



A STUDY ON THE IMPACT OF SMARTPHONE ON YOUNGER GENERATION WITH REFERENCE TO FAMILY, PEER GROUP, AND LEARNING

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Abstract

The adoption of the mobile phone by young people has been a global phenomenon in recent years. It is now an integral part of adolescents' daily lives and is for the majority, the most popular form of electronic communication. In fact, the mobile phone has turned from a technological tool to a social tool. This paper explores the impact of the mobile phone on youth peer relationships, on family relationships and on the institution of the school. Young people use the mobile phone in positive ways to organise and maintain their social networks. However, there are also negative impacts on young peoples' peer relationships. These can include ostracism and cyber bullying. Similarly, the mobile phone has lead to changed dynamics in the family, with issues of safety and surveillance from a parental perspective leading to negotiated changing freedoms for young people. While functional coordination can be beneficial for the family, other problems can arise such as financial difficulties, non-custodial parent access, as well as over reliance on the mobile phone for safety issues and intrusion into young peoples' lives. The impact of the mobile phone on the school as an institution has not however, received as much research. Disruptions to lessons, incidences of cheating and bullying are some of the negative impacts, while texting parents of truants seems to be the only positive for the school. Further research is needed into the consequences of mobilephone use in schools.

Keywords: Smartphone, Cell Phone, Mobile phones, younger generation; peer group, relationships, schools, family.

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1. INTRODUCTION

Cell phone usage has become excessive worldwide, with over 6.5 billion users globally, and young adults, in particular, spend more time on their phones for various purposes such as social media, gaming, communication, and academics. Concerns have been raised about the potential negative impact on the mental and physical health of young adults due to excessive cell phone use.

Mobile phone addiction is increasingly recognized as a serious psychosocial condition, involving brain circuits similar to substance-based and other behavioral addictions. While there is a widespread concern about the connection between social well-being and mobile phone usage, the evidence supporting this link is less conclusive.

The introduction of the fixed telephone in the late 19th century revolutionized communication, and similarly, the mobile phone has had a significant impact in the 21st century. Originally designed for adult business use, mobile phones quickly gained popularity among young people due to reduced costs and improved accessibility. The adoption rate among adolescents has been astonishing, with surveys worldwide showing high rates of mobile phone ownership in this age group.

Young people not only own mobile phones but also have a strong emotional attachment to them. Surveys consistently indicate that they prefer their phones over television or the Internet. Mobile phones are not just tools for communication but also symbols of status, fashion accessories, and a source of independence from the family.

The impact of the mobile phone extends to various social institutions, including peer groups, families, and schools. While it has brought positive changes in communication and coordination within peer groups, there are also negative aspects, such as using phones to avoid face-to-face conversations and potential ostracism of those without phones.

The Fourth Industrial Revolution has driven interest in integrating information and communication technology, particularly smartphones, into education. Smartphones are widely perceived as convenient tools for communication and learning, and studies have explored their positive impacts in educational contexts. However, some studies have questioned their integration and potential negative effects on academic performance.

The COVID-19 pandemic forced schools to transition to online learning, and parents' views on smartphone usage for online education have been varied. Some parents opposed the use of smartphones in online learning, while others

allowed their children to use them for attending virtual classes. Further research and discussions on the role of smartphones in online education are needed due to inconsistent findings.

Overall, the prevalence of mobile phone usage among young people, along with their emotional investment, has reshaped social interactions and communication patterns. While mobile phones offer numerous benefits, there are also concerns about potential negative consequences, particularly regarding mental health and academic performance.

2. OBJECTIVES OF THE STUDY

- i. To study the impact of the mobile phone the peer group
- ii. To study the impact of the mobile phone on the learning
- iii. To study impact of the mobile phone on the family
- iv. To study impact of the mobile phone on the institution of the school

3. THE IMPACT OF THE MOBILE PHONE ON THE PEER GROUP

The influence of the mobile phone on young people's peer groups has been profound. During adolescence, the peer group gains increasing importance and communication among peers becomes central to individual identity (Ling & Helmersen, 2000). The impact of the mobile phone has transformed peer groups into a fully networked society (Williams & Williams, 2005).

