



## Towards "Digital Sobriety": Online Gaming Addiction Among College Students and Mitigation Paths

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**SUMMARY:** *Online games have become a necessary part of college students' lives recently, and some students are starting to show signs of "addiction". Generally, the behaviour of college students with online game addiction can be divided into two categories: "temporal-spatial immersion" and "psychological dependence". Underlying mechanisms include addictive game design and the pull of "flow". In combination with a lack of self-regulation, as well as off-line peer pressure. Online Identity Formation. To address the problem of online gaming addiction among college students, a three-dimensional collaborative framework of "social co-governance - university intervention - individual self-governance" should be established to guide students towards a rational state of "digital sobriety".*

**KEYWORDS:** *college students; online gaming addiction; governance pathway s*

### 1 Introduction

As "digital natives", many college students have been using the Internet for various reasons in their daily lives and have developed a habit of online gaming. According to the "China Youth Digital Development Report", the proportion of young people (aged 18-24) who use game apps is 71%, and on average, they play these games for about an hour and a half a day [1, 2]. A study of 7,045 college students across China showed that the prevalence rate of Internet Gaming Disorder (IGD) was 6.7%, and a higher degree of IGD was positively correlated with depressive and anxiety symptoms. A study of about 33 countries and more than 400,000 people found that the proportion of college students with Internet Gaming Disorder (IGD) was between 4.9% and 14.3% [3, 4]. The prevalence of Internet Gaming Disorder (IGD) among college students is higher than in other groups; therefore, researchers believe that the transition period they are in constitutes a "regulatory blind spot", and the prefrontal cortex of college students has not fully matured. When gaming behaviour changes from occasional entertainment to a normal way of life, some college students become "addicted" to immersive gaming and are consequently affected by problems such as skipping classes, failing courses, and even dropping out of school. Studies have also shown that online games are detrimental to the study habits, self-assessment and risk-awareness of college students [5, 6].

Online gaming addiction is a behavioural state where a person loses control over their gaming behaviour due to excessive participation, prioritises gaming over other daily life activities, and finds it difficult to stop despite knowing the negative impacts. According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5, 2013), it is

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referred to as "Internet Gaming Disorder" and has the following features: loss of control over gaming behaviour, giving more importance to gaming than other interests, continuing to play despite adverse results, and experiencing problems in study or relationships with others as a result of gaming [7, 8]. College students were selected as the research subjects in this paper, and the manifestations, causes and management strategies of online gaming addiction among them were systematically explored to provide a theoretical basis for tackling gaming addiction in college students and guiding them to use online games healthily and reasonably. The path from exposure to online games and digital sobriety is shown in Figure 1.

