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Dilemma and Improvement Strategies for Family Education in the Information Age

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Abstract: The rapid development of information technology has reconstructed the family education ecology, bringing challenges such as information overload, network risks, and network addiction. At the same time, it weakens the authority of parent-child education, leading to a decline in the quality of parent-child companionship. Children are easily bound by the "information cocoon" and their offline interaction ability is weakened. Cause analysis points out that the impact at the technical level, poor adaptation to parent role transformation, and the incompleteness of the family education guidance service system are the main factors. By improving parents' digital literacy and media literacy, updating educational concepts, optimizing parent-child communication skills; formulating family digital usage conventions, strengthening content screening and filtering, designing offline parent-child activities, and paying attention to children's mental health; improving the external guarantee system, promoting the research and development and promotion of high-quality family education digital resources, and strengthening the inclusion of online literacy education into the national education system, aiming to build a scientific parenting model and create a new situation in family education in the information age.

Keywords: Information Age; Family Education; Educational Dilemma.

1. Introduction

As an important mechanism of social reproduction, family education is essentially a two-way interactive process between intergenerational cultural capital transmission and subjectivity construction [1], and it plays a core role in individual development. Today, under the influence of the wave of informatization and digitalization, family education has broken through the physical boundaries of the traditional family field and evolved into a complex system project covering value shaping, cognitive ability cultivation and social adaptation. The development of information technology has profoundly influenced the lifestyle, educational methods and educational content of family members [2]. To promote the adaptability of family education and the development of the times, it is urgent to clarify what difficulties information technology causes to the interaction between family members in family education, and propose countermeasures to promote the healthy development of the family education ecology.

2. Analysis of the Main Dilemmas of Family Education in the Information Age

Information technology affects children's growth, parent-child relationships, and thus affects parents' parenting methods. Prensky proposed the concepts of "digital aboriginal" and "digital immigrant" to indicate the differences in digital product users in different eras in accepting, adopting, using and managing digital technologies [3]. In family education, the role of parents and children with blood ties evolved into the relationship between "digital immigration" and "digital natives". Digital networks not only have a positive impact on the cognition and life of minors, but also bring three difficulties to the effective development of family education.

2.1. Challenges brought About by The Complexity of The Information Environment

The in-depth popularization of smartphones and online social media has reconstructed the family information ecosystem. Global data show that at least 77% of the world's population has access to the Internet [4]. Family members are immersed in a massive digital information flow, with complex content and diverse value orientation. Children's brains change significantly under the influence of digital media and information overload. The study shows that 68% of 2-year-olds use tablets, 59% of children can use smartphones, and 44% of children often use gaming consoles [5]. This special group does not have complete cognitive abilities, and some parents have lagged behind in digital literacy, resulting in excessive fragmented information continuing to impact the cognitive processing capabilities of family members. Children are prone to falling into an ineffective information vortex, and parents are unable to provide precise guidance due to insufficient screening ability. The cognitive resources of the two are irrationally consumed, which significantly reduces the effectiveness of family education.

The information on the Internet is complex and diverse, including a large amount of negative information, such as violence, pornography, horror, etc. Children's exposure to inappropriate media content will produce many negative results, such as enhanced aggression, desensitization, fear, low self-esteem, negative self-cognition, etc [6]. In addition, minors also face a variety of cyber risks, such as frequent occurrence of cyber fraud, cyber violence and cyber bullying. Today's children lack many other abilities compared to previous generations of children, and their physical, moral, social and personal development may be harmed by excessive exposure to digital technology [7].

The group of underage netizens is huge and has relatively weak self-control, information screening ability and critical thinking ability. They are easily attracted by online content

and become addicted to it. The rich virtual rewards in online games, instant interactions in social media, and massive entertainment content on short video platforms have greatly stimulated the senses and curiosity of minors, causing them to spend a lot of time in these virtual worlds. What's more serious is that children often lack the awareness and ability to manage time in the online world. The longer they immerse themselves in the online world, the more difficult it is to self-control and manage time, thus falling into a vicious cycle. Digital addiction is associated with the use of digital devices associated with this negative behavior [8]. This screen exposure affects the quality of sleep in young children and negatively affects children's interactive needs for language learning, self-awareness, and executive functions [9].

2.2. Dilemma Faced by Family Education Subjects

Past research shows that minors are much more accepting of digital networks than their parents, and they are more likely to integrate into the virtual space of the network. However, most parents fail to fully recognize the profound changes brought by the information age to family education, lack awareness of network risks, difficulty in distinguishing bad network information, and insufficient understanding of the seriousness of problems such as online fraud and bullying. Parents lack in-depth understanding of how the Internet affects their children, and family education guidance has become shallow, which has failed to effectively guide children to use electronic devices correctly. Family neglects the cultivation of information literacy, which leads to the lack of intersection between parents and children's digital lives, and it is difficult for parents to be in the same frequency as children's digital lives.

