

The Detrimental Effects of Mobile Game Addiction on Chinese Primary School Students and Possible Interventions

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Abstract: *Smart phones have permeated every part of people's lives in the mobile internet era and are virtually taken for granted on a daily basis. Chinese primary school students are facing a serious problem with mobile gaming addiction as a result of their easy access to cell phones. The excessive usage of mobile games has negative impacts on children's academic performance, physical health, and mental health, and may possibly have severe, irreversible implications. It is crucial for educators and the general public to address the issue of mobile game addiction in primary school students. This article examined the current state of mobile gaming among primary school students and the negative effects of mobile game addiction on schoolchildren, looked at the contributing factors from the perspectives of students, parents, schools, and society, and suggested some coping mechanisms.*

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CONSUMERS now frequently use smart phones for everything from communication to financial transactions as a result of the widespread use of mobile internet. Additionally, they are now more readily available to primary school students, which have led to an addiction issue with mobile games among them. Mobile games provide students with fun and relaxation when they are played in moderation, but extreme video game reliance might have detrimental effects on students' development. When a person becomes compulsively and uncontrollably dependent on a certain action, they are said to be behaviorally addicted. When this habit is discontinued, the person experiences physical or mental pain. In spite of the detrimental effects on their health, employment, or education, mobile game addiction happens when gamers heavily rely on their smart phone's video games, experience an overpowering need to play them, and spend disproportionately lengthy periods of time doing so (Yang, 2016). In China, smart phone gaming addiction is currently getting worse among primary school students, raising serious worries throughout the entire country. Although the government's enactment of pertinent regulations and the introduction of several intervention strategies by video game firms have helped to lessen students' reliance on mobile games, the problem still requires the efforts of all parties. The current state of mobile gaming among Chinese primary school students is discussed in this article, along with the root reasons for mobile game addiction and how it negatively affects children. Relevant countermeasures are also suggested to help with the prevention and treatment of schoolchildren's reliance on mobile games.

Mobile Game Addiction among Chinese Primary School Students

The 49th Statistical Report on Internet Development in China was made public by the China Internet Network Information Center (CNNIC) on February 25, 2022. It demonstrated that by December 2021, China had 1.032 billion internet users, a rise of 42.96 million from the previous year, and an internet penetration rate of 73.0%. 99.7% of Chinese internet users use their mobile phones to access the internet, making them the most popular device for this purpose (CNNIC, 2022). Primary school students accounted for almost one-third of China's juvenile internet users in 2020, according to CNNIC's Annual Report on the Internet Use of Chinese Minors, and the percentage is rising each year. 92.2% of them select mobile phones as their main means of accessing the internet. According to data, one of their most popular mobile phone pastimes is playing video games (CNNIC, 2021).

In Liqiao Chen's (2019) study, 92.2% of the student subjects had prior experience with mobile gaming. 25% of them became addicted to mobile games, with boys accounting for 93% of the addicts. The majority of them are between the ages of 10 and 12, with the youngest being only 8 years old. In terms of time spent on mobile gaming, 13.5% of the students questioned played for 1-2 hours per day, while 5.21% played for more than 2 hours per day. These two groups spent the most of their free time playing mobile games. When asked if they would voluntarily quit playing, 71.95% of the subjects indicated that they must be persuaded by others to stop, 21.47% said that they must be urged by others several times to cease, and all of them expressed significant reluctance when forced to stop. In terms of self-regulation in mobile gaming, 63.25% of the students polled said they constantly desired to reduce the number of game times but couldn't stop themselves from starting the next game. Wang's (2021) study found that most primary school junkies would significantly increase their mobile gaming time on

weekends and holidays. On weekends, they could spend up to three to four hours a day playing video games, much more than on school days; especially during the winter and summer vacations, the situation deteriorated, with some students playing mobile games for up to five or six hours a day.