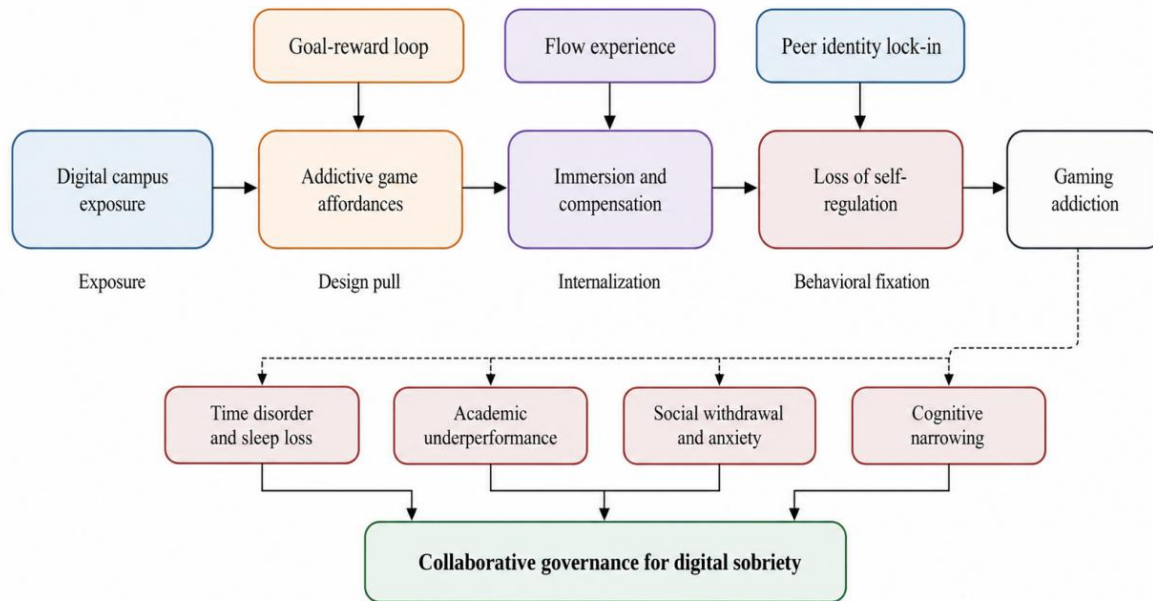


Figure 1: Pathway from online gaming exposure to digital sobriety

## 2 Straying onto the "Wrong Path": Manifestations of Online Gaming

When gaming evolves from a way of living to a focus of one's life, signs of addiction may gradually appear in everyday life. Online game addiction among college students generally takes the form of three dimensions: "spatio-temporal immersion" in behaviour, "emotional attachment" at the psychological level, and "narrowed thinking" in cognition [9-12]. The structure of the three-dimensional manifestation of online gaming addiction is shown in Figure 2.

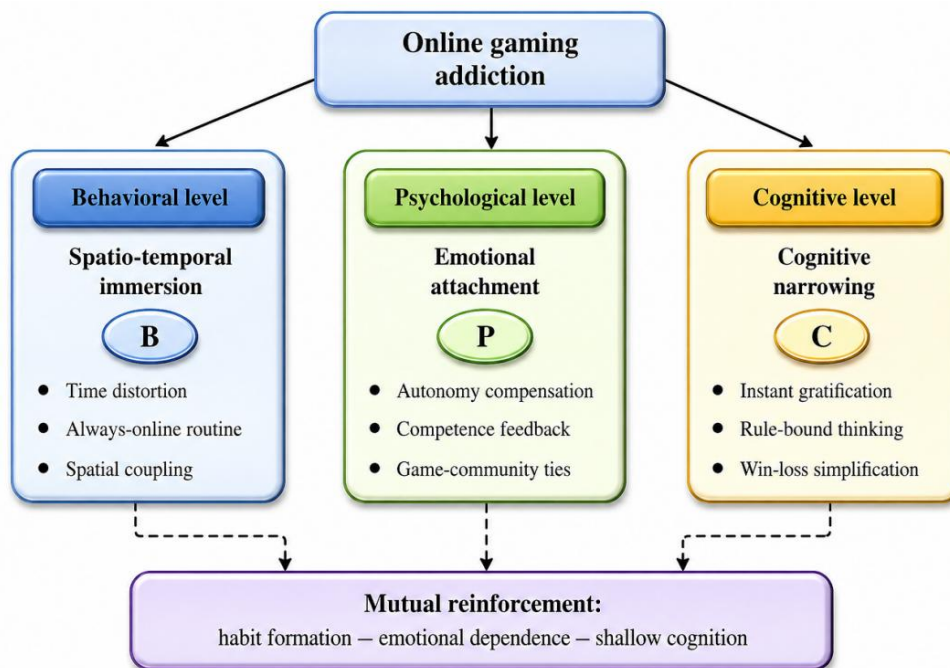


Figure 2: Three-dimensional Manifestation Structure of Online Gaming Addiction

(1) Spatio-Temporal Immersion: Loss of Control Over Behavioral Habits

Online games have changed how college students view time and space in the digital world, and these new behaviours are difficult to regulate.

**Disruption and Disorder in the Perception of Time.** With a good-designed mission system and real-time rewards, online games have created a highly immersive virtual world that is always busy; many college students find themselves in a psychological loop of "just one more round" or "I'll take a break after reaching a certain level," and thus spend a lot of time without realising it. Addicted individuals often have a sense of time that is affected; due to the immersive nature of gaming, they lose track of how time is passing and frequently spend long hours gaming, such as playing all night and staying up late to complete dungeons [13, 14].

**Dual Coupling of Spatial Immersion.** On the one hand, online games have entered all parts of college students' real-life spaces, such as dormitories, classrooms, cafeterias and libraries, and can now be played in these places with the help of smart devices and internet access. On the other hand, it Gaming media themselves build very attractive virtual spaces, and college students experience a sense of being there through audio-visual stimulation and interaction. With the expansion of virtual spaces in daily life, people have been finding it hard to separate themselves from these two worlds. For college students addicted to gaming, temporal and spatial immersion have taken the form of a habit; every free minute is filled with gaming, and the "always-online" state in online games is no longer occasional but has become an unconscious habit integrated into their daily lives [15-17].

(2) Psychological Attachment: Compensatory Fulfillment of Emotional

Social stereotypes often associate online games only with entertainment, but now they are also used to convey deep emotions; as an emotional medium, carefully designed interactive mechanisms in online games have become an important way for college students to experience emotions.

