On the Governance of Digital Addiction and the Educational Government

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Abstract. The widespread construction of digital life not only brings huge benefits to humanity, but also produces a byproduct - digital addiction, which poses a serious threat to people. The government's governance of digital addiction faces challenges on both the supply and consumption sides of digital products and services, because the benefits brought by digital products and consumption far outweigh the harm caused by their digital addiction. Digital addiction cannot be eradicated on the supply side and cannot be enforced on the consumer side. In this regard, on the basis of the night watchmen role in social life, the government should strengthen its educator role in social life, and form an educational government. Based on human free will and cognitive-behavioral mechanisms, at the consumer side, by strengthening people's rational understanding of digital addiction, it can awaken people's self-control behavior towards digital addiction. The educational government can adopt the process and path of "Teaching, Knowing, Persuading, and Acting "to achieve these objectives above. The educational government is a natural result of strengthening the government's responsibility for managing digital addiction and finding feasible intervention points. The educational government has important significance in adapting to the characteristics of the deep digital era.

Keywords: Digital addiction; Governance dilemma; Rational cognition; Self-control behavior; The educational government; Path

1 Introduction

The core theme of this article is to demonstrate the importance of the educational government in addressing the social problem of digital addiction and design its governance process and path. When human enter the era of deep digitization, whether it is teenagers, middle-aged people, or elderly people, they have all been affected to varying degrees by the harm of digital addiction. Digital addiction has increasingly become a social public issue that requires government’s moderate intervention. By reviewing literature and observing social reality, we can find that in the prevention and control of digital addiction, both research and government focus are mainly on legislation and regulation of digital products and services. However, due to factors such as international competition in industries, technological development, and the freedom of consumers as citizens, government legislation and regulation have limitations on both the supply and consumption sides of digital products and services. Therefore, this article proposes that it is very beneficial for the government to prevent and address the social public

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problem of digital addiction in the digital age by developing its own role as an educator and intervening in people's cognitive behavioral mechanisms. The governance process and path of the government can be summarized as four stages: Teaching, knowing, persuading, and acting. The government's effective governance to rescue people from the risk of digital addiction is a true defense of human freedom.

2 Literature review and question raising

2.1 Literature review

With the rapid development of technologies such as the internet of things, big data, cloud computing, and artificial intelligence, humanity is accelerating towards a deep digital society. Convenience, efficiency, automation, intelligence, and other benefits have led countries around the world to embrace the iterative leap of this new information technology. Large technology companies are leveraging their massive financial and human resources to integrate resources globally and promote digitalization. Due to deep digitization, the social ecology that humans rely on may be undergoing a transformation that has not been fully unprecedented before - from the integration of technology into humanity, to the potential deepening of human integration into technology. Various virtual reality digital living, work, or learning spaces have been widely constructed. Technology optimists believe that technology itself is the answer. Pessimists believe that technology is difficult to achieve a fundamental path. In today's era of deep digitization, there are even pessimists or technology conservatives who express the risk of humans being controlled by intelligent robots.

The reality is that while we have benefited greatly from technological progress, humanity is falling into a accompanying dilemma - digital addiction. As a byproduct of technological progress in the era of deep digitization, the harm caused by digital addiction has attracted social attention and government attention. In recent years, digital addiction has become an emerging research field. The academic community has conducted research on the definition and harm of digital addiction, and explored the government's governance of digital addiction. These research findings provide important epistemological foundations for us to understand the problem of digital addiction and seek further optimization of governance.