The Negative Impact of Mobile Game Addiction on Primary School Students

Students in primary schools are the most vulnerable to mobile game addiction because many of them lack the self-discipline required to restrict gaming time and resist the attraction of the virtual reality presented in game settings. They will uncontrollably increase the time and energy invested in mobile games once they become addicted to them. This is exceedingly damaging to their growth and development and may possibly have lasting consequences.

Damaging Students' Physical and Mental Health

The primary school years are a critical time in a child's physical development. Young children need enough sleep and physical activity for healthy growth. Long periods of time spent texting and playing mobile games can result in issues like pain in the cervical spine, vision loss, spinal curvature, decreased brain development, and more. Playing video games for extended periods of time can cause high levels of stress, which can worsen neurasthenia and weaken immunity. An adolescent in Guangzhou had a cerebral infarction and came dangerously close to death in 2017 after playing the smart phone game "Honor of Kings" for 40 straight hours (Chen et al., 2018).

Long-term video gaming has a detrimental effect on schoolchildren's mental health as well. The early years of education are crucial for the development of a person's viewpoint. Some of the most well-known mobile games right now, like "Honor of Kings" and "Game for Peace," are violent and not suitable for young children. By killing adversaries and performing other heinous deeds in games like this, players can increase their levels or rankings. Too much exposure to violent culture may result in children who have not yet established the correct viewpoint and values becoming violent in real life (Lu, 2018). Due to the effects it has on children's thinking and communication, excessive virtual reality play in mobile games can cause them to become disconnected from reality. They could experience anxiety disorders and even depression if they are forced to leave the virtual world.

Degrading Students' Academic Performance

After being hooked on mobile games, students will devote more time and effort to advancing their "levels" and "rankings," and some may even play games in their sleep. Therefore, it is impossible to guarantee their normal rest and study time. According to World Health Organization research, adolescents sleep less each night the more time they spend on their mobile phones. Mobile gaming is likely to keep minors up late, contributing to the problem of insufficient sleep (World Health Organization, 2019). Despite the fact that some video game enthusiasts can manage their play time and get enough sleep, it is often difficult for them to concentrate on learning since their minds are still preoccupied with the game's plot and substance from the previous evening. In addition, the content of the textbooks is so monotonous in comparison to the exciting

and engaging mobile apps that it is difficult to motivate them in the classroom. As a result, many young game addicts are unable to pay attention in class and must rush through their homework after school, resulting in deterioration in their academic performance. The negative effect of excessive mobile gaming was confirmed by Li's (2019) study, in which nearly 14.4% of the subjects believed that their participation in mobile games caused their inability to concentrate on lessons and homework, 46.9% believed that playing mobile games could occasionally distract them from classroom learning and homework, and 31.3% reported that their academic performance declined as a result of their participation in mobile gaming.

Impairing Students' Social and Emotional Ability

Currently, the majority of primary school children live in homes with only one other child. Because their parents are too busy working to spend meaningful time with them, they become accustomed to living alone in their personal world at home. The young students would rather play in the virtual world than speak to their always-hurried parents. They can find emotional engagement in the virtual world of games that they lack in their family life. Such emotional benefits increase their virtual reality addiction, which distances people over time from real connections in the outside world (Jing & Liu, 2019). Because of this, students with video game difficulties generally have unapproachable and indifferent facial expressions and are indifferent to interactions with peers and teachers at school as well as with their parents. A shocking news story from 2017 described a youngster in a primary school in Hangzhou City who attempted suicide by jumping from the fourth floor following a disagreement with his father about playing mobile games. Surprisingly, after he regained consciousness in the hospital, he expressed more worry for the development of the game he had been playing than for the feelings of his family. Relevant studies have shown that while most mobile gaming addicts have issues with rejecting communication, being cold and aloof to others, and being irritable, on the inside they often have complex and original ideas that are unapproachable to those around them. Overindulging in mobile games might cause students to experience varied degrees of interaction impairment, according to numerous studies and news stories.