According to the three basic needs of psychological requirements for self-determination theory, autonomous will, competent performance and social relatedness; whether an individual can meet these demands determines their mental well-being and behaviour. When

real life fails to meet these needs, people look for compensation in virtual spaces. For some college students, academic failures, difficulties in relationships, and a sense of low self-esteem may result in a feeling of loss of control, helplessness, and exclusion in real life, which manifests as intense loneliness and negative emotions in their daily lives. The carefully designed goal systems, immediate-feedback achievement mechanisms, and communities of like-minded players in online games allow them to momentarily forget the problems of real life and fully engage in personalised compensatory gratification in the game; they can feel a sense of control and achievement that is difficult to obtain in reality. As this compensatory satisfaction grows, strong emotional attachments to game characters, storylines, or communities may develop [18-20]. Players look forward to updates, new character skins and other in-game events, and may spend a lot of time and money to gain a sense of emotional fulfillment. Players are deeply attached to their virtual characters in role-playing games and, together in social games, have formed close-knit teams. If there is too much emotional investment in this project, we might become too fond of virtual worlds.

### (3) Cognitive Narrowing: The Tendency Toward Superficial Thinking Pattern

McLuhan believed that "the medium is the message", and therefore, media not only carry information but also change our ways of thinking as well. Using the unique media characteristics of online games, gradually, they have begun to influence the cognitive processing of college students, changing their ways of thinking and information-processing habits, resulting in a state of "cognitive narrowing".

Cognitive Frameworks tend to be instant-gratification. The Design Logic of online games is to give instant feedback, show sound and pictures after performing an action, and display the results clearly. High-frequency, direct stimulation gradually makes college students used to the idea of immediate gratification. At the same time, learning and growth in real life are often processes of delayed gratification; just because it was taught in class does not mean one has learned it, and the effort exerted over several weeks will not immediately result in a high score. Excessive immersion in a game's instant-feedback loop may diminish one's ability to concentrate on difficult problems for an extended period. Over time, the students' thoughts may become superficial and they will no longer be able to think deeply and systematically.

Cognitive Horizons are generally narrow. Through rule systems and narrative frameworks, online games build a relatively closed cognitive environment for players. The problems and their corresponding countermeasures in this environment are generally fixed; the difficulties and benefits are closely linked, and the reason for this connection is reasonably clear. Although the above simplified cognitive models have reduced cognitive load, they have also limited the ability of people to handle complex problems in their daily lives. This "cognitive echo chamber" effect restricts the scope of information that can be acquired and may also promote cognitive biases during problem-solving; for instance, the binary logic of "win or lose" in games can be extended to real-life thinking, leading to oversimplification and one-sidedness in dealing with complex issues. Research has found that a low risk of Internet gaming disorder is favourable for cognitive development; however, at a certain level of risk, it may impair cognitive functions.

## **3 The Logic Behind Addiction: The Formation of On line Gaming**

### **3.1 Addiction Among College Students**

The development of online game addiction among college students is due to the structural

context of the period of social change, as well as technical design limitations of the game platform, a deficit in self-regulation skills among individuals, and pressure from peers. Next, we will examine the three origins of generation: technology, individuals and groups. Generative Mechanism of Online Gaming Addiction Among College Students is Shown in Figure 3.

