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EFFECT OF USE OF TECHNOLOGY ON STUDENTS' SOCIAL SKILLS AT UNDERGRADUATE LEVEL

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ABSTRACT

This study explores how technology use effects the social skills of undergraduate students in Lahore, drawing on Social Cognitive Theory as its guiding framework. A quantitative, causal comparative approach was employed, with 400 students selected through a multistage stratified sampling method from a total population of 4,015. Data were gathered using two adapted questionnaires designed to assess technology use and social skills, both of which showed strong reliability with a Cronbach's alpha value of 0.933. The data were analyzed using both descriptive methods, such as mean and standard deviation, and inferential techniques, including t tests, ANOVA, and regression analysis. The results indicate that technology use has a significant impact on students' social skills, particularly in areas such as relationship building, emotional regulation, and verbal and nonverbal communication. Overall, the findings highlight that although technology is an integral part of students' lives, using it in a balanced and thoughtful manner is important for promoting healthy social development.

Keywords: *Technology use, social skills, Relationship building, Emotional management, Verbal communication, and non-verbal communication.*

INTRODUCTION

Technology can be understood as the use of digital devices, systems, and online platforms that allow individuals to generate, distribute, and exchange information efficiently. With the continuous evolution of internet technologies, especially interactive and user driven environments often associated with Internet 2.0, people are now able to communicate, collaborate, and engage with others across the globe instantly. This transformation has fundamentally altered how individuals connect and acquire knowledge, making communication more immediate, widely available, and less constrained by physical distance (Chawinga, 2017). As a result, everyday interactions have become more dynamic and flexible, reshaping both personal and professional communication patterns (Wardynski, 2019).

Social skills, in contrast, refer to a range of interpersonal abilities that support effective communication and interaction with others. These include the capacity to build and maintain relationships, regulate emotions, interpret social cues, and express thoughts through both verbal and nonverbal means. Empathy also plays a central role, as it enables individuals to understand and respond appropriately to others' feelings. Such competencies are essential for success in academic settings as well as in broader social contexts. However, an overdependence on digital

technologies may interfere with the development and application of these skills. Research has shown that extended use of mobile phones and online platforms can be linked to lower emotional stability and weaker interpersonal bonds, suggesting a potential decline in the quality of real life social interactions (Roberts et al., 2014; Roberts et al., 2015).

The association between technology use and social skills is not linear but rather complex and multidimensional. On the positive side, digital platforms create opportunities for individuals to connect with diverse populations, broaden their cultural perspectives, and participate in more open forms of communication. In some cases, the sense of anonymity provided by online environments encourages individuals to express themselves more freely, which can enhance confidence and participation (Hertlein & Blumer, 2013; Kim, 2018). These platforms can also support collaborative learning and community building, particularly in educational contexts where students interact beyond traditional classroom boundaries.

Conversely, excessive engagement with technology may reduce the frequency and quality of face-to-face interactions, which are critical for developing strong social competencies. Limited in person communication can contribute to social withdrawal, reduced emotional intelligence, and challenges in interpreting nonverbal cues such as facial expressions and body language (Muusses et al., 2011; Twenge, 2017; Turkle, 2012). Furthermore, heavy reliance on digital communication may restrict opportunities to practice real world social behaviors, which are essential for fostering empathy, active listening, and effective interpersonal communication. Over time, this imbalance can affect individuals' ability to form meaningful relationships and navigate complex social situations.

Considering the widespread adoption of smartphones and digital technologies among students, particularly at the undergraduate level, it becomes increasingly important to examine how these tools influence social development. Technology now plays a central role in shaping students' academic experiences as well as their social lives, offering both significant advantages and notable challenges. While it can enhance access to information and facilitate communication, its excessive or unregulated use may hinder the development of essential social skills. Therefore, a deeper understanding of this relationship is necessary to encourage responsible and balanced technology use, ultimately supporting students' social and emotional wellbeing.

