



## **The impact of technological addiction on students' academic achievement (Action Research)**

**Mariam Nabil Abdelmawgod – Menna Tallah Waleed Elsayed – Nada Mohamed Abdelbaset–  
Hoda Howary Saudi – Malak Ehab Samy– Mai Mahmoud Abdelfatah**

**Supervisor: dr. Afaf Hassan Mohamed Hassan Matter – lecturer in department of mathematics**

**Ain Shams University, Faculty of Education, Program: Bachelor of Science and Education  
(Preparatory and Secondary), mathematics private.**

### **Abstract**

The current study aimed to identify the impact of technological addiction on the academic achievement of students in adolescence (Preparatory and Secondary school), And stand on the negative effects of technology addiction among students of this stage, in addition to providing a set of proposals to solve this problem, As it has become the problem of the current era, and the study has used the descriptive analytical approach to analyze the scale of Internet addiction prepared by (Young 1996) to study the impact of technology addiction on individuals. This questionnaire was a data collection tool and was applied to a random sample of 21 students from Mohamed Hany Mostafa Official Language School, affiliated to the Heliopolis Educational Administration. The Excel program has been used in calculating the arithmetic mean and standard deviation and determining the general direction of each item of the questionnaire using the Likert quadruple scale. The results of the study reached the negative impact of technology addiction on students of this stage, where the results indicated the excessive use of the internet and the lack of control of students at this age group over themselves from the excessive attraction to various technological means, especially mobile phone, and extent of the negative impact of technology addiction on the students in all areas of their live, on their mood and their academic achievement.

### **Key Words:**

**technological addiction, academic achievement, teenager.**

**1. Introduction:** The increasing dependence on smart devices like tablets and smartphones has become deeply ingrained in the lives of children and adolescents, leading to noticeable shifts in their behavior and social interactions. While these tools were initially introduced to enhance learning and provide interactive educational resources, excessive use over time has posed significant challenges, especially concerning internet addiction and its psychological and behavioural impacts.

Children's behavioural and emotional development is closely tied to their surroundings, with family environments playing a pivotal role in shaping habits. As tablets become integral to education, it is crucial to assess their impact on children and ensure they do not foster addiction that could hinder natural development and social interaction. Although tablets can serve as effective educational tools, unregulated use may lead to social isolation. Balancing digital learning with real-world social engagement is essential for fostering healthy growth. Adolescence, a pivotal stage in human development spanning ages 9 to 19 according to the World Health Organization, is marked by profound behavioral, cognitive, and social changes. During this transitional period, adolescents are particularly vulnerable to the influence of technology. The habitual retreat into virtual spaces can result in serious disruptions to daily life, making technology addiction a widespread concern (Davey, 2014).

Technology addiction, characterized as compulsive behavior that negatively impacts individuals' lives, has become a growing issue. Many countries, especially in Asia, have established specialized clinics to address this form of addiction. One key factor behind compulsive technology use among adolescents is their struggle to control impulses toward highly engaging activities, such as internet browsing or video gaming (Wang, 2009). The problem of this study is to highlight the effect of technology addiction on students' academic performance. It also aims to examine how this addiction impacts their mental health and social behaviour. The importance of this study comes from the increasing reliance on technology among students, which may lead to negative consequences affecting their academic achievements, social interactions, and psychological ...well-being.

## **2. The Theoretical Framework**

### **Definitions of Internet Addiction**

Internet addiction is defined as a psychological disorder characterized by excessive and continuous use of the Internet without academic or professional necessity, which negatively affects an individual's daily life. According to Hossam El-Din Azab (2014, p. 336), this addiction manifests as compulsive behavior, making it difficult to stop Internet use without therapeutic intervention. It shares symptoms with substance addiction, such as repetitiveness,

withdrawal from reality, and difficulty quitting.

Johanna Rover Harvey (2016) defines Internet addiction as a disorder where an individual loses control over Internet use, leading to sacrifices in daily commitments, withdrawal symptoms, and repeated failures to quit.

Mouayad Maqdadi (2006) describes it as a pathological and maladaptive use of the Internet, where individuals spend more time online than initially intended, despite being aware of its negative consequences.