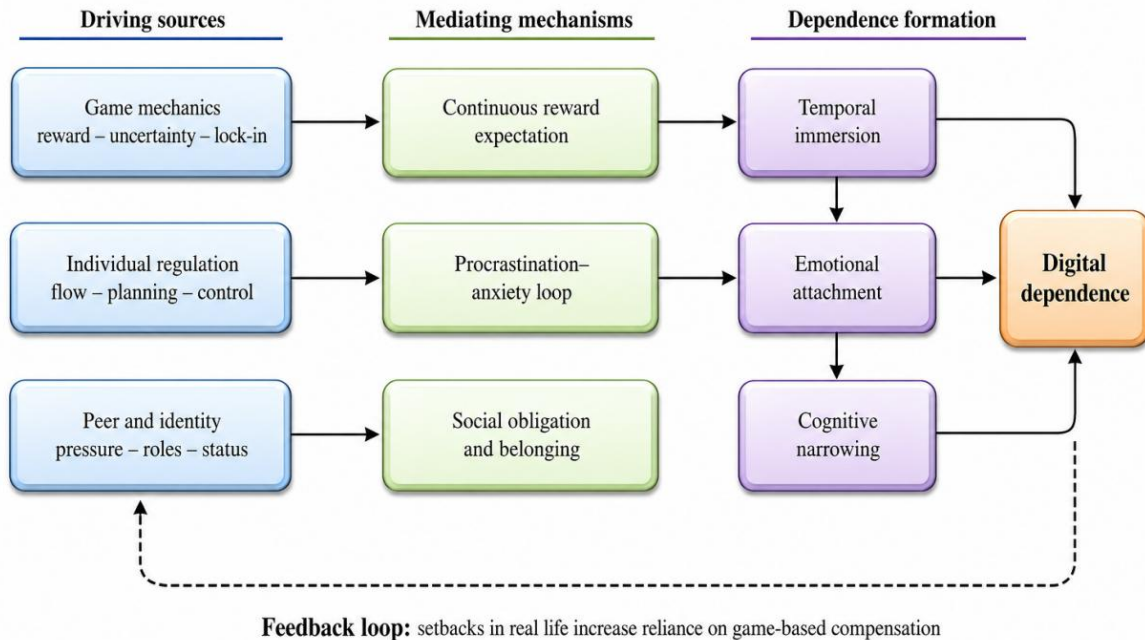


Figure 3: Generative Mechanism of Online Gaming Addiction Among College Students

#### (1) Addictive Design in Game Mechanics

As design ethicist Harris pointed out, "One might think that when using digital products, one is responsible for self-control, but one does not realize that on the other side of the screen are thousands of people whose job it is to break down one's self-control." Through sophisticated addictive design, online games gradually draw college students into a virtual world from which they are difficult to leave [21].

**The Goal-Reward Loop.** The main design logic of online games sets progressively difficult goals and provides immediate reward feedback; thus, a closed loop of "goal setting - behaviour engagement - reward acquisition - new goal setting" is created. This model precisely matches the "reward feedback mechanism" in the brain, wherein the release of dopamine leads to pleasure after obtaining a reward, motivating people to participate in the game again in hopes of experiencing that pleasure once more.

**Uncertainty-Driven Sustained Engagement.** Skinner performed operant conditioning experiments and found that variable-ratio reinforcement schedules (i.e., unpredictable rewards) result in a higher frequency of behaviour and stronger behaviour maintenance than fixed-ratio reinforcement schedules. He also mentioned that this mechanism is the basis for all gambling devices and systems: "Those who cannot stop playing or become pathological gamblers are typical results of such schedules."<sup>10</sup> Online games are a typical case of this; the probability of card draws, the chance of obtaining rare equipment, the composition of matchmaking teams, and the skill level of opponents are all full of uncertainty. Precisely because of this anticipation—"the next round will be better" or "the next ten pulls will finally drop the item"—many college students are willing to invest a lot of their time and money repeatedly in the hope of obtaining these virtual items [22].

The Stickiness of Social Mechanisms. Today's online games are no longer solitary single-player experiences but highly social multiplayer worlds. Connection models are guilds, teams, friend systems and mentor-apprentice relationships that link players in a large social network. When the game is no longer able to maintain social relationships, then leaving the game is also a form of social isolation. This social lock-in effect helps to keep the users engaged, and it is harder for college students to be out of touch with the "everyone is doing it" trend among their peers.

### (2) The Pull of "Flow" and the Imbalance of Self-Control

Though it has been good fun, the only other reason college students may be reluctant to play is the absence of self-control. Research has shown that self-control mediates the path from self-differentiation to online game addiction in an experiment.

College is a period when one needs to take responsibility for life without external support. Many students have been under the care of their families for a long time before going to university and have not developed basic life skills such as time management, goal-setting, and prioritization. Now that they have a lot of free time, they often do not know how to use and manage this time well. When students lack good time-management skills, they may be driven by a "flow" state of online games and lose track of time, making it difficult to allocate enough time for study, social activities and exercise. The state of "flow" is when one is fully absorbed in the game and loses awareness of time and self. This is due to the dynamic balance of skills and difficulties in the game environment: as the player's ability rises, so does the challenge of the game; it is not too simple to be dull and not too hard to be annoying, thus enabling the player to enter a state of "self-forgetful immersion". In this state, college students focus intensely on the game and lose track of time; worries and pressures in real life are temporarily ignored, and they feel a strong sense of control and joy. When the pursuit of the flow experience in the game takes precedence over other needs, the balance of self-regulation is lost; students may neglect their studies and sleep, or even social activities, to maintain this feeling of pleasure, entering a vicious cycle: "in-game flow → procrastination on real-world tasks → increased anxiety → greater dependence on in-game flow → addiction."