Research Objectives

The study is designed to accomplish the following objectives

1. To investigate the use of technology among undergraduate students.
2. To examine the relationship between technology use and students' social skills at the undergraduate level.
3. To examine the effect of technology use on students' social skills at the undergraduate level.

Research Questions

In line with these objectives, a set of research questions was formulated to guide the investigation.

1. What is the level of technology use among undergraduate students?
2. What is the relationship between technology use and students' social skills at the undergraduate level?
3. What is the effect of technology use on students' social skills at the undergraduate level?

Literature Review

Technology has become deeply embedded in students' academic and social lives, influencing not only how they communicate but also how they learn, think, and build relationships. The rapid adoption of smartphones, social media platforms, and various digital tools has reshaped everyday interactions, allowing students to remain constantly connected with peers, teachers, and information sources. Communication is now more immediate and continuous, often extending beyond physical classrooms into virtual spaces where discussions, collaboration, and knowledge sharing take place in real time. This shift has also encouraged new forms of learning, such as online research, digital collaboration, and self-directed

study, making education more flexible and accessible (Junco, 2012; Selwyn, 2007).

Technology Usage and Student Interaction

Modern students make extensive use of smartphones and social media platforms for both communication and academic activities. These digital tools allow instant interaction through text messaging, voice calls, and video communication, making it easier for students to stay connected at all times. Studies indicate that students spend a significant amount of time each day on mobile devices, with a considerable portion devoted to social networking activities (Lepp, Barkley, & Karpinski, 2015). Social media platforms also support the sharing of information, collaboration on academic tasks, and maintenance of social relationships, which can strengthen connectivity and engagement among students (Ellison, Steinfield, & Lampe, 2007).

However, despite these advantages, an overdependence on digital communication may reduce opportunities for face-to-face interaction. Direct, in person communication plays a crucial role in developing essential interpersonal skills such as empathy, active listening, and the ability to interpret nonverbal cues. When students rely heavily on online interaction, they may have fewer chances to practice these skills in real life, which can affect the quality of their social relationships and overall social competence (Kuss & Griffiths, 2017).

Social Cognitive Theory and Technology Use

The theoretical framework of this study is grounded in Albert Bandura's Social Cognitive Theory. According to Bandura (1986), human behavior is learned through processes such as observation, imitation, and interaction within a social environment. In the context of technology use, students are continuously exposed to online behaviors, communication styles, and social norms, which they may adopt and replicate in their own interactions. This means that digital environments do not just facilitate communication but also actively shape how students behave socially.

A key concept within this theory is reciprocal determinism, which suggests that behavior, personal factors, and environmental influences operate together and continuously affect one another (Bandura, 2001). Applied to technology use, this implies that students' online environments, their personal attitudes, and their communication behaviors are interconnected. For example, the type of content students engage with online can influence their attitudes and social responses, while their own behavior can also shape the digital spaces they participate in. Therefore, digital platforms play a powerful role in influencing students' social development and patterns of interaction.

Technology and Development of Social Skills

Social skills involve the ability to communicate, interact, and form relationships effectively with others. These skills include verbal and nonverbal communication, emotional awareness, and the capacity to build and maintain relationships (Alhabeeb, 2018). With the growing use of digital communication, concerns have emerged regarding its influence on these abilities. Research indicates that excessive engagement with technology can reduce opportunities for face-to-face interaction, which is essential for developing strong interpersonal competence (Uhls et al., 2014). In addition, online communication often lacks important nonverbal elements such as facial expressions, gestures, and tone of voice, which can result in misunderstandings and limit the depth of emotional connection between individuals (Kushlev et al., 2017). As a result, students who rely heavily on digital platforms may experience challenges in interpreting social cues and responding appropriately in real life situations.