Inducing Students' Misbehavior

The majority of mobile game apps provide a paid service, allowing users to top up their accounts in order to purchase virtual goods or gaming-related equipment. In general, students only receive pocket money from their parents as a source of income. It can be challenging for people with poor self-control to resist the temptation of virtual objects in games. One approach is to steal money from their parents. For instance, a sixth-grade student in Fuzhou City covertly linked the bank card account of her father to her WeChat account and spent 110,000 CNY in three months, the majority of which was spent topping off several game accounts. Similar incidents have occurred often in recent years, causing a great deal of public discussion. Some of the youngsters who tried to obtain the passwords to their parents' bank accounts but were unsuccessful were bold enough to perpetrate crimes, including robbing younger children in schools, stealing other people's property, and more (Li et al., 2021).

Reasons for Schoolchildren’s Addiction to Mobile Games

The Attraction of Mobile Games

The most prominent benefits of cell phones are mobility and convenience. Due to the development of internet and communication technologies, mobile phones can now be used as an alternative to desktops for internet access. They are no longer required to use computers to play games, as they were many years ago. They can play games on their phones at any time and from any location. Popular smart phone games such as “Honor of Kings” and “Game for Peace” are literally competitive games that players find interesting, intriguing, and daring. In “Game for Peace,” players are just required to use their fingers to do a sequence of tasks, including altering the direction, opening the magnifier, and firing. The simple operation makes it easy for young players to begin playing after a few practices (Kuang, 2017). The developer of “Canal Towns” attempts to create the background and content of the game in response to seasonal changes and to simulate the buildings at scenic spots and historic sites across the country in order to design those in the game, so that players can feel a sense of immersion and participation in scenarios that are similar to reality (Zhu & Li, 2022). All mobile games offer awards to entice players, who can receive system rewards or special titles based on their game level. These prizes can effectively raise player engagement and excitement for the game.

Student-related Factors

First off, primary school students frequently lack self-control and willpower, making it simple for them to become excessively obsessive with particular topics. In contrast to the dry schoolwork, video games represent vibrant, captivating worlds. Students who become gaming addicts may become completely preoccupied with their game-related thoughts. Second, students this age want to impress their parents and teachers, but some of them don’t succeed, so they turn to virtual reality games where they can improve their levels and boost their confidence. Third, students have a propensity for group thinking. If a student sees friends and classmates playing a mobile game, their curiosity will be piqued, and they will want to participate in the activity (Che, 2019). Many students in primary school participate in mobile games despite not actually playing them; they do so because their peers and classmates are observed playing. Students typically form their own little social “coteries.” When playing mobile games is highly desired in a social group, a child who has not done so appears less social and finds it difficult to engage in discussion with others. He or she is probably going to become isolated or even excluded over time. The original non-mobile game user will join in on the fun and then suggest the game to more of his or her friends in order to become a part of the group.

Family- and School-Related Factors

Today’s fast-paced lifestyle makes it difficult for parents to spend much quality time with their students because of their demanding job schedules and need to support their families. Additionally, the youngster often has few siblings or, more likely, none at all, due to the typical small family size in China. Mobile games then provide a comforting emotional outlet for the lonely students in this situation. A team effort is required in

several running games, such as “Honor of Kings” and “Game for Peace,” where players support one another rather than fighting alone for victory. In these games, young children can discover the thrill of teamwork and feel wanted and emotionally gratified (Fan, 2014). Additionally, the inability of parents to provide adequate role models for how to deal with video gaming contributes to the addiction to mobile games among primary school students. According to social psychology, imitation happens when a person is motivated by the behavior of others and duplicates it consciously or unconsciously without being constrained by outside factors. Young children are indirectly and subtly affected by how their parents behave in daily life. When parents regularly spend a lot of time playing mobile games at home in front of their children, the latter become subconsciously influenced and start to replicate this habit. They would believe that playing mobile games is a socially acceptable activity at home. Parents’ advice is essentially useless if they recognize they need to restrict the amount of time their children spend playing video games. Children already have the defiant mindset of “you can play them while I cannot” ingrained in their minds, even if they are made to give up playing mobile apps. Later, when students approach puberty, this thinking will get stronger and harm parent-child interactions (Li, 2021).