One of the primary reasons for young people's mobile phone use is its functionality in micro-coordinating their social life. Adolescence is a time of expanding social networks beyond the family, and the fixed telephone has historically been essential in organizing social activities (Manceron, 1997). The mobile phone extends this coordination by enabling communication free from physical proximity and spatial constraints (Geser, 2004). Young people can now arrange or rearrange social gatherings quickly, leading to a more fluid culture of information and social interaction. However, this flexibility can also lead to negative consequences, such as enabling large groups of young people to gatecrash parties (Weston, Atkinson, & Giles, 2005).

The most significant impact of the mobile phone is its ability to connect young people with their peer group. Even functional use of the mobile phone is intertwined with its relational use, as it serves to link peers more closely without adult interference. In a New Zealand study, a majority of high school students reported that the most important reason

for using a mobile phone was to talk and text with friends (Netsafe, 2005). This relational aspect is evident in the rules of engagement, where quick responses to text messages are expected, and delayed replies should be accompanied by an apology (Kasesniemi & Rautiainen, 2002).

Despite the positive impacts, there are negative aspects to young people's mobile phone use, including using technology to avoid emotionally distressing events, such as breakups, and the ostracism of those without mobile phones. Cyberbullying is also a concerning issue. Some sociologists argue that excessive reliance on texting rather than face-to-face communication might hinder young people's ability to interact effectively with each other (Srivastava, 2005). Texting is often seen as a convenient way to stay in touch without investing much time or effort in the encounter, enabling shy individuals to communicate without revealing their emotions fully (Fox, 2001; Plant, 2000). The character limit in texting encourages brief communication without social niceties.

Regarding the ostracism of young people without mobile phones, there are contradictory findings in the research. In the United Kingdom, researchers have observed that non-mobile phone owners are particularly susceptible to social exclusion (Charlton, Panting, & Hannan, 2002). Similarly, an Australian study reported that nearly half of adolescents who did not possess a mobile phone felt left out in social interactions, with a third experiencing pressure from their friends to acquire one (Matthews, 2004). However, the majority (91%) of adolescents who owned mobile phones stated that they respected the decision of their peers who chose not to have one. This might suggest that adolescents are not deliberately ostracizing non-mobile phone owners, but they may unintentionally exclude them because they cannot be easily contacted. There is also the possibility that respondents answered this question in a socially desirable manner.

Another negative aspect of young people's mobile phone use is cyberbullying. Cyberbullying, or bullying through technology, is becoming increasingly prevalent among children and adolescents (National Children's Home Study, 2002; Ybarra & Mitchell, 2004). One study on this phenomenon found that most cyberbullying victims experienced bullying through texting (Campbell & Gardner, 2005). The consequences of face-to-face bullying are well-documented, including increased levels of depression, anxiety, psychosomatic symptoms, and even suicide. The consequences of cyberbullying are yet to be fully

researched, but they have the potential to be even more severe than traditional bullying. With cyberbullying, the targeted student can repeatedly read hurtful messages, making the experience more concrete and distressing. Moreover, the 24/7 nature of mobile phones allows cyberbullying to occur at any time, leaving victims with no escape.

Adolescent smartphone addiction has gained significant attention in recent years, and peer relationships have been identified as a protective factor against such addiction. However, the underlying mechanisms for this relationship are not well understood. A study aimed to investigate the mediating role of self-esteem in the link between student-student relationships and smartphone addiction, as well as the moderating role of the need to belong in the indirect relationship between student-student relationships and adolescent smartphone addiction (J Behav Addict. 2017).

Smartphone technology has led adolescents to constantly engage with their phones and express themselves through the virtual world. Adolescents prefer smartphones for reasons such as stress relief, escapism from real-life, comfort, relaxation, and social interaction. A recent study found that 82.6% of adolescents connected to the Internet via smartphones for chatting on social networking sites like Facebook, Twitter, Instagram, and WhatsApp (E. Erdem, Y. Sezer Efe, 2022).