Emotional and Psychological Effects of Technology

The frequent use of smartphones and social media has also been linked to various emotional and psychological outcomes. Studies suggest that excessive engagement with social media platforms can contribute to negative social comparison, increased anxiety, and lower self-esteem (Kross et al., 2013). Constant exposure to curated online content may lead students to compare their lives with others, which can affect their emotional well-being. Furthermore, a high level of dependence on smartphones has been associated with emotional instability and a decline in overall well-being (Roberts, Pullig, & Manolis, 2015). These findings highlight that overuse of technology not only

affects communication patterns but can also influence emotional regulation and social behavior among students.

Social Skills and Their Importance

Social skills play a vital role in students' academic achievement, personal growth, and future professional success. They allow individuals to communicate effectively, express emotions in appropriate ways, and establish meaningful relationships with others (Riggio, 1986). Students who possess strong social skills are more likely to engage actively in classroom discussions, collaborate in group work, and adapt to different social environments, which can positively impact their academic performance (Harrington, 2014). Moreover, effective interpersonal communication and social competence are essential for navigating both academic and real world situations, making them key components of overall development.

Components of Social Skills

Social skills are made up of several interconnected abilities that support effective interaction and communication. These include relationship building, emotional management, self regulation, as well as verbal and nonverbal communication skills. Relationship building involves the ability to create and maintain positive and meaningful connections with others. Emotional management refers to recognizing, understanding, and controlling one's emotions in different situations (Salovey & Mayer, 1990). Self-regulation, on the other hand, is the ability to manage one's behavior, attention, and responses appropriately. In addition, verbal and nonverbal communication skills play a crucial role in expressing ideas clearly and interpreting others' messages accurately, including cues such as tone, gestures, and facial expressions (Knapp & Hall, 2002).

Balancing Technology Use and Social Development

While technology provides numerous academic and social advantages, maintaining a balance in its use is essential for healthy development. Excessive engagement with digital devices can reduce real life social interaction, which may weaken the development of important social skills (Anar et al., 2022). To address this, the development of digital literacy is important, as it enables students to use technology in a responsible and purposeful way. A balanced approach, where students engage in both online and face to face communication, has been shown to support stronger social competence and more effective interpersonal relationships (Livingstone, 2008).

Overall, existing literature suggests that technology has both beneficial and harmful effects on students' social skills. On one hand, it improves communication, access to information, and connectivity. On the other hand, excessive use can limit interpersonal interaction and hinder emotional development. Social Cognitive Theory offers a useful framework for understanding this relationship, as it explains how students' behaviors are shaped through observation and interaction with their environment, including digital spaces (Bandura, 1986).

Research Design

This study adopted a descriptive approach and employed a causal comparative research design to investigate the impact of technology use on the social skills of undergraduate students. According to Fraenkel, Wallen, and Hyun (2019), this type of design involves comparing groups that differ in terms of an independent variable in order to explore potential cause and effect relationships. In the present study, technology usage is treated as the independent variable, while students' social skills are considered the dependent variable.

Sample

The study population included all undergraduate students enrolled in public universities in Lahore, with a total population of 4,015 students. To obtain a representative sample, a multistage stratified random sampling technique was employed. In the first stage, three public universities were selected from a total of fifteen universities in Lahore. In the second stage, the Department of Education was chosen from each selected university. In the final stage, undergraduate students were randomly selected from these departments to ensure fair representation.

The final sample consisted of 400 undergraduate students drawn from three universities. These included 256 students from the University of the Punjab, 74 students from the University of Education, and 70 students from Lahore College for Women University.

Instrumentation

Data were collected using a structured questionnaire developed by the researcher. The questionnaire was divided into three main sections. Section A collected demographic information of the participants. Section B consisted of 10 items designed to measure technology usage, which were adapted from a questionnaire developed by Ernest John Manalo (2021). Section C included 24 items focused on measuring students' social skills, adapted from the Social Skills Survey (SSS) developed by Hafiz Inam.

