

Causal Analysis of Internet Addiction among Chinese Primary and Secondary School Students

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The advent of the Internet has provided humanity with massive benefits. Yet, internet-related problems, such as internet addiction, have become more frequent. Internet addiction is a major research issue in the domains of education and psychology. While there has been substantial research on student internet abuse in China and around the world, little is known about the online behavior of primary and secondary school students in China. These students are in crucial periods of mental and physical development, making them especially prone to internet addiction. This paper seeks to summarize the current status of internet reliance among Chinese schoolchildren, explain its underlying reasons, and emphasize the potential dangers in order to stimulate further discussion about the topic.

Keywords: Internet Use; Internet Addiction; Primary and Secondary Students

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THE present generation of youngsters, known as “Web natives,” has made the internet an integral part of daily life. The *Annual Report on the Internet Use of Chinese Minors* (2021) was published by the China Internet Network Information Center (CNNIC) in November 2022. It was based on a survey that included 26,349 minors from primary, secondary, and secondary vocational schools, 13,283 parents, and 1,632 teachers in 31 provincial administrative regions. According to the estimate, China had 191 million minor internet users in 2021, with a penetration rate of 96.8%. In particular, students in primary and secondary schools had internet penetration rates of 95.0% and 99.4%, respectively (1). The statistics show how important the internet has become to students’ daily lives and studies. They frequently use technology as a tool for learning, entertainment, and social interaction.

In the context of the development of digital education in China, the installation of internet infrastructure in educational communities continues to increase, and the Internet literacy of minors has been vastly improved. In the ten years between 2012 and 2021, the proportion of Chinese elementary and secondary schools with internet connectivity increased from 25% to nearly 100%. Computer and network literacy has the ability to play a beneficial, growth-promoting role in the development of students since it enables them to better adjust to societal changes. With the increased usage of networks among elementary and secondary school children, internet addiction among these students has become a growing concern.

An Overview of Internet Addiction among Chinese Basic Education Students

The majority of both primary and secondary students are naturally inquisitive and eager to acquire new information. However, due to inadequate self-control and underdeveloped control skills, they are more susceptible to problematic Internet use (2).

Definition and Assessment of Internet Addiction

The term “internet addiction” was initially proposed by psychologist Ivan Goldberg, who did so in reference to the diagnostic criteria for drug addiction in the Manual for the Diagnosis and Statistics of Mental Disorders. He claimed that excessive internet use results in internet addiction, a behavioral condition that affects people physically, psychologically, and socially (3). After that, other scholars, like Young (4), Davis (5), and Zhou and Zhou (6), continuously updated the definition. In its *Core Information on China Adolescent Health Education and Interpretation* (2018), the China Health Education Center (CHEC) defined internet addiction as compulsive use of the internet in the absence of intoxicants that has a significant negative impact on academic and professional achievement as well as social functioning (7).

A number of diagnostic methods have been created to diagnose internet addiction in persons from the pathological, psychological, and behavioral perspectives as a result of the expanding body of research on online dependency, and the research’s subject matter has gotten increasingly specific. In his research, Young created an 8-item diagnostic questionnaire, where subjects were deemed internet addicts if they responded “yes” to five (or more) of the eight questions (4). The persistent nature of online dependence (at least 12 months) was established as a diagnostic criterion for the internet addiction disorder in CHEC’s *Core Information of China Adolescent Health Education and Interpretation* (7).

The Current State of Internet Addiction among Chinese Minors

The age distribution of Chinese internet users is showing a trend towards an increase in the percentage of child internet users, with 28.2% of primary school students having access to the internet prior to beginning school, according to *Blue Book of Teenagers: An Annual Report on the Internet Use of Chinese Minors* (8). Inadequate internet usage education and internet addiction have grown to be more prominent difficulties among minors as a result of the internet’s increasing popularity and extensive use.

Researchers with various Chinese academic institutions conducted a series of studies into internet abuse among minors using the *Clinical Diagnostic Criteria for Internet Addiction* by Tao et al. (9), Young’s internet addiction diagnostic questionnaire (4), and other tools. According to the China Youth Association for Network Development’s (CYAND) *China Youth Internet Addiction Report 2022*, there are approximately 24.042 million teenagers who are internet addicts, making up about 14.1% of all adolescent internet users, and there are 13% of internet users who have the potential to become dependent on it (10). Using stratified random sampling, Li et al. looked at 5,912 secondary school students from 24 middle schools in 3 cities (or prefectures) in Guizhou Province and found that the detection

rate of internet addiction among them was 9.5%. (11). In order to gauge the degree of online reliance among more than a thousand children from two primary schools and two junior secondary schools in Jiaying City in 2022, Ling et al. employed the Internet Addiction Scale. According to the study’s findings, there was a 6.53% detection rate of internet addiction among them, with 5.88% of them having a moderate online addiction and 0.65% having a severe one (12). She and Li randomly selected students from three secondary schools in Shantou City for a questionnaire survey, and they discovered that 24.58% of them had moderate online addictions and 1.60% had severe pathological internet use (13). According to Guo’s research, 12.5% of 774 elementary school kids and their parents in Chenghua District, Chengdu City, had internet addiction (14). Current data and research findings show that Chinese primary and secondary students overuse the internet severely.