Rana Hamdy Abdelaziz (2021) defines an Internet addict as someone who cannot resist the urge to go online and experiences distress when attempting to stop or reduce usage.

This study adopts Hossam El-Din Azab's (2014, p. 337) definition as it is comprehensive, covering both the definition and characteristics of Internet addiction

### Characteristics of Internet Addiction

Internet addicts exhibit various symptoms that are often linked to underlying issues, such as poor academic performance. These symptoms include:

1. **Excessive Priority:** Internet use becomes the most important activity in an individual's life.
2. **Mood Changes:** The addict feels better when browsing the Internet, using it as an escape from reality
3. **Tolerance:** The addict needs to spend more time online to achieve the same level of satisfaction
4. **Withdrawal Symptoms:** Feelings of

anxiety, stress, and depression arise when attempting to stop Internet use.

5. **Conflict:** Struggles between the addict and their family or friends due to excessive Internet use.

6. **Relapses:** The addict returns to excessive Internet use after attempting to reduce it.

### Types of Internet Addiction

1. **Pornography Addiction:** Compulsive use of adult websites, often in secrecy.

2. **Relationship Addiction:** Excessive engagement in online relationships via social media platforms like Facebook and Instagram.

3. **Information Overload:** Excessive searching for information online

4. **Gaming Addiction:** Compulsive engagement in online and video games.

5. **Net Compulsions:** Activities such as online gambling and excessive online shopping

### Causes of Internet Addiction

Several factors contribute to Internet addiction, including:

1. **Anonymity and Privacy:** The Internet allows users to access information and communicate without revealing their real identities.

2. **Ease and Accessibility:** The Internet is an entertaining and easily accessible tool available at home or work.

3. **Escape from Reality:** The Internet offers an alternative reality where people with low self-confidence can create idealized identities and social connections.

---

### Negative Effects of Internet Addiction

Excessive and prolonged Internet use leads to various negative consequences, including:

1. **Academic Problems:** Declining academic performance due to neglect of studies.
2. **Social Isolation:** Reduced social interactions due to extended time spent online.
3. **Family Issues:** Weakening family relationships as addicts spend less time with their loved ones.
4. **Psychological Issues:** Increased risk of depression, anxiety, and loneliness.
5. **Workplace Inefficiency:** Reduced productivity due to excessive Internet use at work.
6. **Physical Health Problems:** Sleep disorders, obesity, headaches, and heart diseases.
7. **Moral and Ethical Issues:** Exposure to inappropriate content, impacting values and ethical beliefs.
8. **Financial Problems:** Overspending on electronic devices and online subscriptions.

### Definition of academic achievement

Academic achievement describes academic outcomes that indicate the extent to which a student has achieved their learning goals.

Academic achievement or academic performance is the extent to which a student, teacher or institution has attained their short or long-term educational goals. Completion of educational benchmarks such as secondary school diplomas and bachelor's degrees represent academic achievement.

Oxford University Press, 2014 Academic

achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university.

Dictionary of Education by Carter (1959) defines Academic Achievement as the knowledge attained or skills developed in the school subjects, usually determined by test scores or marks assigned by teachers or both.

### Previous Studies:

Several studies have addressed internet addiction and its relationship with some variables, such as psychological disorders and academic specialization.

Hamdi's Study (2015): This study aimed to examine the relationship between internet addiction and psychological depression among university students. The sample consisted of undergraduate students, and the study utilized a standardized internet addiction scale and a depression scale. The results indicated a statistically significant relationship between internet addiction and increased depression levels, with differences based on gender favouring males.

Kamel's Study (2016): This study explored the relationship between internet addiction and sleep disorders among university students. The sample consisted of 200 students. The results revealed significant statistical differences in internet addiction

levels based on gender, with higher addiction rates among males. Differences were also found based on academic specialization, with students in certain disciplines exhibiting higher addiction levels.

**Mohammed's Study (2017):** This research examined the relationship between internet addiction and social isolation among university students. The sample included 400 students from the College of Education. The study used standardized social isolation and internet addiction scales. The results indicated a significant correlation between internet addiction and social isolation, with males exhibiting higher addiction levels.