4. THE IMPACT OF THE MOBILE PHONE ON THE LEARNING

The emergence of the Fourth Industrial Revolution has sparked interest in educational reforms, particularly regarding the integration of information and communication technology (ICT) into teaching. Smartphones, as highly popular ICT devices, have seen widespread adoption, with around 96.8% of the global population having access to mobile devices in 2019, reaching 100% coverage in developed countries (Sarker et al., 2019). Due to their versatility, smartphones have been rapidly integrated into communication and learning, becoming an integral part of daily life for many. They are perceived as convenient and easy-to-use tools that facilitate interaction, multitasking, and both formal and informal learning (Looi et al., 2016; Yi et al., 2016).

Numerous studies have explored the impact of smartphones in education. Some have highlighted advantages, such as rich content transferability, knowledge sharing, and dynamic learning (Anshari et al., 2017). However, there are concerns about the inappropriate use of smartphones in the classroom,

necessitating the establishment of appropriate rules and regulations (Cho & Lee, 2017). Teachers' training in application selection and device usage is also suggested to effectively incorporate smartphones into the learning process (Bluestein & Kim, 2017). While some research provides empirical evidence of positive effects, other studies question the integration of smartphones in the academic environment, as smartphone addiction has been associated with adverse effects on academic performance (Hawi & Samaha, 2016; Lee et al., 2015).

Smartphone use has a significant impact on social relationships, as students tend to maintain connections through various synchronous and asynchronous technologies, including instant messaging (Guo et al., 2011). Smartphone use is positively correlated with social intimacy and can contribute to the creation and reinforcement of social networks (Karikoski & Soikkeli, 2013; Park & Lee, 2012). Scholars have also discussed the potential benefits of smartphones in learning, emphasizing that they can facilitate student-centered learning across different disciplines and educational stages (Firmansyah et al., 2020). Some researchers suggest that smartphones should be embraced in classroom teaching, as educators can guide students to understand how smartphones can aid learning and civic participation (Clayton & Murphy, 2016).

5. IMPACT OF THE MOBILE PHONE ON THE FAMILY

According to problem behavior theory and the problematic mobile phone use pathway model proposed by Billieux's team, dysfunctional parent-child relationships are significant factors contributing to the onset and escalation of adolescents' problematic smartphone use (De Leo & Wulfert, 2013; Yen et al., 2008; Billieux, 2012; Billieux et al., 2015). A positive parent-child relationship is characterized by emotional warmth and social control, both of which are inversely related to adolescents' problematic smartphone use. A strong relationship with parents provides warmth and security, fulfilling offline psychological needs and potentially reducing problematic smartphone use (Jia et al., 2017). The social control theory suggests that adherence to parental rules and regulations acts as a form of social control. Adolescents under social control may be more receptive to parental supervision and constraints, resulting in reduced risk of problematic smartphone use (Jia et al., 2017, 2018). Several studies have demonstrated a close association between poor parent-child

relationships and problematic smartphone use among adolescents (Liu & Kuo, 2007; Park et al., 2008; Shin et al., 2011). Given the significance of the parent-child relationship, improving it through family therapy could potentially help manage adolescents' problematic smartphone use.

One of the primary reasons cited by parents for providing their children with a mobile phone is safety (Geser, 2004; Ling, 2000a; Srivastava, 2005). Mobile phones are often given to children when they begin venturing outside alone or start attending school (Oksman & Rautiainen, 2003). Interestingly, gender does not seem to be a major consideration for parents' safety concerns, as both male and female children are equally monitored (Ling & Helmersen, 2000). However, there seems to be a reliance on mobile phones as a means of protection. In an Australian study, 68% of parents reported that, with their child having a mobile phone, they knew the child's whereabouts at all times. Nevertheless, it's important to establish trust in the parent-child relationship, as children need to be truthful in reporting their location. The same study found that 77% of parents reported instances where they urgently needed to contact their child but couldn't, while 37% of young people reported being unable to urgently contact their parents, mainly due to insufficient phone credit (Matthews, 2004).