### (3) Offline Peer Pressure and Online Identity

Offline Peer Pressure. University campuses are relatively high-density living areas that are prone to the spread of behaviour. When most of the other students, particularly those living in the same residence hall, are playing games, those who do not join feel a lack of belonging and worry about being left out of conversations and social gatherings. Gradually, this wish to "belong" has attracted some students who were not initially fond of games. As gaming has become a way to connect with others, their behavior in games is no longer solely driven by personal interest but is also shaped by what their peers expect. "Gaming together" has lowered the threshold for participation in daily life, formed a new kind of player community, and promoted communication and interaction in various places and at all times.

Online Identity. Gradually, the status, honour and recognition obtained in the virtual communities of online games have been internalised as part of an individual's self-concept. For example, in MOBA (Multiplayer Online Battle Arena) games, "rank" is not only an indication of gaming ability but also a kind of social status that college students use to show off to their friends; some college students are the leaders of gaming guilds or teams. The leaders in these virtual communities feel a sense of responsibility and authority that they do not experience in real life; as a result, they integrate their virtual identities into their sense of self. When their academic performance and social relationships in the real world do not meet their expectations for identity, the virtual identities they create in games serve as their main source of self-esteem, and they are thus eager to invest more time and effort in building these virtual identities. Through personalised virtual identities, college students have strengthened

trust through frequent interactions, emotional involvement, mutual give-and-take and conflict resolution; they have also mobilised and transformed social capital by spreading information, building trust and sharing resources, forming close emotional connections with players they have never met in person, and ultimately creating "digital communities" that are independent of location. For some college students who experience social anxiety or a lack of belonging in life, gaming communities offer a low-threshold, high-feedback social environment. Therefore, they can be motivated by the sense of purpose of belonging and recognition gained from working in teams and participating in online classes.

## 4 Finding the Way Out: Governance Pathways for College Students'

### Online Gaming Addiction

The complexity of college students' online game addiction is too high for a single subject or single method of control; therefore, an all-encompassing system of governance involving all parties needs to be constructed. Based on good experiences in the governance of short-video addiction, and by combining the specific features of the college student population with media-specific characteristics of online games, this paper proposes a three-dimensional collaborative pathway of "social".

Co-governance - university intervention - individual self-governance are used to guide college students from "addiction" towards "sobriety" and enable them to achieve healthy development through the rational use of online games. The risk-intervention priority matrix for digital sobriety is shown in Figure 4.