**Miftah's Study (2017):** Investigated the relationship between internet addiction, psychological wellbeing, and social health. The sample consisted of 243 students. The study employed a standardized internet addiction scale. The results revealed significant gender differences in addiction levels, with males showing higher rates.

**Al-Abyadh's Study (2020):** This study aimed to examine internet addiction and its relationship with future anxiety. The study sample consisted of 160 students. The study applied the Internet Addiction Scale (prepared by Arz and others, 2016) and the Future Anxiety Scale (prepared by Saeed, 2003). Some findings indicated differences in internet addiction levels based on academic specialization, with students in scientific disciplines showing higher addiction rates. Differences were also found based on

residence, with students from rural areas exhibiting higher addiction levels than urban students.

**Radhi & Hassan's Study (2020):** This study aimed to explore the relationship between internet addiction disorder and social isolation. The study sample included 200 male and female students. It applied the Internet Addiction Disorder Scale and the Social Isolation Scale (prepared by Al-Jabban and others, 2016). The results showed statistically significant higher addiction levels among males compared to females. Additionally, differences were found based on academic specialization, with students in literary disciplines exhibiting higher addiction levels than those in scientific disciplines.

**Madkour's Study (2021):** This study aimed to identify cognitive distortions and their relationship with internet addiction among university students, considering some demographic variables. The study sample consisted of 536 participants. It applied the Internet Addiction Scale (prepared by Kabir and others, 2016) and the Cognitive Distortions Scale (prepared by Arz, 2016). The results indicated a statistically significant presence of cognitive distortions among internet-addicted individuals. Additionally, there were significant gender-based differences in addiction levels, with males showing higher addiction rates. Differences were also found based on academic specialization, with students in scientific

disciplines exhibiting higher addiction levels than those in literary disciplines.

### 3. Methods of Research and the tools used

**Research methodology:** It is the descriptive analytical approach (which is the appropriate approach with the nature of the research and the sample)

**Research sample:** The Internet Addiction Scale, prepared by (Young 1996), was applied to 21 Preparatory and Secondary school students from Mohamed Hani Mustafa Official Language School, affiliated with the Heliopolis Educational Administration. The small sample size is due to the frequent absence of students and the relatively small number of students in the classes. The questionnaire (Young's scale) was applied at the beginning of February of the academic year (2024–2025).

**Research tools:** Young's Internet Addiction Scale (prepared by Young 1996). The scale

consists of 16 items that address Internet addiction among students. The scale was analyzed using Excel by calculating the arithmetic mean and standard deviation for each item of the scale. The scores were estimated on a four–point Likert scale.

The scale is based on three main dimensions:

- Excessive use and loss of control, measured by items (1, 2, 3, 4, 5, and 7)
- The emergence of negative effects of addiction, measured by items (6, 8, 9, 10, 12, 13, and 14)
- Withdrawal symptoms, measured by items (11, 15, and 16).

### 4. Results of Research

We present the most important results of the field study, which was conducted by applying Young's scale to a random sample of students. The results were divided based on the three basic dimensions described by Young in his scale into the following three tables:

**Table (1): Excessive use and loss of control**

	Items	Mean	Standard division	General trend
1	I usually spend more time online than I planned	3.6666667	0.5773503	Several
2	I neglect a lot of my homework to spend more time on the internet	3.0952381	0.830949	Moderate
3	The fun I get from the internet is better than the fun I get from other places	2.7619048	0.9436505	Moderate
4	I have made many friendships with fellow internet users	2.8571429	1.2761549	Moderate
5	I have problems with my studies because of the long time I spend on the internet	2.6190476	1.1169687	Moderate



7	My performance at work has become low because of the internet	2.3333333	1.0645813	Mild
---	---	-----------	-----------	------