The issue of safety highlights the dual impact that mobile phones have on family dynamics. While mobile phones enable young people to have increased freedoms regarding curfews and permitted places to go, they also extend parents' control and authority over their children (Williams & Williams, 2005). The mobile phone serves as a tool for children to call parents in times of trouble, but it also enables parents to exercise surveillance by calling their children. This evolving relationship in the family has been interpreted by some researchers as undermining parental authority. The mobile phone has shifted power dynamics in parent-child relationships (Ling, 2000a), allowing peers to communicate with each other without parental knowledge. Lack of communication with their child's friends may leave parents unaware of their child's social circle, potentially weakening parental control (Ling, 2000a). Some researchers even suggest that the individualized nature of mobile phones has diluted the collective identity of families, shifting focus from "oneness" to "many-ness" (Srivastava, 2005).

However, some researchers have viewed the use of mobile phones by parents as an intrusion into the

lives of young people. Williams and Williams (2005) argue that parent-child relationships are increasingly characterized by negotiation, replacing traditional notions of parental authority. They contend that parents use mobile phones to enter their children's personal space, socially influencing and exerting control over them even in public settings. By constantly communicating through phone calls and text messages, parents "keep tabs" on their children, which is seen as intrusive by the young individuals. However, young people have found ways to counteract this surveillance, such as diverting certain calls to voicemail, blocking numbers, or pretending to have poor reception (Ling & Helmersen, 2000).

On the other hand, the ability to communicate directly with their children gives parents more freedom. It satisfies the need for some mothers to always be available for their children, a practice referred to as "remote mothering" (Geser, 2004). Moreover, it allows parents the freedom to go out while still being reachable at a moment's notice (Davie et al., 2004).

Similar to how fixed telephones facilitate communication between fathers and their children in cases of separated homes, mobile phones have extended this communication, providing even greater access and privacy for non-custodial parents. The mobile phone can help non-custodial parents contact their children without interference from the other parent, especially in situations where relations between parents are not amicable (Ling & Helmersen, 2000). This strengthens parent-child relationships, even in the presence of instability in the parent-to-parent relationship (Beck & Beck-Gernsheim, 1995).

Nevertheless, there is controversy about the appropriate age for children to have their own mobile phone. Ling and Helmersen (2000) argue that mobile phones become relevant when a child transitions from elementary to middle school, typically around 12-13 years of age, during adolescence. However, some younger children possess the necessary language skills and social abilities to use phones. Despite this, many adolescents and parents have reported not seeing a need for personal phones if their social networks are limited (Ling & Helmersen, 2000). Nonetheless, around the age of 12, mobile phones also serve as tools for peer group coordination and expanding social connections beyond family activities. Pre-teens may desire a mobile phone as a symbol of impending adolescence, representing

independence from the family (Ling, 2000a). Additionally, parents view mobile phones as a safety measure for their preteens. Studies indicate that around 57% of young people receive a mobile phone at the age of 13 or 14 (Matthews, 2004). However, considering the increasing adoption rates mentioned earlier, it appears that children may be getting their own phones at younger ages.

It is interesting to observe that there are limited common family rules regarding the use of mobile phones by young people. In fact, a significant percentage of adolescents (58%) reported that their parents did not set any specific rules about their mobile phone usage, and only 12% stated that their parents used phone confiscation as a form of punishment (Matthews, 2004). In New Zealand, this figure increased to 26% of young mobile users reporting being threatened with phone confiscation as a punishment (Netsafe, 2005).

Studies have found that some young people experience sleep disturbances when friends call or send text messages to their mobile phones. In New Zealand, 11% of young people reported being woken every night by text messages or calls (Netsafe, 2005). There have also been anecdotal reports of young individuals texting under their bedcovers at night and using their mobile phones as alarms and flashlights. Due to the sleep-related issues, the most common rule set by parents (56%) was that children must leave their mobile phones outside their rooms at night. Additionally, 10% of young people reported that their parents frequently asked them to stop using their mobile phones late at night, with 12% stating that this was the most common disagreement between them and their parents (Matthews, 2004).