Traditionally, parents, as the authority of knowledge, provide guidance and education to their children with their life experience and expertise. However, in the information age, the popularity of the Internet and digital technology has greatly changed the way information is disseminated and obtained, which poses a challenge to the authoritative position of parents in traditional family education. Past research shows that the development of digital technology has brought about tremendous changes in the internal and external environment of family education, and the absolute authority of parents has been disintegrated, and parents have transformed from traditional knowledge imparters to collaborators, supporters, helpers and guides for student growth. Parents are no longer the only channel for children to obtain knowledge. Children can obtain information through the Internet, social media and other channels, which makes parents' authority in knowledge transmission relatively weaken. At the same time, the diversification and fragmentation of information have also led to greater difficulties for parents in screening and guiding children to obtain information, further weakening the educational authority of parents. In addition, as "digital aborigines", children demonstrate cognition and ability beyond parents in the use of digital technology, and have a "cultural feeding back" phenomenon, which further reconstructs the communication status in family education and exacerbates the weakening of parent education authority.

Although digital technology provides parents with the possibility of "online companionship", this companionship method cannot completely replace face-to-face communication and interaction. The digital life without parental supervision also reflects the lack of parent-child companionship and social emotional deficiency of children, which can easily have a negative impact on the shaping of minors' social emotions and social communication abilities, and even cause emotional health and psychological illness problems [10]. The information age extends the space for the development of individual self-consciousness, and then the development of individual consciousness transcends socialization progress, and the individual self-consciousness and development are not synchronized with social development, which will risk separating individual self-identity. Therefore, the social friendships built by children in the online world form a large contrast with the social disorders in real life, especially online social interactions that lack parental companionship and supervision are more likely to cause spatial cognitive imbalance.

2.3. Dilemma Faced by Family Education Recipients

Sunstein proposed the "Information Cocoon" to refer to the communication field where we listen only to what we choose and enjoy our things. Children are susceptible to the "information cocoon"[11]. With the recommendation of intelligent algorithms, children's Internet preferences are captured by big data, and the degree of relevant content is continuously pushed, causing them to devote themselves to homogeneous content for a long time, causing children to gradually solidify their thinking. At the same time, algorithm recommendations hinder the continuity of children's access to information, making it difficult for children to obtain the full picture of information, and is not conducive to children's understanding of the essence of things.

In the information age, family members, especially children, have significantly increased their dependence on digital media, while offline interaction capabilities have gradually weakened. On the one hand, the popularity of digital technology has made family members over-rely rely on digital media when obtaining information, socializing and entertainment. Past research has shown that children are more likely to indulge in online games, social media and short videos in digital environments, resulting in a decline in their interpersonal skills and social willingness in real life [12]. On the other hand, parents' overuse of digital technology makes it lack sufficient patience and concentration in their interactions with children, making it difficult to effectively guide children to interact offline and social interaction.

3. Analysis of the Causes of Family Education Difficulties in the Information Age

3.1. Technical Impact

The iterative update speed of information technology exceeds the cycle of social system adjustment and individual adaptability improvement. The rapid development and widespread popularization of technologies such as the Internet, mobile smart terminals, big data, artificial intelligence have greatly changed the methods of information acquisition, interpersonal interaction and leisure and entertainment [13], and profoundly reconstructed the time and space structure and information environment of family life. As the basic unit of society, the family is often passively involved in this wave of technological revolution. In the absence of sufficient preparation and system guidance,

parents and children are placed in a highly complex, information-overloaded, tempting and blurred digital living space. The rapidity and popularization of technological development have made the traditional family education experience inheritance, environmental control, and authoritative shaping face the risk of failure. The new adaptation mechanism is not yet mature, which has led to a series of practical difficulties such as the intensification of the intergenerational digital divide, the sharp increase in media literacy, and the high cost of information screening.

A digital platform driven by commercial interests as the core, its underlying algorithm recommendation mechanism constitutes a systematic grabbing and manipulating user attention resources. This mechanism continuously pushes highly personalized and instantly satisfying content through accurate user portraits, behavior tracking and preference prediction, aiming to maximize user stay time and platform stickiness. In the family field, this mechanism not only erodes valuable parent-child interaction time, aggravates family conflicts around screen use, but also deeply alienates children's learning motivation and exploration behavior.