From the perspective of observing human behavior, digital addiction is a high dependence on Smartphone, PADs, and other virtual reality devices that people cannot escape. In terms of consumer content, it means that people are deeply addicted to short videos, electronic games, online information, online shopping, online live streaming, and cannot extricate themselves. How to measure it? A study by Nan Fanyu, a scholar from the Department of Psychiatry at Jianguo University School of Medicine in South Korea, pointed out that individuals who accumulate 4 hours a day and 30 hours a week in a digital state are in the symptom of digital addiction. Why do so many sectors attach importance to this issue? The reason is that any addiction can be harmful. From the experience of ordinary people, it can be known that digital addiction, such as the "mobile phone head down group," can cause varying degrees of damage to the eyes, neck, shoulders, and back; in severe cases, there may also be lesions in the joint areas of the fingers. Those with slightly more rational cognitive abilities know that digital addiction
often leads to fatigue, anxiety, and even sleep difficulties; More severe cases may lead to depression. Scholars such as Darnai from the School of Neurology at the University of Pecs in Hungary even suggest that digital addiction may lead to impaired brain function.[4] These physiological and mental damages can affect people's learning, work efficiency, and quality of life to varying degrees, damaging their social value.

Therefore, in the era of deep digitization, the government needs to attach great importance to the governance of digital addiction. The academic community's main view on governance approaches is that the government legislates to regulate the design of addiction incentives for suppliers in digital products and services, strictly regulates the market, [5] and advocates for the establishment of anti-addiction mechanisms in digital products and services. [6] Some scholars have also mentioned that the government should mobilize the industry associations and social organization to help people overcome digital addiction. [7]

2.2 Question raising

The existing research results on digital addiction provide an important foundation for us to understand and governing this problem. However, existing research lacks sufficient understanding of the special characteristics of digital addiction compared to drug addiction, gambling addiction, etc. It fails to analyze that digital addiction is a byproduct of the deep digital ecosystem that brings relatively significant and more benefits to humanity, and that personal digital addiction does not have direct negative externalities and belongs to the category of personal freedom. Existing research has not fully recognized the dual challenges that these attributes bring to the governance of digital addiction on both the consumer and supply sides. Based on the fact that humans are autonomous actors with free will and enjoy full personal freedom rights in modern society according to law, the problem of digital addiction fundamentally depends on their own cognitive-behavioral mechanisms. This article proposes that in the era of deep digitization, the government should assume its function of educating the people and build itself into an educational government. The government should fully play its educational function, and on the basis of effectively enhancing people's rational understanding of digital addiction, stimulate the occurrence of addiction self-control behavior. This research topic has certain epistemological significance and practical reference value for the role of government in the deep digital era, digital addiction governance, and so on.

3 The government's dilemma in the governance of digital addiction

3.1 Governance practice and its effectiveness

As the harm of social problems gradually becomes apparent and spreads, it enters the agenda of governance. Many countries or regions around the world have taken measures to address the prominent problem of digital addiction.

Since 2019, the US legislative body has been continuously exploring legislation to address the problem of digital platform companies using algorithms to distort human digital consumption behavior which leads to digital addiction. The European Parliament officially passed the Artificial Intelligence Act in 2023, regulating the potential physiological or psychological
harm that artificial intelligence technology may cause to humans. Of course, these efforts have also sparked profound debates. Because this regulation involves the relationship between individuals and governments, the relationship between markets and governments, the view of technological progress, and the political and cultural traditions of different countries and regions. In the era of deep digitization, it is normal for government regulation of digital products and services to cause controversy, but this regulation is inevitable and aimed at people's happiness.

Since 2019, the Chinese government has intensively introduced a series of laws, regulations, and rules to prevent people from becoming addicted to digital consumption, such as the E-commerce Law, the Personal Information Protection Law, the Law on the Protection of Minors, the Notice of the State Administration of Press and Publication on Further Strictly Managing and Effectively Preventing Minors from Addicting to Online Games, and the Guiding Opinions on Strengthening the Comprehensive Governance of Internet Information Service Algorithms Regulations on the Management of Internet Information Service Algorithm Recommendations, etc. These measures provide an important legal foundation for the governance of the problem of digital addiction. But the problem of digital addiction has not been effectively curbed. In terms of daily observation, more and more elderly people have become members of the "mobile phone head down group", myopia is becoming more common in children, and office workers brush their phones throughout the entire subway or bus journey. In terms of survey research, taking only elderly people as an example, according to the special survey data of the Population and Development Research Center of Renmin University of China in 2021, 43.5% of middle-aged and elderly netizens use short video apps almost every day. \[8\] Scholars have pointed out that "more and more elderly people are falling into the quagmire of digital addiction while crossing the digital divide". \[9\] The elderly population is still like this, let alone other groups of digital natives. Therefore, digital addiction has become a major issue in the deep digital era that requires further governance by the government.

