Asian Journal of Social Science Research (e-ISSN: 2600-9706)
Volume 8, Issue 1, 2026
DOI: https://doi.org/10.5281/zenodo.20808098

FORGETTING IN THE DIGITAL AGE: A SYSTEMATIC REVIEW OF DIGITAL AMNESIA AMONG YOUTH

Balqis Basyirah Burhan [1], Ahmad Nadzri Mohamad[2*]

[1,2] Faculty of Information Science, Universiti Teknologi MARA, Puncak Perdana Campus, 40150 Shah Alam, Selangor, Malaysia

*Corresponding author, nadzri590@uitm.edu.my / nadzri.mohamad@gmail.com

Received Date: 02/01/2026 Accepted Date: 15/06/2026 Published Date: 30/06/2026

ABSTRACT

This systematic literature review explores the increasing trend of digital amnesia in youth, where forgetting occurs due to excessive reliance on digital devices. Fifteen peer-reviewed articles were reviewed through the PRISMA 2020 statement to understand the consequences and coping strategies for digital amnesia. Ultimately, the literature noted significant cognitive and emotional impacts, such as forgetting and poor academic focus, anxiety, and lack of sleep from digital amnesia. Digital amnesia was also linked to nomophobia (no mobile-phone phobia), diminished problem-solving skills, and anxiety. Some authors presented arguments favouring cognitive offloading as a benefit of using digital devices. Others argued that over-dependence on technology naturally brings long-term risks to mental or cognitive health. Suggested coping strategies included "digital detoxing", limiting screen time, and encouraging cognitive and physical activities that provide stimuli to promote memory upkeep and attention. The study informs educators, policymakers, and mental health practitioners about the potential impacts of digital amnesia on youth. More importantly, the research urges policymakers to drive awareness programmes for youth to cope with digital amnesia. Also, the study posits that a practical national framework to encourage ethical and responsible use of digital devices among youth might address digital amnesia concerns in the long run.

Keywords: digital amnesia, youth, systematic literature review

INTRODUCTION

People increasingly depend on technology for everyday tasks, including searching for information, communicating, and managing daily activities. Today's youth are "digital natives" who spend a vast amount of time on smartphones, search engines, cloud storage, and social media. The overdependence on these devices, gadgets and other digital tools has given rise to digital amnesia. Digital amnesia is a condition in which an individual's memory capacity decreases due to overreliance on digital devices for information storing and retrieval (Kanbay et

al., 2024; Kanbay, Babaoğlu, et al., 2025). This phenomenon is increasingly prevalent among young people, particularly Generation Z, who are growing up in a highly digitalised world (Laid, 2024).

Digital amnesia has become more visible during the COVID-19 pandemic, when people are urged to stay at home. Being isolated has led people to rely on their smartphones or technology to stay connected to the world. The increased use of technology has also accelerated the global digitalisation of education. Online classes, virtual social interactions, and digital environments have drawn youth deeper into the digital ecosystem. However, overreliance on digital technologies reinforces a pattern of cognitive offloading, in which the brain relies on technology to remember and manage information instead of doing so independently. Overusing digital technologies can impact various cognitive functions, including critical thinking and decision-making (Shanmugasundaram & Tamilarasu, 2023).

The consequences of digital amnesia present challenges within cognitive, emotional, and educational contexts. Some researchers suggest that individuals can offload some of their memories to digital devices, thereby allowing for cognitive resources to be allocated to higher-order tasks (Ward et al., 2017). However, others emphasise the problems that people can and have experienced as a consequence of using memory-based oblivion, namely, watershed moments of poor recall, loss of critical thinking, and poor academic performance. This shift has implications for how we process and retain information, potentially weakening in-depth information processing and critical thinking skills among youth (Kanbay et al., 2024).

In extreme examples, excessive dependence on devices leads to anxiety when their access is limited or abruptly interrupted. This is often referred to as "nomophobia" or "no mobile-phone phobia", characterised by a fear of being without a mobile device (Gezgin, 2018). Dependency may also influence sleeping habits and patterns, impact attentiveness, and general mental well-being. Cellini et al. (2020) state that excessive screen time and digital device use can negatively impact sleep patterns by delaying bedtime, increasing the time spent in bed, and deteriorating sleep quality. Their research aimed to demonstrate associations with later bedtimes, increased time in bed, and worse sleep quality, each of which impairs mental functioning and memory consolidation.

The evidence for memory and retention is undoubtedly a small part of a larger range of psychosomatic health issues faced from continuous, prolonged exposure to digital stimuli. Continuous digital information may lead to structural and functional changes in the brain areas associated with attention and memory, which could be problematic for cognition (Kanbay et al., 2024). There is now expanding acceptance of the effects of digital amnesia in the literature (Ali et al., 2025; Kanbay, Yalçıntürk, et al., 2025; Savarimuthu & Subramanian, 2022). However, a specific attention to its effects on youth is not empirically collected in a systematic review form. Hence, the objective of the study is to examine the effects and coping strategies of digital amnesia on youth from selected online databases. Based on this objective, the study is aimed at answering the following research questions:

1. What are the cognitive, psychological, and physical consequences of digital amnesia in youth?
2. How does digital amnesia influence the daily academic and personal performance of youth?
3. What kind of coping strategies are available to mitigate the effects of digital amnesia in youth?