This section assessed five key dimensions of social skills, including relationship building skills with 6 items, emotional management with 5 items, self-regulation skills with 5 items, verbal communication skills with 4 items, and nonverbal communication skills with 4 items.

Procedure

After receiving approval from the relevant university authorities, data collection was carried out in three selected public universities in Lahore, namely the University of the Punjab, the University of Education, and Lahore College for Women University. The questionnaires were personally distributed among randomly selected undergraduate students enrolled in the Department of Education.

Before distribution, the purpose of the study was clearly explained to the participants. They were also assured that their responses would remain confidential and that participation was voluntary. Clear instructions were provided to ensure accurate completion of the questionnaire. The researcher remained present during the process to address any queries or difficulties faced by the respondents. Once completed, all questionnaires were collected immediately on the spot. The responses were then coded and prepared for statistical analysis using SPSS.

Data Analysis

The collected data was analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics such as mean and standard deviation were used to summarize and describe the data.

In addition, inferential statistical techniques were applied to examine relationships and differences within the data. Regression analysis was used to determine the effect of technology usage on students' social skills. Independent sample t tests and ANOVA were also employed to identify significant differences among different groups of respondents.

Data Analysis and Interpretation

Table 1

Mean and Standard Deviation Statistics of Factors

	N	Mean	Std. D
Technology usage	400	27.49	6.82
Relationship building skill	400	14.54	3.76
Emotional management	400	13.60	3.46
Self-regulation skill	400	12.78	3.51
Verbal communication skill	400	9.65	3.23
Non-verbal communication skill	400	9.93	2.79

Table 1 shows that technology usage had the highest mean score (M = 27.49, SD = 6.28), indicating a high level of use among students. Among social skills, relationship building ranked highest (M = 14.54, SD = 3.76), followed by emotional management (M = 13.60, SD = 3.46) and self-regulation (M = 12.78, SD = 3.51). Verbal communication (M = 9.65, SD = 3.23) and nonverbal communication (M = 9.93, SD = 2.79) showed lower mean scores, with nonverbal communication being the weakest area.

Table 2
Coefficient model to determine the predictive power of technology usage on relationship building skill

Model	Unstandardized co-efficient	Standardized co-efficient						
	B	Std. Error	β	T	p	Df	F	R^2
RBS	8.19	.711		11.52	.000	399	84.62	.175
TU	.231	.025	.491	9.19				

Dependent variable: Relationship building skill

Table 2 presents the results of a linear regression analysis conducted to examine the effect of technology usage on relationship building skills. The findings reveal that technology usage has a statistically significant impact on relationship building skills, with a coefficient of determination (R^2) value of 0.175 at the $p < 0.05$ level. This indicates that 17.5% of the variation in students' relationship building skills can be explained by their level of technology usage. Furthermore, the results show that technology usage is a significant predictor of relationship building skills, with a beta value ($\beta = 0.491$), an F value of 84.62, and a significance level of $p < 0.05$. These results suggest a meaningful relationship between technology use and students' ability to develop and maintain interpersonal relationships, confirming that technology usage accounts for 17.5% of the variance in relationship building skills.

Table 3
Coefficient model to determine the predictive power of technology usage on emotional management

Model	Unstandardized co-efficient	Standardized co-efficient						
	B	Std. Error	β	T	p	Df	F	R^2
EM	5.93	.603		9.83	.000	399	171.68	.301
TU	.279	.021	.549	13.10				

Dependent variable: Emotional Management

Table 3 presents the results of a linear regression analysis conducted to examine the effect of technology usage on emotional management. The findings show that technology usage has a statistically significant impact on emotional management, with a coefficient of determination (R^2) value of 0.301 at the $p < 0.05$ level. This indicates that 30.1% of the variation in students' emotional management skills can be explained by their level of technology usage. In addition, the results demonstrate that technology usage is a significant predictor of emotional management, with a beta value ($\beta = 0.549$), an F value of 171.68, and a significance level of $p < 0.05$. These results suggest a strong relationship between technology use and students' ability to manage their emotions, confirming that technology usage accounts for 30.1% of the variance in emotional management skills.