3.2. Limitations of Education Subject Level

Parents with higher education levels can avoid being misled by false information when facing complex information on the Internet, screen out media content that is beneficial to their children's growth and reasonably control their children's use of digital devices. However, some parents themselves have significant structural shortcomings in digital literacy, lack of understanding of new technologies, new platforms, and new risks, and have limited operating capabilities, making it difficult to effectively guide their children's digital lives. At the same time, some parents have failed to achieve synchronous updates in their concepts, or stick to the traditional authoritative education model, or have an overly laissez-faire or panic-rejection attitude towards technology. This maladaptation and the lag of continuous learning during the role transformation process leads to parents being unable to deal with problems such as online mystery, bad information, and cyberbullying, making it difficult to establish effective family digital rules and create a healthy family media ecology.

Faced with the universal family education challenges brought by informatization, the existing family education guidance service system has obvious shortcomings in its targetedness, coverage and professionalism. First of all, the guidance for parents is mostly focused on traditional parenting concepts and communication skills, and the topics that are urgently needed in the information age, such as digital literacy improvement, network behavior guidance, and network security protection, are insufficient and in-depth. Secondly, the guidance service channels are relatively single and lack the ability to use information technology for large-scale, personalized and immediate guidance. Furthermore, professionals such as schools, communities and other service providers generally lack systematic training to integrate media literacy and family education information, which makes it difficult to guarantee the professionalism and effectiveness of guidance. The imperfect service system has caused parents to face the dilemma of poor channels and inaccurate information when seeking professional support and effective resources, and has weakened the empowerment role of the social support system in families to respond to informatization challenges.

4. Multiple Strategies for Improving Family Education in the Information Age

4.1. Improve Parents' Core Literacy: Empowering the Subject of Family Education

Improving parents' digital competence is an urgent need to resolve the technology generation gap and rebuild educational authority. The education department should work with communities, schools and professional institutions to open public welfare digital literacy workshops and online courses through a combination of online and offline methods, covering core modules such as smart device operation, high-quality educational resource acquisition, critical assessment of network information, children's online behavior management, and privacy and security education. Parenting education provides opportunities for access to resources and social support, and gain a deeper understanding of the development of children and the importance of safety [14]. At the same time, parents are encouraged to gradually improve their digital capabilities and media judgment in "study by doing", in the daily practice of accompanying their children to use educational software, screening online content, and discussing hot events, and change passive adaptation to active control. Family education can help families protect children’s safety against threats to protect the safety of children in an online and invisible world [15].

The core of education in an information environment has shifted from an "information monopolist" to a "growth collaborator". Parents should update the concept of digital education. Digital technology is no longer just a tool to assist family education, but a concept of thinking. On the one hand, respect children's right to exploration and development in the digital world, regard them as an active learning subject, and encourage independent exploration, critical thinking and creative expression on the basis of setting reasonable boundaries. Critical thinking is a key skill to distinguish between reliable and unreliable information [16]. On the other hand, strengthen high-quality parent-child companionship and emotional connections, transform movie viewing together and equal dialogues on online phenomena into educational opportunities to enhance understanding, convey values, and cultivate digital citizen literacy, establish trust relationships in interaction, and let children feel that their parents’ care for them continues [17].

The information environment has reshape the context and methods of family communication. Mastering the art of parent-child communication that fits the characteristics of the times is the core skill to cross the digital divide and maintain healthy parent-child relationships. In the information age, children's problems are hidden deep under the individual's behavior and hidden in their words. Parents should use the children's language and behavior to discover the problems behind them in parent-child communication. Parents need to actively learn and use positive and open skills to put aside their predictions when discussing online behaviors or online events, and focus on understanding their children's feelings, needs and the logic behind their behaviors. Parents should encourage their children to use digital platforms for beneficial purposes [18]. Furthermore, focus on communication on cooperative resolution, discuss and formulate network usage rules, information identification methods or conflict

resolution with children, and cultivate their sense of responsibility and self-discipline. Studies have shown that parent-child communication can regulate the relationship between cyberbullying, depression and NSSI; effective parent-child communication can make children feel cared for, thereby avoiding Internet addiction. Communication can stimulate children's strong resistance to setbacks and self-reflection, and guide children to make spontaneous changes.