Aside from family factors, students’ addiction to mobile games is also linked to poor school education. Under extreme academic pressure, video games have become a welcome distraction from the monotony of academics. Despite the recent emphasis on academic burden reduction in education reforms, most schools continue to view test scores as the only essential factor in the academic evaluation system. The type of middle school students who can go on to secondary school is determined by their test scores. Unable to find an alternate way to relieve the stress of exams, some of them seek to escape the worry by engaging in virtual reality activities. Furthermore, the day-to-day school routine is tedious enough for primary school students. When schools do not provide any exciting and exhilarating activities, students can quickly become engrossed in fun games.

Ineffective Social Regulation

One of the reasons efforts to limit student mobile gaming have failed is the poor system for preventing students from becoming addicted to video games. Numerous gaming companies have implemented a number of anti-addiction measures in response to the public’s strong concerns regarding this issue. For instance, Tencent, the company behind “Honor of Kings,” debuted the “Growth Protection Platform” in February 2017 so that parents could link their students’ gaming accounts to their smart phones and keep an eye on how much time they spend playing. One feature of this system that allows parents to limit their children’s gaming time is the “one click stopping play” button. Tencent upgraded the platform and started asking users to submit their real names in July after determining that this measure was insufficient in addressing youngsters’ addiction to mobile games (Chen, 2021). However, survey findings revealed that many primary school students could exploit “loopholes” in this security measure and use adult family members’ ID cards or identity information purchased online to pass the verification, despite the fact that game companies required real name verification for every user. News stories like “a 60-year-old geriatric starting a game at 3 a.m.” have garnered a lot of attention and made the public doubt the anti-addiction system’s efficacy. Some students admitted that they could easily get around the “Teenager Mode” restrictions by “flipping the wall,” buying an accelerator, or going into tourist mode” (Qiu, 2021). The

available data showed that the current system for preventing gaming addiction is ineffective and that the regulation implemented by the appropriate agencies is not stringent enough to adequately handle the problem.

Recommendations for Reducing Students' Dependence on Mobile Games

Students should Strengthen their Willpower to Reject Mobile Game Addiction

In primary school, students should first learn to approach challenges and difficulties with a positive attitude. No actual issues are helped by the sense of escapism offered by video games. Dependence on mobile games is mostly a waste of time and does nothing to help with their development. They must understand that time is valuable and should be used for worthwhile endeavors. Second, students should make an effort to pursue some constructive interests and hobbies in order to divert their attention from playing mobile games. Many students start playing video games out of boredom, but over time, they unintentionally become compulsive players. They will naturally stop playing mobile games once they realize there are a lot of other intriguing things they can do, such as play football, dance, and draw. Third, students should try to develop their social and emotional competencies through more contact with friends and parents. They might be able to break free from the grip of video games if real-world interaction replaced virtual interaction.

Parents Ought to Use their Phones Responsibly and Incorporate Video Games into their Children's Home Education as Role Models

First and foremost, parents need to exercise caution when using their smart phones around their children. Words are less powerful than deeds. By reducing their personal reliance on games and mobile devices, parents can make their counsel for children on video gaming more persuasive (D.C. Chen, 2019). They ought to read rather than browse the web or even play games on their smart phones, especially while they are watching over the schoolwork of young children while seated in the study. Second, when children want to play games for entertainment and relaxation, parents should strive to come to an understanding with them regarding the time limit, say 30 minutes. Parents can limit their children's gaming time in this way while also teaching them the importance of keeping their word. They might also think about rewarding youngsters with video games when they finish their chores, their homework, or other significant duties. It is not a good idea to forbid students from playing mobile games because this will just encourage their rebellious behavior. Third, parents might benefit from mobile games' educational features. "Education includes games, and games can help education," goes a well-known proverb. Playing meaningful games can help primary school students develop. Some video games, such as those designed to improve users' intelligence, are especially beneficial and instructive, and can be recommended to students based on their age characteristics (Chi & Li, 2020). Children can play carefully made puzzle games to improve their thinking skills, or they can use games to learn Chinese and Eng-

lish vocabulary. Fourth, parents can encourage students to participate in other worthwhile pursuits that will divert them from their desire to play video games. After-school activities for students should not primarily consist of extra tutoring; rather, they should focus on outdoor pursuits like skateboarding, basketball, and other sports, which not only give them the opportunity to get enough exercise but also help them develop as people. Parents can plan excursions throughout the winter and summer breaks to maximize their children's opportunity to interact with nature.