An investigation in this area would educate the general public and youth on the dangers of consuming digital content without supervision. More importantly, parents, school administrators and policymakers might be able to design practical measures and raise awareness concerning digital amnesia.

METHODOLOGY

This systematic literature review examines the existing literature concerning the research questions. The systematic literature review process consists of three stages: identification, screening, and eligibility, all of which ensure that the studies selected for synthesis are relevant, of good quality, and thematically appropriate. This systematic review followed the guidance of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement. The PRISMA framework followed during this systematic review provided the authors with a practical guideline on each stage of the review process. Figure 1 shows the PRISMA 2020 diagram.

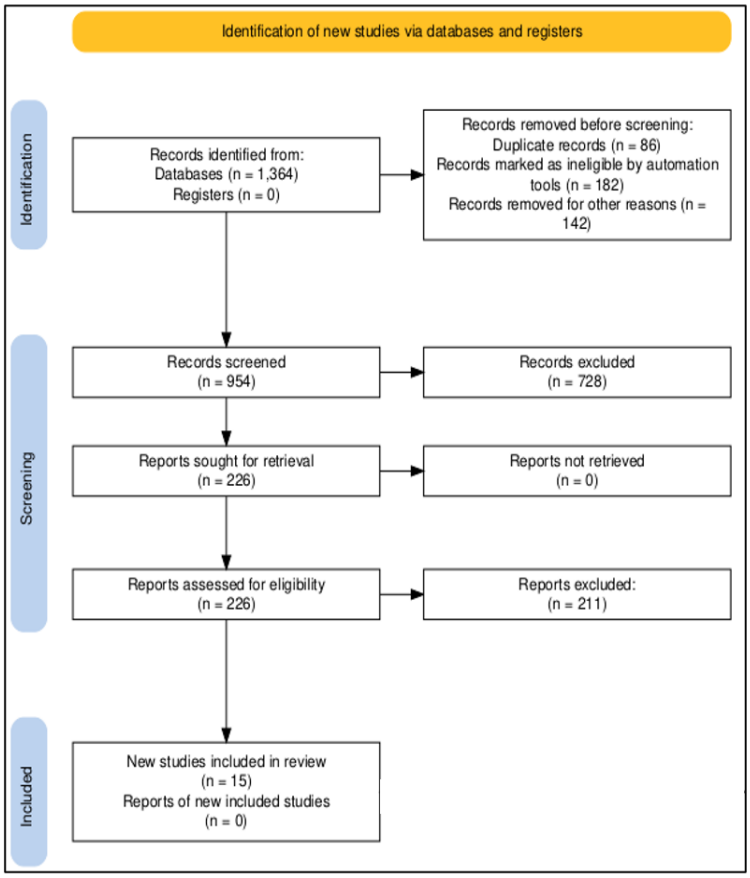


Figure 1. PRISMA flow diagram

Firstly, in the identification stage, search terms were created with the main concepts of this study in mind, namely digital amnesia, youth, students, cognitive effects, the Google effect, and coping strategies. The authors used Boolean operators (e.g., AND, OR), phrase searching, truncation, wildcard symbols, and field codes to enhance the accuracy of the literature search. The search string was designed explicitly for the online databases used in the study. The use of structured search terms ensures a focused retrieval of literature while minimising information overload and irrelevant results. For example, Boolean operators were used to link keywords such as "digital amnesia" OR "digital memory loss" AND "youth" OR "adolescents" OR "students" AND "coping strategies" OR "intervention" OR "digital detox" AND "cognitive impact" OR "memory" OR "attention span" OR "Google effect". This approach enabled a thorough examination of peer-reviewed articles that address the three research questions of this study. Table 1 shows the details of the search term used for the study.

Table 1. Databases used for the study and search strings

Database	Search string
Emerald Insight / Google Scholar / National Institute of Health	((“digital* amnesia*” OR “Google* effect*” OR “Digital* dementia*”) AND (“youth*” OR “student*”) AND (cognitive* effect*” OR “coping* strategies*”))

INCLUSION AND EXCLUSION CRITERIA

Table 2 shows the inclusion and exclusion criteria applied during the screening and eligibility phases. The inclusion criteria include journal articles published between 2015 and 2025. This period was selected to review digital amnesia as a topic of interest within the last ten years. The authors selected research articles in English only. Selection of articles in other languages can be time-consuming and costly. The study included peer-reviewed journal articles solely. The studies selected should cover youth aged between 15 and 24 years old. The authors considered studies that focus on the topics related to digital amnesia, such as Google effects, cognitive effects, and coping strategies. Lastly, the authors merely considered scholarly articles accessible through the university's online databases. As such, research articles that required purchase were not considered for the study.