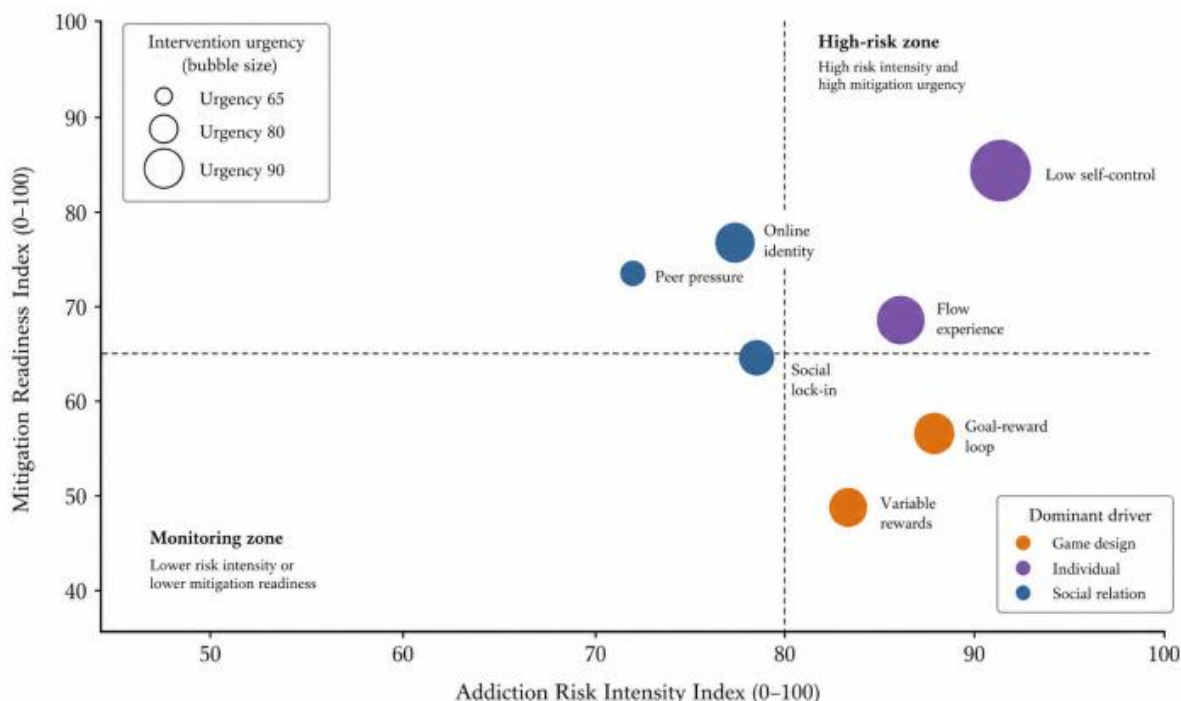


Figure 4: Risk-intervention priority matrix for digital sobriety

#### (1) Social Co-governance: Optimizing the Online Cultural Ecosystem

To tackle the problem of online game addiction among college students, build a system of social collaborative governance and optimise the online cultural ecosystem to address this issue.

As a core component of social governance, the government should use its strengths in top-level design to strengthen the regulatory system for online games. At the same time, we need to strengthen the rules for issuing game ratings and clearly specify the age suitability and content standards of different kinds of games to reduce the risk of addiction caused by addictive design features. At the same time, strengthen the regulations on social responsibility for game companies and strictly implement requirements such as anti-addiction systems, real-name authentication, and time-of-day and duration restrictions. A "university student academic warning - gaming restriction" linkage mechanism can also be considered for the university student population. When a student is given an academic warning, their gaming account will be suspended automatically, so there is a relatively weak correlation between their academic results and game privileges.

As the directly responsible parties, the game companies must incorporate social responsibility into all links of product design and operation. First, the company will modify the game's rules to reduce its addictive features and add content that encourages cognitive development, cooperation and other skills. Second, strengthen the technical foundation of anti-addiction systems by guiding college students to play games rationally through automatic rest prompts, daily time limits and health-related gaming alerts. In addition, explore the development of "game literacy education" modules to integrate media literacy into games and help players learn the rules of games and self-regulate their own gaming behavior.

Social organisations are to be selected as the main subjects of social governance, and their strengths in resource coordination and practical implementation should be fully utilized. Different foundations for youth development, social work agencies, psychological counselling organisations and others can design and carry out programmes to improve digital literacy for college students. Workshops, summer camps and peer education can all be used to help students gain a broader view of online games. At the same time, social organisations can provide mental health support services for students with addiction problems and, through professional psychological counselling and behaviour modification, help them live healthy lives online.

## (2) University Intervention: Strengthening the Guidance of Mainstream Values

In order to solve the problem of gaming addiction, the school will put forward some recommendations and establish a normal management system. Although games are now a part of the younger generation's life, they should still lead the students in using media ethically.

Integrate gaming addiction into the student affairs system and build a three-tier response mechanism of "prevention - identification - intervention". At the prevention level, enhance students' digital literacy through freshman orientation, themed class meetings, and specialised lectures to help them recognise the harm of gaming addiction and spot early warning signs. At the level of identification, counselors need to pay attention to students' studies and life at home, and when students show changes in their study results, sleep patterns, or social life, they will observe that the changes are related to gaming. At the intervention level, for students already showing signs of addiction, individualised support plans will be set up. To help the addicts recover, many other ways can be organised, such as classes, counselling and support from friends, etc.

Optimise the campus's cultural offerings to provide an alternative to the virtual space by organising more diverse real-life activities. College students are often too bored with the dullness of life to study. Universities should actively foster an all-around, open and attractive campus cultural ecosystem, and provide many platforms for students to showcase themselves, achieve success and form friendships through club activities, sports competitions, art performances, innovation and entrepreneurship projects, etc. When life is sufficiently

fulfilling, one is no longer interested in playing games.

Integrate media literacy into the general education course. Universities can organise general education courses on "Online Gaming Literacy" and "Digital Media Literacy" to systematically teach the history of online games, their media attributes, social effects and the psychological mechanisms of addiction. Through these courses, students can learn about the design logic of gaming addiction, such as the goal-reward loop and uncertainty-driven mechanisms, and social lock-in, and thus build immunity against commercial design tactics.

### (3) Individual Autonomy: Enhancing Self-Management Skills

The Foundation of the governance system for online game addiction is individual freedom. As active subjects, college students need to study the nature of game media and strengthen self-management skills to change from being "controlled by games" to "controlling games".