3.2 Particularity of digital addiction and its challenges to governance

Digital addiction has its particularity among various social addiction phenomena. Drugs can lead to addiction, causing harm without any benefit. Gambling addiction often leads to life disasters also without any benefit. Smoking addiction is not very destructive, but it is also not beneficial to humans. However, digital addiction is a byproduct of social progress that benefits people. Any addiction should be corrected. The government's governance of completely harmful addiction is simple and clear, and there is no dispute about a ban. Effective law enforcement ensures that society is free from completely harmful addiction. But because of the particularity, the digital addiction brings new dilemma to the governance.

Digital addiction is a personal problem in the era of deep digitization, which fully demonstrates the individual vulnerability brought about by technological progress in enhancing individual value. And as more and more people face the harm of digital addiction, this problem is gradually becoming a public issue. Government cannot be absent here. But for other addictions such as drugs and gambling, the government can legislate that both supply and consumption are illegal, and enforce prohibitions. Smoking addiction can also be banned in public places, and minors can be banned from buying. But for the digital addiction, although the government can exert governance efforts on both the supply and consumption sides of digital products and services, there are limitations.
The limitations on the supply side are obvious. Firstly, digitization as a whole needs to be advocated and promoted, and there must be a balance between regulating digital product and service providers and encouraging their technological innovation. Secondly, although the current governance measures of digital addiction focus on regulating the incentive mechanisms of enterprise algorithms, the addiction is not entirely induced by algorithms. The virtual world provided by digital products and services is inherently attractive to people in the real world. In fact, in the era of the first and second generation of the internet, many people can wander aimlessly through web pages for a long time when they are idle, let alone when they face the digital products with vivid consumer experiences such as short videos. Even without using algorithms to capture preferences, the existence of digital virtual world inherently constitutes attraction, and attraction can become addictive.

The limitations of the consumer side are also clear and understandable. One is that people using digital devices such as mobile phones and PADs to watch online live broadcasts, browse short videos, entertain online games, engage in digital socializing and other consumer behaviors, belongs to personal behavior and fall within the scope of personal rights and freedoms in the private domain. The government has no right to prohibit behavior based on the problem of personal digital addiction. The second is the deep digital social ecology, in which people from the young to the old need integrate into the digital technology environment for learning, working and living, and gradually getting used to it, and this condition create an objective foundation for stepping into digital addiction. For example, while resolving the digital divide among the elderly, it may also bring about a group of old people falling into digital addiction; While digital products and services going to rural areas, it may also increase the likelihood of addiction among rural children. In the digitization of primary and secondary education, the completion of a large number of after-school tutoring assignments is placed on the internet, which exposes underage students to the possible risks of digital addiction.

4 Strengthening the governance of digital addiction requires the educational government

Government has neither eradicated the problem of digital addiction on the supply side nor banned it on the consumption side. Although digital addiction may seem like a personal issue, it is also related to the overall talent lifeline of the country, thus further governance is necessary. Here, it may trigger an important change in the role of the government in the era of deep digitization - to deeply intervene as an educator in individual decision-making without negative externalities in the private domain, becoming an educational government in order to break through the government dilemma in the governance of digital addiction.

4.1 The role of the government as a night watchman in social life

The role of the government has evolved significantly since modern times. From the perspective of the relationship with the market, Adam Smith, the father of modern economics, advocated in his book "The Wealth of Nations" in 1776 that the market should be spontaneously regulated by an invisible hand. The government only needs to be a night watchman for the market, and small government as a night watchman has become a theoretical
and practical model in the early stages of human economic modernization. In 1936, Keynes, the founder of modern macroeconomics, proposed in his book "The General Theory of Employment, Interest, and Money" that the government could directly intervene in the economy and enter the economic operation as a visible hand. From this, the large government model gradually emerged. Since then, many countries have maintained a dynamic shift in government market relations like a pendulum. Of course, the changes in the relationship between the government and the market are influenced not only by the subjective factors of the rulers, but also by the needs of the times. The reform of the government model is practice oriented and problem oriented. Moreover, the changes in government models are deeply influenced by technological changes in modern society.