Table 2. Inclusion and exclusion criteria for data collection

Criteria	Inclusion	Exclusion
Publication Year	2015-2025	Before 2015
Language	English	Non-English
Document Type	Peer-reviewed journal articles	Non-peer-reviewed journal articles

Population	Aged 15-24 years old	Aged beyond the inclusion criteria
Study Focus	Digital amnesia, Google effects, cognitive effects, and coping strategies	Studies not addressing cognitive effects and coping strategies in the context of digital amnesia
Availability	Full-text accessible	Abstract only, paywalled, or incomplete content

FINDINGS

The systematic literature review covered three online databases: Emerald Insight (n = 72), Google Scholar (n = 1,280) and the National Institutes of Health (n = 12), yielding 1,364 records. All were imported into Mendeley Reference Manager, which removed 410 duplicates, leaving 954 records for screening. Titles and abstracts of 954 unique records were reviewed for relevance to digital amnesia among youth, excluding 728 records and narrowing the pool to 226 articles for full-text retrieval. Most of the scholarly articles were removed due to a lack of relevance concerning the inclusion and exclusion criteria. In some instances, further reading of these scholarly articles revealed the lack of content required for the study. Ultimately, 15 empirical studies were selected for analysis. A brief overview of the studies such as research approach, key results and limitations are shown in Appendix A.

DISCUSSION

In this section, the researcher provides an overview of the findings, which address three research questions of the study: (1) What are the cognitive, psychological, and physical consequences of digital amnesia in youth? (2) How does digital amnesia influence the daily academic and personal performance of youth? And (3) What coping strategies are available to mitigate the effects of digital amnesia in youth? This review presents an understanding of how digital amnesia is experienced by youth when considering their increasing digital dependence and cognitive offloading.

COGNITIVE, PSYCHOLOGICAL, AND PHYSICAL CONSEQUENCES OF DIGITAL AMNESIA IN YOUTH

In this section, the researchers explain several consequences of digital amnesia for youth. The section discovered two cognitive consequences, which are i) memory impairment and reliance on external storage and ii) reduced cognitive capacity and brain drain. The research acknowledges two psychological consequences in the literature: i) anxiety, depression, and attention dysregulation, and ii) reduced mindfulness and self-perception. The research found two physical and behavioural consequences: i) sleep disruption and circadian dysregulation, and ii) sedentary behaviour and reduced physical health.

DOI: https://doi.org/10.5281/zenodo.20808098

COGNITIVE CONSEQUENCES:

MEMORY IMPAIRMENT AND RELIANCE ON EXTERNAL STORAGE

Digital amnesia compromises our internal memory systems by accelerating the externalisation of cognitive labour (Baron, 2021). Youth increasingly rely on search engines and cloud storage, even replacing recollection of facts, dates, personal episodes and experiences (Baron, 2021). This overreliance on digitised recall externalises the active encoding and retrieval processes and mediates long-term storage of experiences. Baron (2021) describes how digital material shifts our focus from deep reading or critical thinking to cognitive offloading, reducing cognitive resiliency and attention capabilities. Comparatively, Kanbay et al. (2025) demonstrate that employing digital tools such as memory prosthetics leads to retrieval-induced forgetting and the suppression of information that is not digitally saved. Similarly, Laid (2024) noticed a behaviour of shallow information processing resulting in a diminished capacity for generating personal knowledge schemas.

The reviewed literature in this section suggests that digital amnesia contributes to cognitive offloading and reduces memory and attention capabilities. While acknowledging this, it is important to note that more scientific studies are required to investigate the effect of digital amnesia, especially within the context of various cultures. For instance, it is quite common for youth, especially in Islamic boarding schools in Malaysia, to memorise Quranic verses. Hence, such an attribute might enhance memorisation capability, albeit for the existence of digital amnesia in the broader population. Therefore, more studies could be conducted within various environments to enhance our understanding of digital amnesia and strategies to overcome it within the youth population.

REDUCED COGNITIVE CAPACITY AND BRAIN DRAIN

The mere passive presence of smartphones has been shown to reduce working memory and fluid intelligence. For example, Ward et al. (2017) conducted experiments demonstrating that the visibility of a smartphone, even when it is in a passive state and not in use, has the potential to drain available cognitive resources. Even worse, Manwell et al. (2022) warn that chronic exposure to screens during adolescence, a time when the brain is still developing and maturing, may place one at a higher risk of developing neurodegenerative disorders such as Alzheimer's disease. This situation could lead to functional underdevelopment of memory-related brain structures such as the hippocampus. Hence, such a study raises the question of whether experiences of digital amnesia are part of a larger and more pervasive pattern of cognitive deficits that exceed simple forms of forgetfulness. Even with the empirical evidence mentioned above, it is clear that more research is required to ascertain the effects of digital amnesia on cognitive capacity and brain damage.