Cultivate Time-Management and Goal-Setting Abilities. College students should be aware that "free time" in their university years is a double-edged sword, and they need to plan their lives proactively rather than passively letting time slip away. Set goals and break down long-term goals into semesters, months, weeks, days, and so on, to provide a clear goal-setting structure for time management; college students need to learn to resist the temptation of gaming and take the initiative to manage their own time. Train students in the ability to manage their time and setting priorities so that both their studies and other extracurriculars can be done. When life is directed by clear goals and plans, games can be enjoyed as entertainment again rather than taking over one's life as the primary activity.

Introduce a digital-detox method. A digital detox is the conscious decision to reduce or stop using some digital media services for a certain time to reduce over-dependence on technology. College students can set daily or weekly limits on gaming time and strictly follow them, and also schedule "screen-free time". By taking digital detoxes periodically, they can gradually reduce the amount of time spent on games and re-experience the rich life outside the digital world. Research shows that the motivation for digital detox is internal; users may form new values and life goals as a result of the joy and fulfillment they experience during the detox period [15].

Strengthen the Critical Consciousness of Game Mechanisms. College students should be able to learn the basic ideas of addictive game design and have an awareness of the commercial strategies used to attract people's attention. When they learn that the idea of "the next round will be better" is the result of algorithm design and not actually a game experience, and when they know that "gacha mechanics" provide random rewards based on low-probability events rather than reflecting their own luck, they can somewhat resist the psychological manipulation in games.

Rebuild a sense of purpose in life. College students should take part in all kinds of activities outside of class, such as joining clubs, participating in volunteer work, studying hard, meeting new friends, etc. Through real interactions with others and creating values, one can feel a sense of purpose and value that lasts longer than in the virtual world. When people have found a place in life, they are no longer so interested in games.

## 5 Conclusion

With the development of digital technology in recent years, most people are very familiar with mobile Internet and smart devices, and thus online games have become a popular leisure choice for college students. As college students are more likely to be addicted to online games, many parties need to cooperate on the problem of online game addiction. Only within the conceptual framework of "collaborative governance" will tangible results be achieved. At the level of society, governments, enterprises and social organizations need to cooperate to build a

good online cultural ecosystem; at the university level, game addiction should be added to student affairs, and mainstream values can be used to guide students' media habits; at the individual level, college students should be self-managed and actively address the symptoms of game addiction by practicing "digital detox".

Not all cases of gaming addiction require the banning or disliking of games; gaming is an all-around good way to exercise both mind and body, and a moderate amount can also help to relax after long hours of work or study. The problem is that of "moderation" – how to enjoy the fun of gaming rationally and what to expect from the virtual world and life outside of it. The main goal of college life for young people is to lay a solid foundation for life; games are only to be enjoyed incidentally during that time. To help college students become more aware of this, to enjoy the fun of games with rational self-discipline, and to understand the values of life in real life, the whole society should take the initiative.

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## References

- [1] He, R., Xiang, B., Lin, M., et al. (2026). An investigation into internet gaming disorder and psychological correlates among medical undergraduates in vocational colleges in China: a cross-sectional appraisal. *BMC Psychiatry*, 26, 205. doi: 10.1186/s12888-026-07822-7.
- [2] Chen, J., Zhang, Z., Fu, S., et al. (2026). Comorbidity of internet gaming disorder and anxiety in first-year Chinese university students: the mediating role of behavioral inhibition and activation systems. *BMC Psychiatry*, 26, 64. doi: 10.1186/s12888-025-07663-w.
- [3] Li, X., Gao, Y., Li, H., et al. (2026). The effectiveness of an online acceptance and commitment therapy self-help course in reducing excessive gaming behavior through inhibitory control: A pilot randomized controlled trial. *Journal of Behavioral Addictions*, 15(1), 342. doi: 10.1556/2006.2025.00199.
- [4] Fraiwan, M., & Almomani, F. (2025). Internet Gaming Disorder: Prevalence and associated factors among university students. *Acta Psychologica*, 260, 105690. doi: 10.1016/j.actpsy.2025.105690.