Table 4
Coefficient model to determine the predictive power of technology usage on self-regulation skill

Model	Unstandardized co-efficient	Standardized co-efficient						
	B	Std. Error	B	T	p	df	F	R^2
SRS	6.82	.664		10.28	.000	399	85.51	.177
TU	.217	.023	.421	9.24				

Dependent variable: Self-regulation skill

Table 4 indicates that linear regression was applied to examine the effect of technology usage on self-regulation skills. The results show that technology usage is statistically significant ($R^2 = 0.177$) at the $p < 0.05$ level. The R^2 value indicates that 17.7%

of the total variance in self-regulation skills is explained by technology usage. Furthermore, technology usage significantly affects self-regulation skills with a beta value (β = 0.421), an F value of 85.51, and a significance level of $p < 0.05$, indicating that 17.7% of the variance in self-regulation skills is due to technology usage.

Table 5
Coefficient model to determine the predictive power of technology usage on verbal communication skill

Model	Unstandardized co-efficient	Standardized co-efficient						
	B	Std. Error	β	t	p	df	F	R^2
VCS	5.98	.646		9.27	.000	399	34.35	.282
TU	.134	.023	.282	5.86				

Dependent variable: Verbal Communication skill

Table 5 indicates that linear regression was applied to examine the effect of technology usage on verbal communication skills. The results show that technology usage is statistically significant ($R^2 = 0.282$) at the $p < 0.05$ level. The R^2 value indicates that 28.2% of the total variance in verbal communication skills can be explained by technology usage. Moreover, technology usage significantly affects verbal communication skills, with a beta value (β = 0.282), an F value of 34.35, and a significance level of $p < 0.05$, indicating that 28.2% of the variance in verbal communication skills is attributed to technology usage.

Table 6
Coefficient model to determine the predictive power of technology usage on non-verbal communication skill

Model	Unstandardized co-efficient	Standardized co-efficient						
	B	Std. Error	B	t	p	df	F	R^2
NVCS	4.69	.515		9.10	.000	399	110.11	.217
TU	.191	.018	.466	10.49				

Dependent variable: Non-verbal Communication skill

Table 6 indicates that linear regression was applied to examine the effect of technology usage on non-verbal communication skills. The results show that technology usage is statistically significant ($R^2 = 0.217$) at the $p < 0.05$ level. The R^2 value indicates that 21.7% of the total variance in non-verbal communication skills can be explained by technology usage. In addition, technology usage significantly affects non-verbal communication skills, with a beta value (β = 0.466), an F value of 110.11, and a significance level of $p < 0.05$, indicating that 21.7% of the variance in non-verbal communication skills is due to technology usage.

Discussion

The findings indicate that technology usage has a significant impact on the social skills of undergraduate students. The results show that male and female students use technology at almost the same level, suggesting that access to digital devices and online platforms is now fairly equal across genders. This aligns with earlier research which highlights a narrowing gender gap in technology use due to the widespread availability of smartphones and internet access (Helsper, 2010).

However, notable differences were observed in relation to age and academic year. Younger students and those in the early years of their degree programs tend to use technology more frequently. This pattern supports the idea of "digital natives" introduced by Prensky (2001), which describes

younger generations as being more familiar and comfortable with digital technologies. These students are more dependent on online platforms for both communication and academic purposes.

The results further demonstrate that technology usage significantly influences emotional management, communication abilities, and relationship-building skills. While students often use digital platforms to express or regulate emotions, excessive reliance on these tools may reduce opportunities for genuine emotional expression and direct interpersonal interaction. This finding is consistent with Turkle (2011), who argued that overdependence on digital communication can weaken face-to-face social skills and emotional depth.