**Table (2): The emergence of negative effects of addiction.**

	Items	Mean	Standard division	General trend
6	Opening emails is my priority before browsing the internet	2.6666667	1.0645813	Moderate
8	I keep my online activities completely confidential	2.4285714	1.0757057	Mild
9	I wander in my imagination about things I saw on the internet	3.0952381	0.830949	Moderate
10	I think I can't stop using the internet	3.14285714	1.15263673	Moderate
12	I get very upset if I hear a sudden sound or someone enters my room while I am connected to the internet	3.14285714	1.06234243	Moderate
13	I have made many friends from fellow internet users	2.66666667	1.197219	Moderate
14	I find it difficult to sleep at night because of staying up late on the internet	3.14285714	1.01418511	Moderate

**Table (3): Withdrawal symptoms**

	Items	Mean	Standard division	neral trend
11	Life without internet would be boring and depressing	3.14285714	1.10840941	Moderate
15	Every time I want to get off the internet I say to myself "I'll stop for a while "	3.66666667	0.79582243	Severe
16	All my attempts to reduce my online time have failed	2.9047619	1.30018314	Moderate

---

## 5. Interpretation of Results

The data in table (1) showed that the results of the table came with an arithmetic mean (2.888889) and the first item (I usually spend more time online than I planned) in the table had the highest arithmetic mean (3.6666667) while the seventh item (My performance at work has become low because of the internet) had the lowest arithmetic mean (2.3333333) and this indicates the excessive use of the internet and the lack of control of students at this age group over themselves from the excessive attraction to various technological means, especially mobile phone.

The data in table (2) showed that the results of the table came with an arithmetic mean (2.897959) and the tenth item (I think I can't stop using the internet), twelfth item (I get very upset if I hear a sudden sound or someone enters my room while I am connected to the internet) and fourteenth item ( I find it difficult to sleep at night because of staying up late on the internet ) in the table had the highest arithmetic mean (3.14285714) while the eighth item (I keep my online activities completely confidential) had the lowest arithmetic mean (2.4285714) this indicates that the extent of the negative impact of technology addiction on the students in all areas of their life, on their mood and their achievement.

The data in table (3) showed that the results of the table came with an arithmetic mean (3.238095) and the fifteenth item (Every time I want to get off the internet I say to myself "I'll stop for a while ") in the table had the

highest arithmetic mean (3.66666667) while the sixteenth item (All my attempts to reduce my online time have failed) had the lowest arithmetic mean (2.9047619) this indicates that the students is aware of their excessive internet use and frequently thinks about reducing their usage .however they mayn't take a serious step to reduce their internet time .

## 6. Conclusion

The current study aims to study the impact of technology addiction on students' academic achievement. Young's Technology Addiction Scale was applied to a random sample of students. The contents of the scale were transcribed and processed statistically using Excel statistical program. The study concluded that technology addiction has a negative impact on students' academic achievement at this age. Therefore, some researchers have put forward some suggestions to solve this problem, including: Young (1999) suggested that Using time management apps (such as Rescue Time, Freedom, or StayFocusd) can help students track and reduce unnecessary online activities.

Implementing Pomodoro techniques and structured study schedules enhances focus and productivity.

Montag, C., & Reuter (2017) suggested that Encouraging students to take planned breaks from social media and entertainment sites can improve concentration. Screen-free study zones in



schools and homes can reduce distractions.

Király and others (2014) suggested that schools should conduct awareness programs on internet addiction and its academic effects. Teaching students about healthy digital consumption helps promote self-regulation.

Kuss, D. J., & Griffiths (2012) suggested that the parental control tools (e.g., Google Family Link) can help manage screen time. Teachers should integrate interactive offline learning methods to reduce reliance on screens.

Przybylski and others (2012) suggested that Extracurricular activities like sports, arts, and social clubs provide meaningful offline engagement. Encouraging physical activities reduces screen dependency.

Young (2007) suggested that the schools should provide therapy programs for students with internet addiction symptoms. Cognitive Behavioural Therapy (CBT) is an effective treatment for compulsive internet use.

Anderson and others (2017) suggested that Encouraging students to use educational tools instead of entertainment websites. Teaching digital well-being and self-control strategies through school curriculums

Twenge, J. M., & Campbell (2018) suggested that the schools should set restrictions on mobile phone use during study hours. Limited access to non-

educational websites within school networks can help minimize distractions

## Acknowledgement

We thank ALLAH for the success in completing this study, and we also thank our fathers and mothers for their support during the educational stage and the stage of completing the research.