4.2. Optimize the Internal Information Environment of the Family: Building A Healthy Digital Ecology

As the first place for children to come into contact with the digital world, the lack or blur of internal rules can easily lead to out-of-control screen time, Internet addiction and behavioral disorder. The Household Digital Usage Convention establishes clear boundaries and responsibilities through democratic consultations, and transforms disordered digital access into orderly educational practices. First, convene a family meeting and invite children to discuss the core terms such as the time period for equipment use, the maximum duration, the type of content suitable for access, and the location of the equipment storage. Secondly, the terms must be specific and operational, and the reward and punishment mechanism must be clarified. Finally, the Convention should be reviewed and revised regularly to adapt to changes in the growth phase of children and to ensure their continued effectiveness and family membership identity.

Parents' active intervention in content management is the core link in optimizing the family's digital ecology. Given the use of information technology by families, first, as a technology in the content field, it helps parents make responsible digital parenting decisions; second, it combines digital technology with practice to adopt new media to meet children's needs for information, collaboration and access [19]. At the technical level, make good use of parental control systems, secure DNS filtering services, child-friendly browsers and content grading software to automatically block bad websites and applications. At the same time, parents should actively select and recommend high-quality digital resources. For example, through activities such as games, cultivate intimacy between parents and children, so that parents can monitor the content and quality of their children's interactions with the screen, and guide children to learn in areas of interest [20]. More importantly, cultivate children's information critical ability through companionship, discuss news authenticity, identify network traps, and transform the content screening process into a classroom that improves media literacy, so that it can gradually internalize the selection criteria for healthy information.

The key to building a healthy family digital ecosystem is to provide attractive offline alternatives that are sufficient to compete with the online world. Rich physical activities not only directly reduce screen dependence, but also rebuild deep connections, promote comprehensive development, and provide multi-dimensional nourishment for children's growth. Parents' full commitment and interest inspiration enables children to gain a sense of accomplishment and pleasure in real interactions, and naturally form a preference for a healthy lifestyle. In addition, parents should guide their children to use digital technology to share knowledge, support charity, promote positive changes in online communities [21], and achieve dynamic balance between online and offline.

To optimize the family digital ecology, it is necessary to pre-position mental health monitoring and intervention and establish an early warning system. Pay close attention to children's emotional state, sleep and diet changes, abnormal reactions to equipment use and social dynamics in daily life. At the same time, maintain information exchange with the school and understand its performance and peer relationships in school. Introduce professional resources if necessary, such as psychological counseling hotlines or online assessment tools. More importantly, create a harmonious family atmosphere, carry out emotional topic discussions on a regular basis, strengthen its psychological resilience, and build an active defense mental health protection system.

4.3. Improve the External Guarantee System

Special funds and certification standards should be established at the national level to support universities, research institutions and education and technology enterprises to jointly develop high-quality resource libraries based on the concept of evidence-based education, and to be open for free through public platforms. The R&D principles must emphasize scientificity, adaptability, interactivity and cultural adaptability. At present, the country is actively building a family education service and guidance platform and continuously optimizing the content of family education. At the same time, big data and AI technology are used to achieve intelligent push, and resources are accurately matched according to family structure, children's age and specific needs. In addition, community libraries and parent schools should be equipped with resource experience terminals and provide usage guidance to ensure universal access to the digital divide.

A series of adverse effects of social media on children's social identity. Therefore, families, schools and other educational institutions must take serious measures to focus on families and children and strengthen their ability to respond to risks to protect their identities from violations and adversely affect their intelligence [22]. Schools have important advantages in systematically cultivating the digital viability of minors. However, in the existing curriculum system, online literacy education is mostly fragmented and lacks continuous curriculum standards, which leads to students generally facing the dilemma of skillful technology but weak literacy. It is urgent to fully integrate online literacy education into the national education sequence. In terms of curriculum construction, spiral upward content modules are designed based on the stage of children's cognitive development, such as lower grades focusing on safety awareness, middle grades strengthening information criticism, and higher grades deepening ethics and participation abilities. In terms of teacher guarantee, network literacy is included in the compulsory content of teacher training and teacher post-service training, an interdisciplinary teaching and research team is formed, and a contextual teaching case library is developed. In the implementation path, a combination of independent courses, subject penetration and project-based learning can be adopted. At the same time, an evaluation mechanism for home-school linkage is established, and through student digital behavior files, simulated situational task evaluation, etc., the level of literacy development is dynamically tracked to provide targeted feedback for family education [23].

5. Summary

The challenges and opportunities of family education

development coexist in the information age, and the focus is on whether parents can understand the future development trends of my country's education. Parents should seize the significant advantages brought by digital learning to children, break the dilemma of "digital immigration", and build a scientific parenting model. As guides of children's growth, parents should continue to improve their digital literacy, build a suitable digital environment for children in family life, and encourage children to grow up and develop in a digital environment, thereby creating a new situation in family education in the information age.

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