In addition, non-verbal communication skills were also affected, as students increasingly rely on online communication that does not include physical cues such as facial expressions, gestures, and body language. According to Uhls et al. (2014), limited exposure to face-to-face interaction can negatively affect the development of non-verbal communication abilities, which are essential for effective interpersonal understanding.

Overall, the findings suggest that although technology improves communication and enhances connectivity, its excessive use may hinder the development of essential social skills among students.

Conclusion

The study concludes that technology usage has a significant effect on undergraduate students' social skills. It influences multiple dimensions, including relationship-building, emotional management, self-regulation, verbal communication, and non-verbal communication. The results also indicate that age and academic year play an important role in shaping technology usage patterns, while gender shows minimal influence. Younger students tend to use technology more frequently compared to their older counterparts. Overall, the study emphasizes that although technology is an important tool for learning and communication, its balanced and controlled use is necessary to support healthy social development among students.

Recommendations

1. Universities should encourage a balanced approach to technology use by promoting both digital learning and face-to-face interaction.
2. Training sessions should be organized to enhance students' emotional management, communication, and self-regulation skills.
3. Teachers should guide students toward the responsible and purposeful use of technology.
4. Awareness programs should be introduced to inform students about both the benefits and risks of excessive technology use.
5. Parents and educators should help monitor students' screen time and encourage participation in real-life social activities.
6. Students should be motivated to take part in group activities and interpersonal interactions to strengthen their social skills.

REFERENCES

Alhabeeb, A. (2018). E-learning critical success factors: Comparing perspectives from academic staff and students. *Computers & Education, 127*, 1–12.

Alexander, B. (2004). Going nomadic: Mobile learning in higher education. *Educause Review, 39*(5), 28–34.

Anar, K., Sanim, K., Turagulovna, G., Ayupova, M.D., Aurenova, B., & Aubakirova, Zh.T. (2022). University students' relationship with technology: Psychological effects on students. *World Journal on Educational Technology, 14* (4), 1225-1233.

Andreea, M. (2015). Education 2.0: E-Learning Methods. *Procedia - Social and Behavioral Sciences, 183*, 376-380.

Arksey, H. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology, 8*(1), 19–32.

Azeiteiro, U. (2015). Education for sustainable development through e-learning in higher education. *Journal of Cleaner Production, 106*(1), 308-319.

Bada, A. (2021). E-learning facilities for teaching secondary school physics: awareness, availability and utilization. *Research in Social Sciences and Technology, 6*(3), 227–241.

Bailenson, N. (2008). The use of immersive virtual reality in the learning sciences: Digital transformations of teachers, students, and social context. *The Journal of the Learning Sciences, 17*(1), 102–141.

Banditvilai, C. (2016). Enhancing students' language skills through blended learning. *EJEL, 14*(3).

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.

Campbell, M. A. (2005). Cyber bullying: An old problem in a new guise? *Australian Journal of Guidance and Counseling, 15*(1), 68–76.

Chen, P. S. D., Lambert, A. D., & Guidry, K. R. (2010). *Engaging online learners: The impact of Web-based learning technology on college student engagement. Computers & Education, 54*(4), 1222-1232.

Church, K., & De Oliveira, R. (2013, August). What's up with WhatsApp? Comparing mobile instant messaging behaviors with traditional SMS. *In Proceedings of the 15th international conference on Human-computer interaction with mobile devices and services* (pp. 352-361).

Cochran, W., & Cox, G. (1957). Experimental designs (2nd ed.). New York: Wiley.

Dahlstrom, E., Brooks, D. C., & Bichsel, J. (2014). The current ecosystem of learning management systems in higher education: Student, faculty, and IT perspectives.

DeAndrea, D. C., Ellison, N. B., LaRose, R., Steinfield, C., & Fiore, A. (2012). Serious social media: On the use of social media for improving students' adjustment to college. *The Internet and Higher Education, 15*(1), 15-23.

Drago, E. (2015). The effect of technology on face-to-face communication. *Elon Journal of Undergraduate Research in Communications, 6*(1).