From the perspective of social life outside of economic life, the government mostly maintains the role of a night watchman. The government protects the bottom line of order woven by the rule of law, suppresses the illegal behavior of a few people, and protects the freedom and comfortable lifestyle of the majority within the legal realm. The most important legal principle discussed by scholars to ensure that the people are the masters of their own life is that “without prohibition, one can act”.\[11\] It is the best portrayal of the role of government as a night watchmen in social life. Although the government also intervenes in social life through certain forms, such as providing inclusive public goods, providing more assistance to vulnerable groups. But those are far from the visible hand role in the economic field. The autonomy of communities and various volunteer organizations has become an important form of self-operation in social public life.\[12\] They may receive funding from the government and form a common subject network with grassroots governments to coordinate and promote the public part of social life. For private domain behaviors that do not interfere with others or social order, individuals are usually free to act according to their wishes, and government is generally rarely involved, because there are both restrictions on the boundary between the state and society and the protection of individual freedom rights by legal freedom rights, as well as considerations of government intervention costs and necessity. But we must also recognize that just as the relationship between the government and the market is constantly changing, the relationship between the government and society, as well as the relationship between the government and individual life, will also undergo pattern changes due to technological progress and social development.

4.2 Governance of digital addiction in the era of deep digitization requires the educational government

Faced with the harm of digital addiction, the government, as the night watchman of social life, faces limitations on both the supply side and the consumer side in the governance process. Thus the government need more appropriate approach to solve the problem of digital addiction. In this regard, the government should strengthen the role of social life educator so as to intervene in the private domain behavior, and form an educational government. The times call for the educational government.

4.2.1 The mechanism of establishing the role of the educational government

The development of the role of the government as an educator and shaper of individual behavior, although an important transformation since modern times, is not uncommon in history. In ancient China, both kings and officials had the responsibility to educate the people,
and this relation was analogized as parents nurturing their children. In *The Analects of Confucius*, it is said: “Guide the people with morality and educate them with etiquette.” In *The Book of Filial Piety*, it is said: "Teaching can transform the people.” In *The Confucius Homely Talks*, it is said: "The monarchs is the pacesetter of the people; the ruler is the model of the people.” From these, it can be seen that in ancient Chinese the government had the responsibility of educating the people. In fact, in the thousands of years of Chinese history, the government has the responsibility of educating the people on what should be done and what is not feasible. The reason why the ancient Chinese government had the responsibility of educating the people was that knowledge was mainly held in the hands of sages or managers at all levels of the country, and the common people were left in a state of confusion due to the lack of widespread education.

In the era of deep digitization, the government's education on people's digital consumption behavior is different from the general education on avoiding illegal activities. The latter is actually an extension and progression of the government as a night watchman in social life; the former is a soft but clear intervention in personal behavior without negative externalities. In fact, the former constitutes an important development of the government's role in the era of deep digitization. The government is no longer just a night watchman in social life, now it teaches people how to live a healthy digital life and how to spend their free time. This is an important shift in emphasizing the function separation of government, market, and society since modern times. The fundamental reason for the transformation is that in the deep digital social ecosystem, individuals become fragile in the face of powerful artificial intelligence and other advanced technologies. And it's not just a few people who face such problem, doing this, in fact, everyone in the world is increasingly integrated into the digital social ecosystem and facing the same problem and risk.

4.2.2 The historical recurrence and new significance of the educational government

The educational government, in fact, not only existed in ancient China, but also existed in various countries where knowledge were mainly held in the hands of nobles and state administrators in ancient times. Therefore, ancient governments of various countries, like ancient Chinese governments, had the role in educating the people.