## References and Sources

- Young, K. (1996). Internet addiction: the emergence of new clinical disorder, paper presented at the 104<sup>th</sup> annual meeting of psychological association, Toronto, Canada, August 15, 1996.
- Davey, S.& Davey, A. (2014). Assessment of smart phone addiction in Indian adolescents: A mixed method study by systematic review and meta- analysis approach. *International Journal of preventive Medicine*, 5(12), 1500–1511.
- Wang, D., OU, C. Q, Chen,M.Y .& Duan, N . (2009). health promoting lifestyles of university student in Mainland chain. *BMC public health* 9(1), 379.
- Azab, H.E (2014). Psychometric properties of the Internet Addiction Scale, *Journal of Psychological Counseling*, Issue (45), pp. 333–362.
- Harvey, J.R. (2016). Psychometric properties of the Internet addiction scale among primary school students from the parents' perspective. *Arab Journal of Measurement and Evaluation*.
- Abdelaziz, R.H. (2021). Internet addiction is the scourge of our time. *National Center for*

---

**Social and Criminological Research, Issue 4, (205–228).**

**Hamdi, S. (2015). Internet addiction and its relationship to psychological alienation and aggressive behavior among high school students. Unpublished master's thesis, Faculty of Humanities, Social Sciences, and Islamic Sciences, University of Hadj Lakhdar–Banta.**

**Kamel, S. H. (2016). Internet addiction and its relationship to motivation towards academic achievement among students at the University of Diyala, Al–Fath Journal, (68), 269–301.**

**Mohamed, I, R. (2017). Internet addiction and its relationship to some psychological variables among students of the Faculty of Physical Education, Minya University. Assiut Journal of Physical Education Sciences and Arts, 44(2), 231–284.**

**Miftah, R. (2017) Internet addiction and its relationship to psychological resilience among a sample of students from the Faculties of Education and Science, Tarhuna, Journal of Zaytouna University, Libya, (24), 69–105.**

**Al–Abyad, M. H. (2020) Internet addiction and its relationship to future anxiety among a sample of students at Prince Sattam bin Abdulaziz University. Journal of Psychological Counseling, 61 (61), 327–366.**

**Radi and others (2020). Internet addiction disorder and its relationship to social**

**isolation among university students, Journal of the College of Education, University of Wasit 3 (38), 1057–1090.**

**Madkour, S. (2021) Cognitive distortions and their relationship to Internet addiction considering some demographic variables. Journal of Psychological Counseling, (65), 91–147**

**Young, K. S. (1999). Internet addiction: Symptoms, evaluation, and treatment. Innovations in Clinical Practice: A Source Book, 17, 19–31**

**Montag, C., & Reuter, M. (2017). Internet addiction: Neuroscientific approaches and therapeutical implications including smartphone addiction. Springer.**

**Király, O., Nagy György, K., Koronczi, B., Griffiths, M. D., & Demetrovics, Z. (2014). Assessment of problematic internet use and online video gaming. Cyberpsychology, behaviour, and Social Networking, 17(2), 116–123.**

**Kuss, D. J., & Griffiths, M. D. (2012). Internet and gaming addiction: A systematic literature review of neuroimaging studies. Brain Sciences, 2(3), 347–374.**

**Przybylski, A. K., Weinstein, N., & Murayama, K. (2012). Internet gaming disorder and psychological well-being. Journal of the American Academy of Child & Adolescent Psychiatry, 51(9), 873–880.**

**Young, K. S. (2007). Cognitive behaviour therapy with Internet addicts: Treatment outcomes and implications.**

---

**Cyberpsychology & Behaviour, 10(5), 671–679.**

**Anderson, E. L., Steen, E., & Stavropoulos, V. (2017). Internet use and problem internet use: A systematic review of longitudinal research trends in adolescence and emergent adulthood. International Journal of Adolescence and Youth, 22(4), 430–454.**

**Twenge, J. M., & Campbell, W. K. (2018). Associations between screen time and lower psychological well-being among children and adolescents: Evidence from a population-based study. Preventive Medicine Reports, 12, 271–283.**