Moreover, financial disputes in families over mobile phone expenses have been observed. In the New Zealand study, 13% of participants reported borrowing money to spend on their phone bills (Netsafe, 2005). A significant portion of students (41%) had no idea how much they spent on their phone bills per month, and 34% reported that their parents were unaware of the amount as well. However, Ling (2000b) argues that a young person's ability to earn and budget money for their mobile phone is seen as a symbol of their adulthood. In contrast, in Matthews' (2004) study, financial conflicts between parents and adolescents were relatively small, with 16% of adolescents and 8% of parents reporting such disagreements.

Consequently, the adoption of mobile phones within families has led to shifts in power and control in parent-child relationships due to increased freedoms and greater micro-coordination

of daily life. Overall, it appears that the mobile phone has had little negative impact on family relationships.

6. IMPACT OF THE MOBILE PHONE ON THE INSTITUTION OF THE SCHOOL

Traditional socialization agents, such as schools and families, have undergone changes due to the expansion of the educational system, particularly in the demand for highly skilled workers. As a result, schools now play a more significant role in socialization. Surprisingly, there has been limited research on the impact of mobile phones on the school system, despite the conflicting priorities of young people, parents, and teachers regarding the device. Teachers are concerned about discipline issues in the classroom, while parents want the ability to contact their children at any time.

Researchers have generally found that mobile phones lead to problematic use in schools. The device disrupts classroom learning through phone calls and texting, with students often using SMS messages unobtrusively due to the phone's small size, making it difficult for teachers to control. Many students are reluctant to turn off their mobile phones during class due to the anticipation of receiving messages. Studies have shown that a significant percentage of students keep their phones on during lessons.

One positive exception to the negative effects of mobile phone use on learning is the "Txt Me" program in Brisbane, which successfully utilized SMS messaging to support sustainable learning for disengaged students outside the traditional school setting.

However, there are various negative impacts of mobile phones on students in schools. Anecdotal evidence suggests that students rely on their parents to solve problems, leading to decreased self-reliance. Mobile phones are also used for cheating in exams, cyberbullying, and taking inappropriate pictures or videos without the subjects' knowledge, which can lead to online harassment. Additionally, the theft of mobile phones poses a problem for school staff, especially when the incidents occur on or near school premises.

One of the few positive uses of mobile phones in schools is texting parents when students are absent. Despite this, the overall impact of mobile phones on the school environment, including the disruptive effects on learning and negative

behaviors, requires further investigation and attention.

7. CONCLUSION

The impact of mobile phones on young people's social interactions has led to the emergence of a highly interconnected society within their peer groups. Additionally, mobile phones have influenced family dynamics, granting young individuals increased bargaining power when it comes to issues like curfews and safety concerns. However, schools and educational institutions have reported that students' use of mobile phones disrupts teaching and diminishes their attention in class, resulting in negative academic outcomes. While the influence of mobile phones on schools is a topic that warrants further research, its potential implications for the future could be significant.

This study has laid a solid foundation for future research on the correlation between smartphone usage and academic performance among students. The model established here can be replicated and applied to explore other social science variables that might affect academic achievement in primary school students. Furthermore, the study's findings can offer valuable guidance to teachers, parents, and policymakers on how to utilize smartphones effectively to maximize educational benefits for primary school students. The discussion of the mediating variable in this study also serves as a basis for future projects in this area.