Therefore, as an approach to realize the good governance of digital addiction, in a sense, the educator role of government is a recurrence of history. Of course, in terms of the times, there is a difference between today's 21st century and ancient societies. Today, in the era of deep digitization, the level of education of the people can be said to be universal, and government officials are not superior to the general public in this regard. The significance of the historical return of the educator role of government lies in people's insufficient understanding of the benefits and harms of digital behavior and their difficulty in self-control of digital behavior in the digital age. The digital ecosystem is so vast and complex that only the government institutions are able to grasp rich information, professional knowledge, and overall texture of the development of it. This is the result of the joint efforts of numerous experts and institutions. This allows the government to examine the pros and cons of individual digital behavior in society, guide people to grasp sufficient understanding of digital life and enhance their ability of self-control. In today's era of deep digitization, the historical return of the educator role of government is based on its knowledge and information advantages. This return of role is full of new significance for the times.
5 The digital addiction governance process and path of educating government

Today humanity has gone into a deep digital times. The technical progress has brought about unprecedented liberation in terms of physical and mental abilities, and has brought various possibilities for improving social welfare. At the same time, the spreading trend of the accompanying digital addiction and its damage to people's quality of happy life should not be underestimated. The educational government will play an important role in optimizing the governance of digital addiction. For optimizing the governance of digital addiction, from the consumer side, starting from changing human behavior, the educational government can adopt the process and path of "Teaching, Knowing, Persuading, and Acting" to play its educator role. As shown in Figure 1.

![Fig. 1. The process and path of the digital addiction governance.](image)

Human beings are autonomous subjects with free will and enjoy full personal freedom rights in modern society according to law. Therefore, the key to overcoming their digital addiction lies in their cognitive-behavioral mechanisms. The governance of digital addiction by the educational government ultimately involves a process and path of making people rationally recognize digital addiction and consciously adjust their own behavior. It is the process and path from solving the "difficult to know" of rational cognitive about digital addiction to solving the "difficult to act" of self-control behavior about digital addiction, and it is a problem of the relationship between knowledge and action. The focus of the governance process and path of "teaching, knowing, persuading, and acting" of the educational government is that relationship.

5.1 The process and path from teaching to knowing

As far as digital addiction is concerned, it brings pleasure caused by dopamine secretion in the brain. People instinctively reinforce addictive behavior based on pleasure cognition. The pleasure cognition is easy to understand and easy to lead to digital addiction. Breaking the pleasure cognition and instinctive addiction behavior requires individuals to acquire a higher level of knowledge, namely a rational cognition of the mechanisms, manifestations, and serious harm of digital addiction. This rational cognition is a prerequisite for triggering self-control behavior to solve digital addiction. But general public needs assistance in transitioning from general instinctive knowledge to rational cognition. The government's systematic education is just important here. The process and path are shown in Figure 2.

![Fig. 2. The process and path from teaching to knowing.](image)
Government education regulatory agencies should make digital addiction education an integral part of digital literacy education and organize experts and scholars to develop educational resources that are suitable for different groups. In education at all levels of primary, secondary, and universities, as well as in adult on-the-job training, and even in the elderly universities, it is necessary to implement digital addiction education to enhance people's rational cognition of digital addiction, and help individuals to cultivate awareness of moderate and healthy digital consumption. Thus individuals may achieve the abilities of self-diagnosis of addiction, and can abstinence from addiction. In addition to education and training channels, the government also needs social education channels, such as radio, newspapers, the internet, and community bulletin boards.