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication, 12*(4), 1143-1168.

Frankel, J. R., Wallen, N. E., & Hyun, H. H. (2019). *How to design and evaluate research in education* (8th ed.). McGraw-Hill Education.

Gapsiso, N., & Wilson, J. (2015). The impact of the internet on teenagers' face-to-face communication. *Journal of Studies in Social Sciences, 13*(1).

Gautam, A. (2009). Mobile learning: An effective way of teaching and learning English language. *International Journal on Studies in English Language and Literature, 3*(2), 50–52.

Gay, L.R. (2014). Educational research: *Competencies for analysis and application.* Pearson.

Harrington, A. (2014). E-learning & information communication technology (ICT) in nursing education: A review of the literature. *Nurse Education Today, 34*(10), 1311-1323.

Hawthorne, S. (2011). Technology and the decline of interpersonal communication. *British Journal of Educational Technology, 42*(5), 895-915.

Hertlein, K. M., & Blumer, M. L. C. (2013). The couple and family technology framework: Intimate relationships in a digital age. *Family Relations, 62*(3), 427-442.

Jones, L. M., & Mitchell, K. J. (2016). Defining and measuring youth digital citizenship. *New Media & Society, 18*(9), 2063-2079.

Junco, R. (2012). The relationship between frequency of Facebook use, participation in Facebook activities, and student engagement. *Computers & Education, 58*(1), 162-171.

Kim, H. S. (2018). Culture and the internet: The challenge of global communication. *International Journal of Intercultural Relations, 65*, 36-45.

Kimberly, A. (2009). *Identifying indicators and tools of relationship and emotional skills*. Spring Final Report April, 2009 Public Health Agency of Canada.

King, A., Valenca, A., Silva, A., Bacynzki, T., Carvalho, M., & Nardi, A. (2013). Nomophobia: Dependency on virtual environments or social phobia? *Computers in Human Behavior, 29*(1), 140-144.

Knapp, M. L., & Hall, J. A. (2002). *Nonverbal communication in human interaction*. Crawfordsville, IN: Thomson Learning.

Konrath, S. H., O'Brien, E. H., & Hsing, C. (2011). Changes in dispositional empathy in American college students over time: A meta-analysis. *Personality and Social Psychology Review, 15*(2), 180-198.

Kross, E., Verduyn, P., Demiralp, E., Park, J., Lee, D. S., Lin, N., ... & Ybarra, O. (2013). Facebook use predicts declines in subjective well-being in young adults. *PloS One, 8*(8), e69841.

Kuatbekov, A. (2021). E-Learning as a basis for the development of media competences in students. *Journal of Information Science, 49*(4).

Kushlev, K., Proulx, J., & Dunn, E. W. (2016, May). " Silence your phones" Smartphone notifications increase inattention and hyperactivity symptoms. In *Proceedings of the 2016 CHI conference on human factors in computing systems* (pp. 1011-1020).

Lepp, A., Barkley, J. E., & Karpinski, A. C. (2014). The relationship between cell phone use, academic performance, anxiety, and satisfaction with life in college students. *Computers in Human Behavior*, 31, 343-350.

Lenhart, A. (2015). *Teens, social media & technology overview* 2015.

Livingstone, S. (2008). *Internet literacy: Young people's negotiation of new online opportunities* (pp. 101-121). MIT Press.

Muusses, L., Finkenauer, C., Kerkhof, P., & Righetti, F. (2015). Partner effects of compulsive internet use: A self-control account. *Communication Research, 42*(3), 365-386.

Nehme, M. (2017). E-learning and students' motivation. *Legal Education Review, 20*(1), 223-239.

Orodho, J. A. (2009). Element of education and social science research methods. *Maseno: Kanezja Publisher.*

Pavithra, M., Suwarna, M., & Mahadeva, M. (2015). A study on Nomophobia - mobile phone dependence, among students of a medical college in Bangalore. *National Journal of Community Medicine, 6*(2), 340–344.