REFERENCES

1. Ahmed, R. R., Salman, F., Malik, S. A., Streimikiene, D., Soomro, R. H., & Pahi, M. H. (2020). Smartphone Use and Academic Performance of University Students: A Mediation and Moderation Analysis. *Sustainability*, 12(1), 439. MDPI AG. Retrieved from <https://doi.org/10.3390/su12010439>
2. Amez, S., & Beart, S. (2020). Smartphone use and academic performance: A literature review. *International Journal of Educational Research*, 103, 101618. <https://doi.org/10.1016/j.ijer.2020.101618>
3. Anshari, M., Almunawar, M. N., Shahrill, M., Wicaksono, D. K., & Huda, M. (2017). Smartphones usage in the classrooms: Learning aid or interference? *Education and Information Technologies*, 22, 3063–3079. <https://doi.org/10.1007/s10639-017-9572-7>
4. Bae, S. M. (2015). The relationships between perceived parenting style, learning motivation, friendship satisfaction, and the addictive use of smartphones with elementary

- school students of South Korea: Using multivariate latent growth modeling. *School Psychology International*, 36(5), 513–531. <https://doi.org/10.1177/0143034315604017>
5. Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182. <https://doi.org/10.1037/0022-3514.51.6.1173>
 6. Bluestein, S. A., & Kim, T. (2017). Expectations and fulfillment of course engagement, gained skills, and non-academic usage of college students utilizing tablets in an undergraduate skills course. *Education and Information Technologies*, 22(4), 1757–1770. <https://doi.org/10.1007/s10639-016-9515-8>
 7. Carrillo, C., & Flores, M. A. (2020). COVID-19 and teacher education: A literature review of online teaching and learning practices. *European Journal of Teacher Education*, 43(4), 466–487. <https://doi.org/10.1080/02619768.2020.1821184>
 8. Chang, F. C., Chiu, C. H., Chen, P. H., Chiang, J. T., Miao, N. F., Chuang, H. T., & Liu, S. (2019). Children’s use of mobile devices, smartphone addiction and parental mediation in Taiwan. *Computers in Human Behavior*, 93, 25–32. <https://doi.org/10.1016/j.chb.2018.11.048>
 9. Chen, R. S., & Ji, C. H. (2015). Investigating the relationship between thinking style and personal electronic device use and its implications for academic performance. *Computers in Human Behavior*, 52, 177–183. <https://doi.org/10.1016/j.chb.2015.05.042>
 10. Chen, C., Chen, S., Wen, P., & Snow, C. E. (2020). Are screen devices soothing children or soothing parents? Investigating the relationships among children’s exposure to different types of screen media, parental efficacy and home literacy practices. *Computers in Human Behavior*, 112, 106462. <https://doi.org/10.1016/j.chb.2020.106462>
 11. Cheng, Y. M., Kuo, S. H., Lou, S. J., & Shih, R. C. (2016). The development and implementation of u-msg for college students’ English learning. *International Journal of Distance Education Technologies*, 14(2), 17–29. <https://doi.org/10.4018/IJDET.2016040102>
 12. Cho, K. S., & Lee, J. M. (2017). Influence of smartphone addiction proneness of young children on problematic behaviors and emotional intelligence: Mediating self-assessment effects of parents using smartphones. *Computers in Human Behavior*, 66, 303–311. <https://doi.org/10.1016/j.chb.2016.09.063>
 13. Cho, H.-Y., Kim, K. J., & Park, J. W. (2017). Stress and adult smartphone addiction: Mediation by self-control, neuroticism, and extraversion. *Stress and Health*, 33, 624–630. <https://doi.org/10.1002/smi.2749>
 14. Clayton, K., & Murphy, A. (2016). Smartphone apps in education: Students create videos to teach smartphone use as tool for learning. *Journal of Media Literacy Education*, 8, 99–109. Retrieved October 13, 2021. Review from <https://files.eric.ed.gov/fulltext/EJ1125609.pdf>
 15. Daems, K., Pelsmacker, P. D., & Moons, I. (2019). The effect of ad integration and interactivity on young teenagers’ memory, brand attitude and personal data sharing. *Computers in Human Behavior*, 99, 245–259. <https://doi.org/10.1016/j.chb.2019.05.031>
 16. Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life’s domains. *Canadian Psychology*, 49(1), 14–23. <https://doi.org/10.1037/0708-5591.49.1.14>
 17. Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, 125, 627–668. <https://doi.org/10.1037//00332909.125.6.627>
 18. Dong, C., Cao, S., & Li, H. (2020). Young children’s online learning during COVID-19 pandemic: Chinese parents’ beliefs and attitudes. *Children and Youth Services Review*, 118, 105440. <https://doi.org/10.1016/j.chilyouth.2020.105440>
 19. Du, J., van Koningsbruggen, G. M., & Kerkhof, P. (2018). A brief measure of social media self-control failure. *Computers in Human Behavior*, 84, 68–75. <https://doi.org/10.1016/j.chb.2018.02.002>
 20. Firmansyah, R. O., Hamdani, R. A., & Kuswardhana, D. (2020). IOP conference series: Materials science and engineering. The use of smartphone on learning activities: Systematic review. In *International Symposium on Materials and Electrical Engineering 2019 (ISMEE 2019)*, Bandung, Indonesia. <https://doi.org/10.1088/1757-899X/850/1/012006>