PSYCHOLOGICAL CONSEQUENCES:

ANXIETY, DEPRESSION, AND ATTENTION DYSREGULATION

Digital amnesia has significant psychological costs, including heightened anxiety and depressive symptoms. In this context, Alanzi et al. (2024) found that youth reporting digital overload were more likely to have some anxiety and depressive symptoms due to their inability to deal with cognitive overload and device dependency for emotional regulation. In this sense, youth might have lowered self-efficacy and emotional distress over being without digital devices. In another

research, Groenestein et al. (2024a) link fear of missing out (FoMO) to poor psychological well-being. In essence, FoMO is a driver of compulsive device use among youth. FoMO is associated with frequent checking and social comparisons in online interactions, which is thought to lead to feelings of inadequacy and dissatisfaction. The poor psychological well-being is based on a conditionality that perpetuates dependency on digital devices, weakens memory, and exacerbates psychological vulnerability.

Based on the studies mentioned above, digital device dependence might lead to an inability to deal with emotional distress. Also, scholars acknowledged that youth use social media applications due to the FoMO phenomenon against their peers. With this in mind, some governments are legalising a minimum age for social media registration. Countries with minimum age restrictions on using social media include the United States of America, Mexico, Singapore and New Zealand. Some countries that have the provision to implement such a strategy include Malaysia and Denmark. Such a move could reduce the harmful effects of social media, particularly on the FoMO phenomenon among youth across countries and regions.

REDUCED MINDFULNESS AND SELF-PERCEPTION

Digital amnesia also distorts the sense of presence and identity. In this respect, Setia et al. (2025) note that the repetitive documenting and externalising life stages on digital devices dilutes autobiographical memory, which is incredibly important for a stable sense of self. Suppose a youth stores experiences on external devices instead of encoding them into their brain's memory. In that case, they will likely develop diminished episodic memory quality. They may even become detached from prior individual experiences or narratives. This detachment can ultimately affect emotional regulation, identity development, and self-examination. All these are important aspects of healthy psychological development in adolescence and early adulthood (Shanmugasundaram & Tamilarasu, 2023).

PHYSICAL AND BEHAVIORAL CONSEQUENCES

SLEEP DISRUPTION AND CIRCADIAN DYSREGULATION

Sleep disruption may be one of the most pressing physical consequences of digital amnesia. This is where late-night screen use and mental overstimulation can radically disrupt sleep. Cellini et al. (2020) discuss a study conducted in Italy during the COVID-19 lockdowns. They noted that a cohort of younger individuals exhibited alterations in their sleeping patterns and quality of sleep habits due to excessive screen time. This, in turn, disrupted memory consolidation processes, as deep sleep is necessary for both consolidation and the transference of items from short-term to long-term memory. Nakshine et al. (2022) similarly cite screen time as a major contributor to disruptions in circadian rhythms. Collectively, disruption of these rhythms impacts cognitive function, mental state, and physical health.

SEDENTARY BEHAVIOR AND REDUCED PHYSICAL HEALTH

Digital amnesia is often accompanied by a sedentary lifestyle. Screen time replaces physical activity, which ultimately results in a further increase in the risk of obesity, musculoskeletal strain, and poor posture. Gezgin (2018) links excessive use of smartphones with decreased sleep duration and lower physical activity levels. These outcomes might exacerbate the adverse physiological and psychological effects of digital overdependence for youth. In another study,

Coyne and Woodruff (2023) acknowledged that digital content users experienced improved health when monitoring and supporting digital detox times with better sleep practice, mood, and physical activity levels. Hence, using digital devices for long hours should be interlaced with other physical activities to reduce the harmful effects of digital amnesia in the long run.

DIGITAL AMNESIA INFLUENCE ON THE DAILY ACADEMIC AND PERSONAL PERFORMANCE OF YOUTH

Digital amnesia influences youth academic performance, such as i) impaired information retention and learning, ii) reduced attention span and concentration, and iii) procrastination and digital dependency. Also, the study discovered that digital amnesia might affect youth in terms of personal functioning and everyday tasks, such as i) declining self-regulation and executive functioning, and ii) reduced emotional presence and relationship quality. These points are explained in the following sections.