Schools should Teach Students about the Significance of Responsible Mobile Gaming Play

Various methods can be used by the school to improve students' understanding of mobile games. It can hire experts to offer seminars on the dangers of mobile gaming addiction, or it can broadcast the message through school radio, campus tabloids, and other outlets. Teachers can organize class debates in which students fully discuss the benefits and drawbacks of mobile gaming and gain a clear understanding of how mobile games work, the importance of limiting game time, and how to avoid overindulging in them (Yan, 2018); for those who are severely addicted to mobile games, the school should assist them in accessing counseling and professional therapy so that they can extricate themselves from the mobile gaming plight and resume normal studies. Simultaneously, the school must improve its life education for students in order to develop their practical abilities and their capacity to separate fact from fiction. Multidimensional evaluation should be used to assess students' performance in order to reduce academic stress. It should also try to enrich its campus culture and involve students in the development of extracurricular school events in order to guide them in developing healthy hobbies and making good use of their free time (Tang, 2020).

Social Regulation of the Mobile Game Industry should be Strengthened

To determine the appropriateness of digital games for different age groups, many European nations use the Pan European Game Information (PEGI) grading system. Operators who run games with no violent or unlawful content are the only ones to receive the certificate of qualification from PEGI. Similarly, North American nations have a specialist rating committee to determine the game's difficulty level. The game's developer is required to disclose comprehensive information about the game, including the game's nature, content, and age requirements for players. A governmental body for the regulation and oversight of internet gaming has been established in the UK. Additionally, there are formal guidelines for game rating in South Korea. China lacks a rating system for mobile games, in contrast to these developed nations. Relevant authorities can adopt strict approval and rating requirements for mobile games by studying overseas trends. Young students should not have access to violent video games.

The rapid growth of China's digital game sector needs more structured legislation and regulations. Without legal restrictions, gaming corporations will not regard the interests of minor players and will instead concentrate on attracting more players and increasing earnings. Legislation is the most efficient method of management. With the law's necessary requirements, relevant authorities can improve the supervision of the mobile game industry, force game developers to correct harmful game content, and es-

establish a safe and positive gaming environment for primary school students (Wang & Chen, 2019).

Game companies should improve their systems to keep people from getting addicted to games. Game companies can set up information databases using integrity investigations, improve ways to verify personal information, and use data analytics to check if the identity of the mobile game user matches the information of the account holder. This will help them find minors who use the information of adults to sign up for games. For instance, the need for facial recognition can pop up at any time during the game to see if the player's face is the same as the holder's account. For controlling game time, it has been suggested that game developers use the method of reward discrimination. This means that the game should be split into three parts: healthy, fatigued, and unhealthy, and each part should have a different level of rewards (Chang, 2019). When a minor gets too tired to play mobile games, their "points" will be taken away. When a young player gets too sick to play, their "proceeds" from the game will be taken away. This idea was put forward to stop players from wanting to play all the time.

Conclusion

In this age of mobile internet, smart phones are ubiquitous in our daily lives. Students in primary school, like all other groups, benefit greatly from the convenience provided by high-tech devices. However, their detrimental effects on youngsters should not be ignored. As a result of the increasing popularity of video games, mobile game addiction among students has become an increasingly serious problem that can inflict irreparable harm and lead to serious societal issues. There are numerous reasons why children become addicted to smart phone games. Participation from all parties is necessary for the intervention and prevention of this behavioral disease. Parents, schools, game firms, and the government should each make their own efforts to protect schoolchildren's healthy development.

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