21. Garbe, A., Ogurlu, U., Logan, N., & Cook, P. (2020). COVID-19 and remote learning: Experiences of parents with children during the pandemic. *American Journal of Qualitative Research*, 4(3), 45–65. <https://doi.org/10.29333/ajqr/8471>
22. George, D., & Mallery, P. (2010). *SPSS for windows step by step: A simple guide and reference*. 17.0 update (10th ed.). Pearson.
23. Grant, M., & Hsu, Y. C. (2014). Making personal and professional learning mobile: Blending mobile devices, social media, social networks, and mobile apps to support PLEs, PLN, & ProLNs. *Advances in Communications and Media Research Series*, 10, 27–46.
24. Grolnick, W. S., & Pomerantz, E. M. (2009). Issues and challenges in studying parental control: Toward a new conceptualization. *Child Development Perspectives*, 3, 165–170. <https://doi.org/10.1111/j.17508606.2009.00099.x>
25. Karikoski, J., & Soikkeli, T. (2013). Contextual usage patterns in smartphone communication services. *Personal and Ubiquitous Computing*, 17(3), 491–502. <https://doi.org/10.1007/s00779-011-0503-0>
26. Meier, A. (2017). Neither pleasurable nor virtuous: Procrastination links smartphone habits and messenger checking behavior to decreased hedonic as well as eudaimonic well-being. Paper presented at the 67th Annual Conference of the International Communication Association (ICA), San Diego, CA.
27. Park, J. H. (2020). Smartphone use patterns of smartphone-dependent children. *Korean Academy of Child Health Nursing*, 26(1), 47–54. <https://doi.org/10.4094/chnr.2020.26.1.47>
28. Park, N., & Lee, H. (2012). Social implications of smartphone use: Korean college students' smartphone use and psychological well-being. *Cyberpsychology, Behavior, and Social Networking*, 15(9), 491–497. <https://doi.org/10.1089/cyber.2011.0580>
29. Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. <https://doi.org/10.1037//0003-066x.55.1.68>
30. Vanderloo, L. M. (2014). Screen-viewing among preschoolers in childcare: A systematic review. *BMC Pediatric*, 14, 205. <https://doi.org/10.1186/1471-2431-14-205>
31. Wang, T. H., & Cheng, H. Y. (2019). Problematic Internet use among elementary school students: Prevalence and risk factors. *Information, Communication & Society*, 24(2), 108–134. <https://doi.org/10.1080/1369118X.2019.1645192>
32. Wang, C. J., Chang, F. C., & Chiu, C. H. (2017). Smartphone addiction and related factors among elementary school students in New Taipei City. *Research of Educational Communications and Technology*, 117, 67–87. https://doi.org/10.6137/RECT.201712_117.0005
33. Yi, Y. J., You, S., & Bae, B. J. (2016). The influence of smartphones on academic performance: The development of the technology-to-performance chain model. *Library Hi Tech*, 34(3), 480–499. <https://doi.org/10.1108/LHT-04-2016-0038>
34. Zhang, M. W. B., Ho, C. S. H., & Ho, C. M. (2014). Methodology of development and students' perceptions of a psychiatry educational smartphone application. *Technology and Health Care*, 22, 847–855. <https://doi.org/10.3233/THC-140861>