- [5] Wang, L.-J., Mu, L.-L., Li, X.-Y., et al. (2025). Mediating role of depression and gender in the relationship between daily video games exposure and internet gaming disorder among college students. *BMC Psychology*, 13, 965. doi: 10.1186/s40359-025-03328-1.
- [6] Yu, Y., Su, X., Yang, Y., et al. (2025). Emotional dysregulation-mediated associations between guilt proneness, shame proneness, and Internet Gaming Disorder among Chinese university students: Cross-sectional survey. *Journal of Medical Internet Research*, 27, e74052. doi: 10.2196/74052.
- [7] Chen, X.-M., Ning, Y.-F., Flett, G. L., et al. (2025). The relationship between specific problematic internet use and hope: academic exhaustion as mediator and mattering as moderator among Chinese university students. *BMC Psychology*, 13, 194. doi: 10.1186/s40359-025-02500-x.
- [8] Sevintuna, A. F., Bornovalova, M. A., & Salomon, K. (2025). Correlates of borderline personality disorder traits and Internet Gaming Disorder in college students. *Journal of Personality*, 93(6), 1226–1234. doi: 10.1111/jopy.13003.
- [9] Alzahrani, A. K. D., & Griffiths, M. D. (2025). Problematic gaming and students' academic performance: A systematic review. *International Journal of Mental Health and Addiction*, 23(5), 4062–4095. doi: 10.1007/s11469-024-01338-5.
- [10] Martínez-Murciano, M. C., & Pérez-Jorge, D. (2025). Effects of excessive video game and social networking use on mental well-being and academic performance of university students: A systematic analysis. *Social Sciences & Humanities Open*, 12, 102200. doi: 10.1016/j.ssaho.2025.102200.
- [11] Wei, X., Zhou, H., Zheng, Q., et al. (2025). Longitudinal interactions between problematic internet gaming and symptoms of depression among university students: Differentiating anhedonia and depressed mood. *Addictive Behaviors*, 160, 108184. doi: 10.1016/j.addbeh.2024.108184.
- [12] Bailey, K., Propp, A., & Alonso, M. (2024). Prevalence of Internet Gaming Disorder, depression, and anxiety symptoms before and after the pandemic. *Healthcare*, 12(23), 2471. doi: 10.3390/healthcare12232471.
- [13] Zhao, Z., Zhao, M., Wang, R., et al. (2024). The effects of negative life events on college students' problematic online gaming use: A chain-mediated model of boredom proneness regulation. *Frontiers in Psychology*, 15, 1426559. doi: 10.3389/fpsyg.2024.1426559.
- [14] H, M. I., Roy Chowdhury, S., Reddy, I. R., et al. (2024). A cross-sectional study on Internet Gaming Disorder and its association with personality traits in engineering students. *Indian Journal of Psychological Medicine*, 46(6), 579–584. doi: 10.1177/02537176241232107.
- [15] Qiao, X., Chen, X., Zhu, Y., et al. (2024). Developmental trajectories and predictors of Internet Gaming Disorder across the university years: A person-centered five-wave cohort study. *Addictive Behaviors*, 149, 107898. doi: 10.1016/j.addbeh.2023.107898.
- [16] Abdallat, M., Al-Sanouri, M., Al-Salaymeh, S., et al. (2024). Internet Gaming Disorder

- and sleep quality among Jordanian university students: A cross-sectional study. *Clinical Practice and Epidemiology in Mental Health*, 20, e17450179310269. doi: 10.2174/0117450179310269240820042452.
- [17] Xie, Y., & Tang, L. (2024). The symptom network of internet gaming addiction, depression, and anxiety among children and adolescents. *Scientific Reports*, 14, 29732. doi: 10.1038/s41598-024-81094-7.
- [18] Sun, R.-Q., Sun, G.-F., & Ye, J.-H. (2023). The effects of online game addiction on reduced academic achievement motivation among Chinese college students: The mediating role of learning engagement. *Frontiers in Psychology*, 14, 1185353. doi: 10.3389/fpsyg.2023.1185353.
- [19] Zhu, L., Zhu, Y., Li, S., et al. (2023). Association of internet gaming disorder with impulsivity: role of risk preferences. *BMC Psychiatry*, 23, 754. doi: 10.1186/s12888-023-05265-y.
- [20] Balhara, Y. P. S., Sarkar, S., Laspal, N., et al. (2023). A randomized controlled trial to assess effectiveness of GamE—an e-Health intervention to self-manage gaming with an aim to prevent gaming disorder. *Asian Journal of Psychiatry*, 80, 103389. doi: 10.1016/j.ajp.2022.103389.
- [21] Benjet, C., Mortier, P., Kiekens, G., et al. (2023). A longitudinal study on the impact of Internet gaming disorder symptoms on self-perceived health, academic performance, and social life of first-year college students. *The American Journal on Addictions*, 32(4), 343–351. doi: 10.1111/ajad.13386.
- [22] Xia, L.-L., Li, J.-D., Duan, F., et al. (2023). Effects of online game and short video behavior on academic delay of gratification: Mediating effects of anxiety, depression and retrospective memory. *Psychology Research and Behavior Management*, 16, 4353–4365. doi: 10.2147/PRBM.S432196.