EFFECTS ON ACADEMIC PERFORMANCE:

IMPAIRED INFORMATION RETENTION AND LEARNING

Digital amnesia inhibits students' ability to remember and learn deeply. For instance, Baron (2021) describes how students who constantly reference information from digital sources are conditioned to skim-read rather than deeply engage with a text analytically. As a result, this hinders critical thinking and reduces the likelihood that information is transferred from working memory into long-term memory, which is essential for academic success. According to Setia et al. (2025), students are less likely to rehearse or revise efficiently if they rely on cloud storage and digital notes. Subsequently, there is a limit to the amount of memory encoding that can occur. Hence, they could perform poorly when required to demonstrate understanding, recall work, or remember information under pressure, such as during exams or presentations. Comparatively, Ward et al. (2017) also provide evidence that mere mobile phones in a learning environment reduce cognitive capacity. As a result, learners may struggle to focus or understand complex conceptual problem-solving in an educational context.

REDUCED ATTENTION SPAN AND CONCENTRATION

Excessive exposure to digital devices teaches youth to multitask, resulting in reduced academic engagement and fragmented attention. Shanmugasundaram and Tamilarasu (2023) outline that multitasking with digital devices limits the memory efficiency of an individual. Memory efficiency is key in reading comprehension, solving mathematical problems, and integrating information. The Fear of Missing Out (FoMO) epidemic, highlighted by Groenestein et al. (2024a), is also a significant issue. Students may feel a sense of urgency to check social media or a message during valuable learning time, which leads to less cognitive investment in academic tasks. These might result in increased errors in academic work, decreased understanding of concepts, and careful task switching that hinders productivity.

PROCRASTINATION AND DIGITAL DEPENDENCY

Digital amnesia can also lead to academic procrastination. For example, Alanzi et al. (2024) found that students relying mainly on digital reminders and search engines tend to put off studying or even completing assignments, knowing they can access the information later. This lowers time management ability and fosters an over-reliance on and confidence in the digital system, which can lead to poor academic performance.

EFFECTS ON PERSONAL FUNCTIONING AND EVERYDAY TASKS: DECLINING SELF-REGULATION AND EXECUTIVE FUNCTIONING

Digital amnesia poses problems beyond just memory. It destabilises other executive functions, such as planning, time management, and emotional regulation. In this regard, Kanbay et al. (2025) argue that when learners rely on digital calendars, reminders, or to-do list apps, they incur a cognitive scaffolding loss, thereby shedding the brain's inherent ability to align time, tasks, and priorities. Noticing a decline in executive functioning is most alarming for young people as they are still developing these capacities. Assuming people offload all basic information (birthdays, schedules and grocery lists) onto devices, this practice becomes a learned habit of mental rehearsal and personal decision-making, leading to poor self-organisation skills and a lack of autonomy (Lodha, 2019).

REDUCED EMOTIONAL PRESENCE AND RELATIONSHIP QUALITY

Digital-induced memory offloading can have dire effects on social relationships. For instance, Setia et al. (2025) found that when private memories (photos, messages, events) are kept digitally but mentally processed, youth often report feeling less emotionally connected to those events. This process also diminishes the opportunities for developing empathy, gratitude, and other meaningful social bonds. In addition, Groenestein et al. (2024a) and Coyne and Woodruff (2023) note that compulsive use of digital devices, driven by FoMO, along with overexposure to virtual stimulus, can substitute real-life experiences and also limit time spent in genuine, authentic face-to-face interaction and use of social skills.

COPING STRATEGIES AVAILABLE TO REDUCE THE EFFECT OF DIGITAL AMNESIA

Forgetfulness in recalling information due to reliance on digital devices is an increasing concern among youth. The cognitive costs associated with heavy reliance on smartphones and internet-enabled devices are reflected in declines in memory, recall, and cognitive function (Kanbay et al., 2025; Lodha, 2019). Hence, researchers need to provide evidence-based coping strategies to counter cognitive costs resulting from digital amnesia. Several strategies cited in the literature include i) digital detox interventions, ii) metacognitive training and memory rehabilitation, iii) mindfulness and cognitive behavioural interventions, iv) educational reform and policy support, and v) sleep hygiene and lifestyle change. These strategies are explained in the following section.

DIGITAL DETOX INTERVENTIONS

A digital detox is one of the most well-supported solutions to reduce digital amnesia, as it involves an intentional break from using digital technology. Radtke et al. (2021) conducted a systematic review demonstrating that detaching from one's smartphone for a specific duration increases concentration, improves memory recall, and enhances emotional well-being. Alanzi et al. (2024) had a similar finding that participants who were involved in an organised digital detox had a significant decrease in co-occurring anxiety and depression, which are sometimes concurrent with experiences of digital amnesia. This finding was reinforced by Setia et al. (2025), who concluded that there were greater improvements in attention span and mental clarity among youth using digital detox. In these studies, digital detox had the most pronounced improvement in organised or social settings, as these strategies engaged the youth more thoroughly. Coyne and Woodruff (2023) investigated a two-week digital detox in another study. They found a reduction in problematic smartphone and social media use, indicating that mood and sleep quality also improved. These cognitive and emotional improvements aid in memory functions by reducing fragmented regions of the brain associated with multitasking and technological interruptions.