The Harm of Internet Addiction to Primary and Secondary School Students

Multiple studies revealed that excessive internet use was detrimental for people’s physical and mental health, especially young people who are still developing. Long-term computer use by kids and teenagers can easily cause myopia and have a negative impact on their sleep and growth (15); it may also have varied degrees of adverse effects on their cognitive development, interpersonal communication, academic achievement, and other aspects (16). The internet is a global medium without geographical restrictions, making it difficult to examine and verify information. As a result, inaccurate, outdated, or harmful information may also spread on the network, impairing children’s ability to distinguish between right and wrong, weakening their sense of social responsibility, and causing them to have confusion about their outlook and values (17). Additionally, because it is a virtual environment, the internet may induce in young people a tendency to dehumanize themselves, cutting them off from the actual world and leading to withdrawal, anxiety, despair, and even personality disorders (18).

Damage to Physical Health

Since adolescents are at crucial stages of physical development, like primary and secondary school students, excessive internet use poses a number of health risks. Long-term internet users frequently complain of neck pain, weariness, headaches, and dizziness (19). One of the obvious effects of engaging in internet activities is visual impairment. Constantly staring at a computer screen results in visual issues such as nearsightedness, vision loss, eye pain, photophobia, and a decreased capacity to adjust to darkness (18). Youngsters who are dependent on the internet progressively become sedentary, which is bad for their bone growth and is likely to result in obesity and other health issues linked to the lack of physical activity (20). Young internet users frequently stay up late or have trouble falling asleep, which significantly reduces the quality of their sleep (21). Furthermore, young people’s brains may be harmed by internet addiction. Researchers at the Chinese Academy of Sciences discovered that adolescent internet addicts’ brains differ from those of their friends who do not have the internet addiction (22).

Hazards to Mental Health

Children and teenagers who rely heavily on the Internet are more sensitive to unpleasant emotions, including loneliness, anxiety, and depression. Zhang et al. stated that an individual's internet addiction and mental health could influence each other. Significantly predicting an individual's level of internet addiction are symptoms such as depression and withdrawal; conversely, online addiction problems will aggravate their depression and loneliness (23). According to Gao's study, children with a chronic addiction to internet gaming may acquire autistic tendencies, disrupting brain development, and the physical deterioration caused by excessive online gaming will also lead to psychological issues (24). Even worse, children's psychological reliance on the Internet may develop into pathological addiction, which is marked by mental problems, aberrant actions, and bizarre personalities when they are unable to use the Internet (25).

Reduced Academic Efforts

After becoming addicted to the internet, it is extremely difficult for young people to concentrate on their academic work. In their study, Dong et al. discovered that extensive internet use can foster children's preferences for digital graphic, audio, and video content while lowering their interest in academic subjects. As a result, they may spend significantly less time learning and struggle to stay motivated (26). Online games and chats, particularly the former, are the leading causes of internet addiction for primary and middle school students. Video gamers need to devote considerable time online if they want to rise in ranks and achieve more in the virtual world. Online games also give adolescents a way to express their bad feelings that are brought on by difficulties in the real world. Adolescents are more eager to satisfy their unfulfilled wants in real life through their virtual characters in the games, and they will spare no time or effort improving their levels and gear for this purpose. Internet addiction consequently has a negative effect on students' academic performance (27).

Inducing Delinquent Acts

There has been a steady rise in immoral, deviant, and even illegal behavior associated with online gaming addiction in recent years. The fundamental components of the majority of online games are aggressiveness, violence, and competition. Long-term exposure to violent virtual environments will cause young players to confuse the virtual world with real life, lose their sense of morality, and falsely believe that it is acceptable to achieve one's own goals by harming others (28). Some adolescents may engage in delinquent behavior, such as robbing younger classmates and stealing from their parents and professors, in order to finance their online activities. In addition, minor Internet addicts frequently linger in cybercafés, where dropouts and juvenile offenders congregate, when they skip school or attempt to evade parental supervision. There is a considerable chance that they will make friends with "bad guys" and become involved in illegal activities (29).

Causes of Internet Addiction among Primary and Secondary School Students

Understanding the causes of internet addiction among students

in basic education is crucial for effective intervention. Previous studies had shown that a range of factors, including those relating to the individual and those relating to the home environment, education, and social culture, contribute to internet addiction in children and adolescents.

Internet's Inherent Characteristics Make It Enticing to Minors

- The interactivity and instancy of the internet make it an unrivaled medium. In this aspect, the ever-changing technology presents a significant temptation to curious young students (30).
- The anonymity of the internet allows unrestricted online activities (30). When compared to face-to-face interaction, online communication can be conducted without exposing personal information such as appearance or identity, allowing for equal conversation on any topic. Furthermore, the many-to-many online communication pattern can give people the impression that they can elicit a wide range of answers via the internet.
- The hyperlinking feature of the internet allows people to easily navigate between websites. This type of linking generates the "time warp" effect (30), and after clicking on multiple links, students may forget why they initially went online.