Przybylski, A. K., & Weinstein, N. (2013). Can you connect with me now? How the presence of mobile communication technology influences face-to-face conversation quality. *Journal of Social and Personal Relationships, 30*(3), 237-246.

Rideout, V. J., Foehr, U. G., & Roberts, D. F. (2010). Generation M 2: Media in the Lives of 8-to 18-Year-Olds. *Henry J. Kaiser Family Foundation*.

Roberts, J., Pullig, C., & Manolis, C. (2015). I need my smartphone: A hierarchical model of personality and cell-phone addiction. *Personality and Individual Differences, 79*(1), 13–19.

Roberts, J., Yaya, L., & Manolis, C. (2014). The invisible addiction: Cell-phone activities and addiction among male and female college students. *Journal of Behavioral Addictions, 3*(4), 254–265.

Romero-López, M., Pichardo, C., De Hoces, I., & García-Berbén, T. (2021). Problematic internet use among university students and its relationship with social skills. *Brain Sciences, 11*(10), 1301.

Rosen, L. D., Lim, A. F., Felt, J., Carrier, L. M., Cheever, N. A., Lara-Ruiz, J. M., ... & Rokkum, J. (2014). Media and technology use predicts ill-being among children, preteens and teenagers independent of the negative health impacts of exercise and eating habits. *Computers in Human Behavior, 35*, 364-375.

Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition and Personality, 9*(3), 185-211.

Selwyn, N. (2007). The use of computer technology in university teaching and learning: A critical perspective. *Journal of Computer Assisted Learning, 23*(2), 83-94.

Serpil, Y. (2021). The effectiveness of different E-learning modalities. *The Effectiveness of Different E-learning, 36*(5).

Steinfield, C., Ellison, N. B., & Lampe, C. (2008). Social capital, self-esteem, and use of online social network sites: A longitudinal analysis. *Journal of Applied Developmental Psychology, 29*(6), 434-445.

Straker, L., Pollock, C., & Maslen, B. (2009). Principles for the wise use of computers by children. *Ergonomics, 52*(11), 1386-1401.

Straker, L. M., & Mathiassen, S. E. (2009). Increased physical loads in modern work – a necessity for better health and performance? *Ergonomics, 52*(10), 1215–1225.

Tran, P., & Subrahmanyam, K. (2013). Evidence-based guidelines for the informal use of computers by children to promote the development of academic, cognitive and social skills. *Ergonomics, 56*(9), 1349-1362.

Tu, C. H., & McIsaac, M. (2002). The relationship of social presence and interaction in online classes. *The American Journal of Distance Education, 16*(3), 131-150.

Turkle, S. (2012). *Alone together: Why we expect more from technology and less from each other*. Basic Books.

Twenge, J. M. (2017). *iGen: Why today's super-connected kids are growing up less rebellious, more tolerant, less happy-and completely unprepared for adulthood-and what that means for the rest of us*. Simon and Schuster.

Uhls, Y. T., Michikyan, M., Morris, J., Garcia, D., Small, G. W., Zgourou, E., & Greenfield, P. M. (2014). Five days at outdoor education camp without screens improves preteen skills with nonverbal emotion cues. *Computers in Human Behavior*, *39*, 387-392.

Underwood, M. K., Ehrenreich, S. E., More, D., Solis, J. S., & Brinkley, D. Y. (2015). The BlackBerry project: The hidden world of adolescents' text messaging and relations with internalizing symptoms. *Journal of Research on Adolescence, 25*(1), 101-117.

Wardynski, E. A. (2019). College students and their digital devices: Results from a cross-sectional study. *Journal of College Student Development*, *60*(2), 222-228.

Wiklund, H. (2014). Learning paradigms in workplace e-learning research. *Knowledge Management & E-Learning, 6*(3), 299–315.