METACOGNITIVE TRAINING AND MEMORY REHABILITATION

In a study, Baron (2021) argues that digital technology creates a significant distraction that diminishes deep learning. This can be addressed through metacognitive interventions that engage learners with learning materials rather than having them search for information or passively browse the web. Practically, there are ways to promote metacognition in the classroom, such as note-taking by hand, summarising and paraphrasing content, and teaching others. These metacognitive strategies will help rewire neural pathways and reduce reliance on cognitive dumping, allowing for more effective use of technology. Laid (2024) supports this view, stating that Generation Z, while digitally literate, lacks strategies for retaining long-term knowledge because they rely on technology and consistently outsource their memory. In this context, implementing structured and process-based learning programs, such as the SQ3R (Survey, Question, Read, Recite, and Review), could emphasise memory retention, especially in classroom settings.

MINDFULNESS AND COGNITIVE BEHAVIOURAL INTERVENTIONS (MBCT)

Mindfulness-based cognitive training (MBCT) and cognitive-behavioural therapy (CBT) have been found to enhance attentional focus, lower digital dependence, and provide superior memory results. Groenestein et al. (2024a) argue that the lure of digital media is influenced by the fear of missing out (FoMO), a psychological state associated with a decline in well-being and cognitive focus. If CBT or guided mindfulness interrupts FoMO, it is possible to reduce users' compulsive checking by redirecting attention to general stimuli and increasing cognitive presence, thus creating a memory. Mindfulness practice has been shown to reduce screen time and improve self-awareness, positively contributing to developing more temperate digital practices (Pazer, 2024). When integrated into youth curricula or programming, these practices demonstrate a valuable public health intervention to address digital amnesia at a population level.

DOI: https://doi.org/10.5281/zenodo.20808098

ENVIRONMENTAL AND BEHAVIOUR DESIGN

Environment manipulation can be an effective way to change digital behaviours (Ward et al, 2017). A straightforward coping strategy may be establishing "tech-free zones" within families, classrooms, and social spaces. With a physical separation from technology during learning or social engagement, youth can naturally engage in their memory. This principle is also corroborated by Manwell et al. (2022), who warned that excessive screen exposure during critical developmental periods can lead to chronic neurodegenerative issues, including increased chances of developing Alzheimer's disease. Setting screen-free times during the day, especially before bed or at mealtimes, supports healthy cognitive development and helps memory form properly.

EDUCATIONAL REFORM AND POLICY SUPPORT

Looking beyond individualised practices, educational institutions are also responsible for attuning to memory support related to technology use. In this sense, Shanmugasundaram and Tamilarasu (2023) clearly define the policy-level responsibility of limiting screen time, focusing on the cognitive implications of the technology, and the responsibility for maximum use of technology on campus. In another study, Deckker and Sumanasekara (2025) suggested that awareness of the cognitive implications of excessive AI and digital device use should be integrated into school lesson plans.

SLEEP HYGIENE AND LIFESTYLE CHANGE

Improving sleep is another key area, but it is often poorly managed. Research demonstrates that problematic sleep hygiene, often caused by excessive screen engagement at night, hinders memory consolidation. Cellini et al. (2020) noted that the COVID-19 lockdown significantly disrupted youth circadian rhythms, bodily functions and sleep time. Interestingly, Gezgin (2018) noted similar findings when discussing sleep and increased screen use as the two most causative factors implicated in smartphone addiction and digital amnesia. Consequently, minimising screen time at night, establishing a digital curfew, and promoting good sleep hygiene are imperative for addressing the memory-based risks associated with increased dependence on digital devices.

To conclude, addressing the issue of digital amnesia among young people requires a multi-layered strategy that considers individual, educational, behavioural, and societal interventions. Digital detoxes, metacognitive training, mindfulness and meditation, environmental and contextual design, educational reform, and lifestyle changes are all viable strategies for improving well-being in an increasingly digital world. It is much easier to implement these coping strategies holistically by establishing a supportive social environment, utilising evidence-based approaches, and receiving institutional support to empower youth to regain cognitive independence in the digital space.

LIMITATIONS AND RECOMMENDATIONS

There are limitations to acknowledge. First, the review included only fifteen studies from selected online databases. Second, most studies represented findings that cover youth from Western countries. Finally, the review included only published peer-reviewed articles. As such, relevant grey literature such as theses or reports might provide additional information and insights. Future studies should explore longitudinal and experimental research designs to comprehend cognitive or psychological consequences in digital amnesia. Moreover, future research should be expanded across diverse sociocultural and socioeconomic contexts, particularly in non-Western countries. Education providers need to promote digital literacy programs to increase awareness of the harms of digital amnesia. Also, parents and educators should promote the balanced use of digital technology in youth's everyday lives. An interdisciplinary approach incorporating psychology, education, and technology design can foster more innovative ways to mitigate the harmful effects of digital devices on youth. The study posits that a greater national framework integrating responsible digital device use might be beneficial in reducing the risks of digital amnesia among the younger population. Public agencies that could work collaboratively to serve this purpose might include the Ministry of Education, the Ministry of Health and the Ministry of Communications. A range of outcomes can be envisioned from such collaboration, among others, awareness programmes, short and long-term policies, a national minimum age for social media accounts and guidelines for parents and schools.