Basic Education Students' Psychological Features Predispose Them to Internet Addiction

Unmet Social Needs

As their consciousness increases, young students become less receptive to others. Individuals who lack effective contact with their parents, instructors, and peers are likely to develop an introverted personality and a sense of isolation from those around them. In this environment, they may experience extreme loneliness, believing they have no one in whom they can confide (31). With the expansion of their living area, children's communication needs are increasing. Students who are "lonely and friendless" can find someone with whom to discuss their "secrets" thanks to the virtuality and anonymity of the Internet, which provides a secure social environment (32).

Seeking for Identity

Individuals, especially students in primary and secondary school, develop their identities through interaction with the external environment, with the evaluation of others playing a significant role in this process. In addition, they want to project a positive image of themselves to others in order to gain respect (33). The Internet's virtual reality gives adolescents more opportunity to modify their self-image and to display themselves in more detail. For instance, individuals may share their life experiences on social media to highlight the positive or even exceptional aspects of their lives. In the meanwhile, they are particularly concerned with remarks made by others on social media sites and continue to reply to them. This will entice them to join an online social network (34).

Academic Burden to Avoid

It is human nature to seek pleasure and resist discomfort. Chinese primary school students are still subjected to intense educational competition. *Learning to Be: The World of Education Today and Tomorrow* stated that children's personalities should not be divided into two distinct areas: in one, children are engaged in learning like puppets divorced from reality; in the other, they seek self-satisfaction through activities unrelated to education (35). As an escape from scholastic pressure, many children and adolescents prefer to engage in online entertainment for relaxation and self-comfort.

Individual Personality Traits

Accordingly, problematic internet users have the following personality traits: they are isolated, sensitive, melancholy, watchful, nonconformist, and favor abstract thinking (36). Students who possess these characteristics are more prone to internet addiction. Also, an undeveloped personality throughout childhood and adolescence contributes to internet reliance. Minors can experience suppressed impulses and taboos in real life via gaming, chatting, and making friends online.

Improper Family Education

The family provides an essential environment for the development of students. Parenting style is closely connected with student Internet usage. Children's pathological Internet use is a result of poor parenting. There are primarily two problematic approaches to dealing with internet use by children in the home. One is the *laissez-faire* approach, in which parents place no restrictions on their children's internet use and instead use computers to keep them "busy" and quiet; the other is the forbidding approach, which has the unintended consequence of making the internet more alluring to children, who will go to any length to cling to it. Furthermore, the majorities of student Internet addicts come from dysfunctional families and are more likely to seek comfort and a sense of belonging online (18).

Monotonous and High-pressure School Education

While basic education curriculum reform has produced impressive achievements, the transformation of teachers' educational conceptions has proven to be more difficult than anticipated, and the majority of their teaching techniques do not correspond to the features of student physical and mental development. The academic burden of students has not been greatly reduced as a result of competitiveness in high-stakes tests. Overburdening schoolwork causes academic fatigue, making the internet an

appealing location for elementary and secondary students to avoid stress. Furthermore, a lack of internet use education in schools contributes to student online addiction (37). Overemphasis on academic performance while ignoring education on life issues such as internet usage can lead to students becoming lost in cyberspace (38).

Detrimental Influences of Popular Social Cultures

Popular cultures, especially cyberculture, have a significant impact on raising students' reliance on the internet (18). The volume and turnover of China's online entertainment business, which primarily consists of internet cafes and online games, have increased exponentially. Yet, this industry does not yet have a corporate social responsibility structure in place. As a result, it has produced many negative "side effects," such as millions of minor internet addicts and an irresponsible industrial model centered only on hooking children and teenagers. The sector has made related firms expand quickly, but at the expense of millions of youngsters becoming addicted to online games and their healthy development being significantly hampered (39).

Conclusion

In the digital age, the internet has invaded every aspect of students' lives. While it can substantially help students learn, it can also have a negative impact on their development if used inappropriately. The prevention and intervention of internet addiction among primary and secondary school students merits the attention of society as a whole. The Ministry of Education of China underlined the necessity of coordinated efforts from the family, school, and nation in overseeing student internet use in its *Notice on Improving the Regulation of Smart Phone Use among Primary and Secondary School Students* (40). Isolating students from the internet is both inadvisable and impracticable in the age of information technology. It is critical to educate students on the proper usage of the internet in order to grow qualified citizens for the digital society. Parents should actively work to increase their own internet literacy and assist their children in developing responsible internet usage. To enliven students' campus lives, schools should boost online instruction and counseling, as well as create colorful extracurricular activities. The government should tighten oversight of internet-related enterprises, particularly those with the ability to influence student internet activity. A healthy network environment can be developed through collaborative efforts to maximize the internet's positive impacts on fostering minors' development. ■

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