5.2 The process and path from persuading to acting

Solving the problem of “difficult to know” of rational cognition does not naturally lead to self-control of human behavior. "Difficult to act" here is the next-step problem. Just as smoking is harmful to health, and this is widely known, but the number of smokers is still huge. Strengthening the convert possibility from the rational cognition of digital addiction to self-control behavior of digital addiction is very important. In this regard, the educational government needs to help, guide and shape individuals’ decision-making of behavior. Persuading is essentially a process of strengthening people's rational cognition of digital addiction based on interests and harm. For the whole society today, in a deeply digitized social ecosystem, it is advisable and necessary for the government to establish a Digital Health Day, specifically utilize the specific date to widely educate the dangers of digital addiction nationwide, the help to construct a healthy digital lifestyle. The persuading process is crucial, therefore, the educational government should fully mobilize various social entities, including communities, social organization, public transportation operators, and other suitable entities, to jointly provide dissemination of digital addiction rational cognition and persuasion of quitting addiction for people. Furthermore, the governments of various countries and international public welfare organizations should jointly advocate for the establishment of a unified Digital Health Day on a global scale, so that digital health awareness and behavior can be recognized and strengthened worldwide.

In the process and path from persuading to acting, attention can be paid to exploring the effect of "integrating knowledge and action". In the Ming Dynasty of China, Mr. Yang Ming's theory of "unity of knowledge and action" believed that after obtaining the knowledge in the human heart, one must put it into practice to achieve "unity of knowledge and action". After the “unity”, one will obtain "conscience". This "conscience" is more profound than the "knowledge" before "unity of knowledge and action". Here we can achieve the true knowledge. The true knowledge, in turn, can promote people's positive and conscious action. Then people’s good self-control of behavior will be constructed. This forms a beneficial cycle of "knowledge" and "action" for humans. Therefore, in the process and path from persuading to acting, special attention should be paid to explore the educational form of digital addicts' demonstrating their personal experiences, and attention should also be paid to connecting persuading activities with people's actual digital consumption life experience. As a result, we can promote the "unity of knowledge and action" effect. On this basis, the probability of people in the deep digital social ecosystem shifting from rational cognition of digital addiction
to self-behavior control of digital consumption to avoid the risk of addiction will be increased. The mechanism of this process and path is shown in Figure 3.

![Fig. 3. The mechanism of the process and path from persuading to acting.](image)

### 6 Summary

This article focuses on the governance issues of people's digital addiction in the era of deep digitization. Based on an in-depth analysis of the special nature of digital addiction and the governance difficulties it brings to the government, it argues for the necessity of the educational government and designs an educational process and path for governance of digital addiction. This article believes that with the continuous progress of information technology, deep digitization is an irreversible trend, and the problem of digital addiction is becoming increasingly serious. Therefore, governments around the world should attach great importance to responding to this problem.

The relationship between the government and individuals is a persistent proposition in social problem governance. The era of deep digitization has brought new discussions and possible practical changes to this proposition. A person, as an individual, has the freedom to become addicted to digital consumption, but should not have the freedom to be controlled by digital consumption without self-awareness or self-control. The educational government, through the process and path of "teaching, knowing, persuading, and acting", enables people to freely and autonomously obtain the true freedom to avoid digital addiction in the digital ecosystem. This not only provides educational assistance to individuals, but also has important significance for the overall quality of the whole society life. The government's educational governance of digital addiction is a conscious implement of the solving mission to address the problems brought about by the deep digital social ecology. Generally speaking, the responsibility of the government towards individuals is limited, but with the development of the times, the scope of the government's responsibility towards individuals will also undergo new changes. The reappearence of the role of the educative government is a strengthening of the government's responsibility towards the people and has positive significance.

The educational government is proposed to address the need for optimizing governance of digital addiction in the era of deep digital times. The educational government is a natural choice for us when there is governance dilemma in both supply and consumption sides in the process of managing digital addiction. Although this article focuses on the phenomenon of digital addiction and then proposes and argues the educational government, in the human social ecology shaped by the rapid development of digitization and artificial intelligence, it cannot be ruled out that humanity is facing some new potential and possible vulnerabilities, confusion, and risks in the face of high-tech development. The educational government will help humanity better adapt to the development of the times. The educational government's governance of digital addiction covers all age groups, and helps people to trigger conscious
addiction control behavior through enhancing people’s rational cognition and self-control ability. It is committed to persuading already addicted individuals to return, while also preventing addiction for non addicts. It is a high-quality response to the problem of digital addiction in the deep digital era.

References