CONCLUSION

This systematic literature review examined the emerging phenomenon of digital amnesia in youth, its implications, and coping strategies. The analysis of fifteen peer-reviewed papers established that over-reliance on digital devices like smartphones has resulted in negative cognitive effects, such as information offloading, losses, and impaired or weak knowledge retention. These cognitive effects are compounded by additional psychological disorders such as anxiety, stress, and sleep disorders. The findings also noted that digital amnesia has a profound impact on youth's daily and academic performance, leading to memory and cognitive problems, such as poor recall of information, lack of attention to detail, and difficulties with task procedures. Some studies have made a compelling case for cognitive offloading through digital devices, as it may free up cognitive resources for higher-order thinking. However, other evidence suggests that excessive reliance on technology limits long-term learning and cognitive development. In response, various coping strategies, including digital detoxes, time management, cognitive training, and educational programs, have been proposed in these diverse settings to help youth use technology more balanced and more mindfully. In conclusion, digital amnesia is a significant cognitive and behavioural issue for youth that warrants greater academic emphasis and intervention. Equally important are awareness programs among youth to reduce the negative impacts of digital amnesia. School administrators, policymakers and parents should bear in mind the effects of digital amnesia on the younger population. At the same time, they need to strategise on how best to overcome or limit the adverse effects of digital amnesia on the younger population.

CONFLICT OF INTEREST

There is no conflict of interest present.

REFERENCES

Alanzi, T. M., Arif, W., Aqeeli, R., Alnafisi, A., Qumosani, T., Alreshidi, A., Alhawsawi, S., Alnakli, R., Alotaibi, A., AlOthman, M., Khamisi, M., & Alanzi, N. (2024). Examining the impact of digital detox interventions on anxiety and depression levels among young adults. *Cureus*. https://doi.org/10.7759/cureus.75625

Ali, L.A.E.H., Ali, M.I.E.B., Ali, S.M.A. *et al.* Smartphone dependency, digital amnesia, and somatic symptoms among nursing students: the challenge of artificial intelligence. *BMC Nurs* 24, 599 (2025). https://doi.org/10.1186/s12912-025-03228-0

Baron, N. S. (2021). Know what? How digital technologies undermine learning and remembering. *Journal of Pragmatics, 175,* 27–37. https://doi.org/10.1016/j.pragma.2021.01.011

Cellini, N., Canale, N., Mioni, G., & Costa, S. (2020). Changes in sleep pattern, sense of time and digital media use during COVID-19 Lockdown in Italy. *Journal of Sleep Research*, 29(4). https://doi.org/10.1111/jsr.13074

Coyne, P., & Woodruff, S. J. (2023). Taking a break: The effects of partaking in a two-week social media digital detox on problematic smartphone and social media use, and other health-related outcomes among young adults. *Behavioral Sciences*, 13(12), 1004. https://doi.org/10.3390/bs13121004

Deckker, D., & Sumanasekara, S. (2025). A systematic review of the impact of Artificial Intelligence, digital technology, and social media on cognitive functions. *International Journal of Research and Innovation in Social Science,* 134–154. https://doi.org/10.47772/ijriss.2025.90300011

Gezgin, D. M. (2018). Understanding Patterns for Smartphone Addiction: Age, Sleep Duration, Social Network Use and Fear of Missing Out. *Cypriot Journal of Educational Sciences*, *13*(2), 166–177. https://doi.org/10.18844/cjes.v13i2.2938

Groenestein, E., Willemsen, L., van Koningsbruggen, G. M., Ket, H., & Kerkhof, P. (2024a). The relationship between fear of missing out, digital technology use, and psychological well-being: A scoping review of conceptual and empirical issues. *PLOS ONE*, 19(10). https://doi.org/10.1371/journal.pone.0308643

Groenestein, E., Willemsen, L., van Koningsbruggen, G. M., & Kerkhof, P. (2024b). Exploring the dimensionality of Fear of Missing Out: Associations with related constructs. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *18*(1). https://doi.org/10.5817/CP2024-1-4

Kanbay, Y., Babaoğlu, E., Akkurt Yalçıntürk, A., & Akçam, A. (2025). Digital amnesia: The erosion of memory. *Psikiyatride Güncel Yaklaşımlar*, 17(3), 544–553. https://doi.org/10.18863/pgy.1539145

