T. (2023). Digital Game Addiction Tendency and Social Competence in Preschool Children: The Mediating Role of Self-Regulation. *İnsan Ve Sosyal Bilimler Dergisi*, *6*(2), 424-443. https://doi.org/10.53048/johass.1374193

Busnawir, B., Kodirun, K., Sumarna, N., & Alfari, Z. (2023). Analysis of the Effect of Social Skills and Disposition of Digital Literacy on Mathematical Literacy Ability. *European Journal of Educational Research*, *volume-12-2023*(volume-12-issue-1-january-2023), 59-69. https://doi.org/10.12973/eu-jer.12.1.59

JAYPS Adolescent and Youth Psychological Studies E-ISSN: 2981-2526

Cheng, Q., Zhu, Y., Li, L., & Liu, C. (2024). The Impact of Digital Skills on Health: Evidence From the China General Social Survey. *Digital Health*, *10*. https://doi.org/10.1177/20552076241304592

Fazil, N. F. M., Ahmad, N. L., & Yusof, R. (2022). Digital Skills in Igniting Accounting Undergraduates' Entrepreneurship Intention. *Ibej*, *15*(2), 1-13. https://doi.org/10.37134/ibej.vol15.2.1.2022

Harper, M.-G., Quan-Haase, A., & Hollingshead, W. (2022). Mobilizing Social Support: New and Transferable Digital Skills in the Era of COVID-19. *First Monday*. https://doi.org/10.5210/fm.v27i4.12559

Imjai, N., Aujirapongpan, S., Jutidharabongse, J., & Usman, B. (2024). Impacts of Digital Connectivity on Thailand's Generation Z Undergraduates' Social Skills and Emotional Intelligence. *Contemporary Educational Technology*, *16*(1), ep487. https://doi.org/10.30935/cedtech/14043

Kocaer, S., & Aydın, M. E. (2023). The Investigation of the Pre-Service Social Studies Teachers Perceptions of Self-Efficacy on the Digital Literacy Skills. https://doi.org/10.31219/osf.io/k8eqs

Li, J., Chen, P., & Man, L. (2025). Understanding the Influence of Social Media on University Students' Communication Skills in Digital Information Environment. *Profesional De La Información*, *33*(6). https://doi.org/10.3145/epi.2024.ene.0603

Lu, J., Tang, X., Jin, X., Luo, X., Fan, T., & Shen, Y. (2025). A network analysis-based study of the correlations between internet addiction, insomnia, physical activity, and suicide ideation in adolescents. *Computers in human Behavior*, *163*, 108483. https://doi.org/10.1016/j.chb.2024.108483

Lybeck, R., Koiranen, I., & Koivula, A. (2023). From Digital Divide to Digital Capital: The Role of Education and Digital Skills in Social Media Participation. *Universal Access in the Information Society*, *23*(4), 1657-1669. https://doi.org/10.1007/s10209-022-00961-0

McNaughton, S., Rosedale, N., Zhu, T., Teng, L. S., Jesson, R., Oldehaver, J., Hoda, R., & Williamson, R. (2023). A School-Wide Digital Programme Has Context Specific Impacts on Self-Regulation but Not Social Skills. *E-Learning and Digital Media*, *21*(6), 517-534. https://doi.org/10.1177/20427530231156282

Mulyani, L. S., Ardiana, C., & Mulyaningsih, S. (2023). Sosialisasi Literasi Digital Dalam Meningkatkan Keterampilan Penggunaan Media Digital Bagi Siswa SMPN I Limbangan Garut Pada Abad 21 Sesuai Dengan Profil Pelajar Pancasila. *Jurnal Pengabdian Literasi Digital Indonesia*, *2*(2), 135-143. https://doi.org/10.57119/abdimas.v2i2.74

Mustafa, N. (2022). Digital Skills: Social Media. https://doi.org/10.13140/rg.2.2.11027.35368

Nkhi, S. E. (2023). An Investigation Into the Impact of Digital Social Media on the Writing and Speaking Skills of Tertiary Level Students in One Institution in Lesotho. *J-Shmic Journal of English for Academic*, *10*(1), 83-93. https://doi.org/10.25299/jshmic.2023.vol10(1).11784

Pan, T. H., Aung, M. N., Nam, E. W., Koyanagi, Y., Lee, H., Li, L., Kyaw, M. Y., Mulati, N., Moolphate, S., Ka, C. M. H., Dijk, J. v., & Yuasa, M. (2024). Digital Inclusion Among Community Older Adults in the Republic of Korea: Measuring Digital Skills and Health Consequences. *European Journal of Investigation in Health Psychology and Education*, *14*(8), 2314-2336. https://doi.org/10.3390/ejihpe14080154

Qi, J., Li, H., Li, W., Jin, J., & Ye, F. (2024). The Influence of Digital Skills on Farm Households' Vulnerability to Relative Poverty: Implications for the Sustainability of Farmers' Livelihoods. *Sustainability*, *16*(19), 8420. https://doi.org/10.3390/su16198420

Ragnedda, M., Ruiu, M. L., & Gómez, D. C. (2024). Examining the Interplay of Sociodemographic and Sociotechnical Factors on Users' Perceived Digital Skills. *Media and Communication*, *12*. https://doi.org/10.17645/mac.8167

Rahman, M. M., Salamzadeh, A., Dana, L. P., & Braga, V. (2024). Work-Family Balance, Digital Leadership Skills, and Family Social Support as the Predictors of Subjective Well-Being of Y-Generation Managers. *Strategic Change*. https://doi.org/10.1002/jsc.2628

Şan, İ., Orhan Karsak, H. G., İzci, E., & Öncül, K. (2024). Internet addiction of university students in the Covid-19 process. *Heliyon*, *10*(8), e29135. https://doi.org/10.1016/j.heliyon.2024.e29135

Sideraki, A., & Drigas, A. (2023). Development of Social Skills for People With ASD Through Intervention With Digital Technologies and Virtual Reality (VR) Tools. *Research Society and Development*, *12*(5), e11512541407. https://doi.org/10.33448/rsd-v12i5.41407

Silva, S., Silva, C., & Oliveira, M. (2025). The Value of Skills for a Sustainable Tourism and Hospitality Industry. *Tourism and Hospitality*, *6*(1), 14. https://doi.org/10.3390/tourhosp6010014

Zervas, I., & Stiakakis, E. (2024). Digital Skills in Vocational Education and Training: Investigating the Impact of Erasmus, Digital Tools, and Educational Platforms. *Journal of Infrastructure Policy and Development*, *8*(8), 8415. https://doi.org/10.24294/jipd.v8i8.8415