Kanbay, Y., Yalçıntürk, A. A., Babaoğlu, E., & Akçam, A. (2025). Digital dementia: The mental destruction of technology addiction. *Journal of Psychiatric Nursing*, *16*(1), 67–72. https://doi.org/10.14744/phd.2025.53179

Laid, S. M. T. (2024, May 15). Exploring digital amnesia among generation Z: A literature review. Austin Addiction Sciences. https://austinpublishinggroup.com/addiction-sciences/fulltext/aas-v6- id1018.php

Lodha, P. (2019). Digital amnesia: Are we headed towards another amnesia. *Indian Journal of Mental Health*, 6(1), 18. https://doi.org/10.30877/ijmh.6.1.2019.18-22

Manwell, L. A., Tadros, M., Ciccarelli, T. M., & Eikelboom, R. (2022). Digital dementia in the internet generation: Excessive screen time during brain development will increase the risk of Alzheimer's disease and related dementias in adulthood. *Journal of integrative neuroscience*, *21*(1), 28. https://doi.org/10.31083/j.jin2101028

Nakshine, V. S., Thute, P., Khatib, M. N., & Sarkar, B. (2022). Increased screen time as a cause of declining physical, psychological health, and sleep patterns: A literary review. *Cureus*. https://doi.org/10.7759/cureus.30051

Pazer, S. (2024). Digital Detox in youth work: A quantitative study of social work professionals. *International Journal of Research and Innovation in Social Science,* 376–383. https://doi.org/10.47772/ijriss.2024.8110031

Radtke, T., Apel, T., Schenkel, K., Keller, J., & von Lindern, E. (2021). Digital Detox: An effective solution in the smartphone era? A systematic literature review. *Mobile Media & Communication*, 10(2), 190–215. https://doi.org/10.1177/20501579211028647

Setia, S., Gilbert, F., Tichy, M. L., Redpath, J., Shahzad, N., & Marraccini, M. E. (2025). Digital detox strategies and Mental Health: A comprehensive scoping review of why, where, and how. *Cureus*. https://doi.org/10.7759/cureus.78250

Savarimuthu, J. R., & Subramanian, K. (2022). Associations between digital amnesia, sleep disorders and somatic symptoms among youth. *Cognition, Brain, Behavior. An Interdisciplinary Journal* , *26*(2), 121–135. https://doi.org/10.24193/cbb.2022.26.07

Shanmugasundaram, M., & Tamilarasu, A. (2023). The impact of digital technology, social media, and artificial intelligence on Cognitive Functions: A Review. *Frontiers in cognition*. https://doi.org/10.3389/fcogn.2023.1203077

Ward, A. F., Duke, K., Gneezy, A., & Bos, M. W. (2017). Brain drain: The mere presence of one's own smartphone reduces available cognitive capacity. *Journal of the Association for Consumer Research*, 2(2), 140–154. https://doi.org/10.1086/691462

DOI: https://doi.org/10.5281/zenodo.20808098

APPENDIX (A)

No.	Author / Year	Research Approach	Key Results	Limitations
1	**Alanzi et al. (2024)**	Quantitative Intervention	Digital detox lowered anxiety & depression in youth	Short-term
2	**Baron (2021)**	Empirical Commentary	Digital habits weaken deep reading, retention, and metacognition	N/A
3	**Cellini et al. (2020)**	Survey	Increased screen time worsened sleep & memory during lockdown	COVID context; cross-sectional study
4	**Coyne & Woodruff (2023)**	Intervention	2-week detox improved sleep & reduced screen addiction	Small sample; short period
5	**Deckker & Sumanasekara (2025)**	Systematic Review	AI & tech overuse affects memory and cognitive capacity	Broad tech scope
6	**Gezgin (2018)**	Survey	Smartphone overuse linked to sleep loss and lower physical activity	Early-stage research
7	**Groenestein et al. (2024a)**	Scoping Review	FoMO drives digital dependence, harming attention & wellbeing	No causality proven
8	**Kanbay et al. (2025)**	Conceptual / Review	Memory "prosthetics" cause forgetting, weaken memory	Theoretical; no direct data

9	**Laid (2024)**	Literature Review	Gen-Z memory heavily offloaded to digital platforms	No primary data; Western-heavy
10	**Manwell et al. (2022)**	Neuroscience Review	Excessive screen time may impact brain development & dementia risk	Predictive; not longitudinal
11	**Nakshine et al. (2022)**	Review	Screen addiction worsens sleep, stress, physical health	General population
12	**Radtke et al. (2021)**	Systematic Review	Digital detox improves attention, memory, mood	Variation in detox protocols.
13	**Setia et al. (2025)**	Scoping Review	Detox boosts attention & clarity; social detox more effective	More trials needed
14	**Shanmugasundaram & Tamilarasu (2023)**	Review	Multitasking harms memory and academic performance	Broad digital technologies included
15	**Ward et al. (2017)**	Experimental	Phone presence reduces cognitive capacity	Lab-based; short-term