

Digital Interactive Technology and the Cultivation of Social Skills of Autistic Children: Philosophical Thinking on Man-Machine Relationship

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ARTICLE INFO	ABSTRACT	
Received: 19 March 2024 Accepted: 07 April 2024	Digital interactive technology has further promoted the development of modern education to a certain extent, better helped children to build self-confidence, strengthen their abilities, and laid a foundation for their later growth. Therefore, this paper puts forward an analysis of digital interaction technology and the cultivation of social skills of autistic children: philosophical thinking of man-machine relationship. According to the current analysis goal, the connotation of digital interaction technology is briefly described, and the importance of providing a safe and controllable environment for the cultivation of social skills of autistic children, meeting individual needs and forming cross-time training advantages is analyzed. On this basis, this paper discusses the challenges of digital interactive training of social skills for autistic children from the perspectives of hierarchical technology, educational form, individual development and social cognition. Next, first, we should define the dynamic social training goal, design a multi-level digital autistic children training mechanism, and form basic learning conditions. In addition, we should build an intelligent interactive skills training model, simulate diversified interactive social scenes, increase training levels, establish personalized training content, balance individual differences, and finally strengthen home-school cooperation, form educational synergy, and realize the formulation of digital interactive integration training strategies for autistic children. At present, the philosophical thinking of man-machine relationship is carried out from four angles: cognition, emotion, society and synthesis, which provides reference for subsequent research and development.	

INTRODUCTION

Today, with the digital wave sweeping the world, digital interactive technology has a profound impact on people's daily life style, work habits and even social structure in its unique way. Among them, a particularly striking application field is the cultivation of social skills of autistic children^[1]. Digital interactive technology provides a brand-new social platform for these special children, enabling them to establish and develop social relationships in the virtual world, thus promoting the improvement of social skills in real life^[2]. However, behind the application of this technology, there is a complex and profound philosophical thinking about man-machine relationship. Autism, as a complex neurodevelopmental disorder, seriously affects children's social interaction ability^[3]. Although the traditional treatment can alleviate the symptoms of autism to some extent, it is often difficult to fundamentally solve the problem^[4]. The emergence of digital interactive technology provides new possibilities for the cultivation of social skills of autistic children. Through virtual reality, augmented reality, artificial intelligence and other technical means, a highly simulated social scene can be constructed, so that autistic children can interact socially in a simulated environment, thus gradually cultivating their social skills. However, at present, the application of digital interactive technology in the cultivation of social skills of autistic children is not smooth sailing. On the one hand, the limitations and uncertainties of technology make it difficult to predict and control its effects completely^[5]. On the other hand, the complexity of man-machine relationship also brings many challenges to this application. Although digital interactive technology can simulate human social behavior, it cannot completely replace real interpersonal communication^[6]. Overreliance on technology may make it more difficult for autistic children to integrate into society in real life. Moreover, the application of digital interactive technology also involves ethical and moral considerations. While using technology to help autistic children improve their social skills, we should

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also pay attention to their privacy protection, autonomy and digital identity^[7]. Under this background, how to ensure that the application of technology can not only exert its maximum effectiveness, but also respect and protect children's rights and interests is a problem that needs our in-depth thinking. Therefore, this paper puts forward the philosophical thinking and analysis of digital interaction technology and the cultivation of social skills of autistic children: man-machine relationship. As a tool, the essence of digital interactive technology is the embodiment of human wisdom and creativity. However, the application of technology is not simply black and white, but needs to find a balance between human needs, values and ethics^[8]. In the process of cultivating social skills of autistic children, we need to make clear the application goal and boundary of technology, and also pay attention to the social, cultural and psychological factors behind technology. Learn to face up to the existing problems and challenges, and make in-depth thinking and discussion from the perspective of philosophy. Only in this way can we make better use of digital interactive technology to create a more inclusive, understanding and accepting social environment for autistic children^[9].

1 DIGITAL INTERACTIVE TECHNOLOGY CONNOTATION

In fact, digital interactive technology covers a wide range of applications, including virtual reality, augmented reality, artificial intelligence, user interface design and other fields, aiming at realizing information exchange and interaction between people and machines and people through digital means ^[10]. The core of this technology is "interaction". Compared with the traditional application mode, it breaks through the limitation of traditional one-way information dissemination to some extent and realizes the two-way circulation and feedback of information ^[11]. With the support of digital interactive technology, users can communicate and operate with computers, smart devices or other users more naturally and intuitively ^[12]. Whether through speech recognition, gesture recognition or eye tracking, digital interactive technology can accurately capture users' intentions and needs and make corresponding responses. Moreover, digital interactive technology is highly personalized and intelligent ^[13]. In the actual application and integration process, combined with the current test requirements, according to users' daily preferences, habits and behavior patterns, the interaction mode is intelligently adjusted and optimized to provide faster and more convenient services. Personalized interactive experience not only improves users' satisfaction and loyalty, but also provides enterprises with more accurate market analysis and user portraits, which has important and key practical application effects ^[14].

2 AN ANALYSIS OF THE IMPORTANCE OF INTEGRATING DIGITAL INTERACTION WITH SOCIAL SKILL DEVELOPMENT IN CHILDREN WITH AUTISM

2.1 Providing a safe and controlled environment for the development of social skills in children with autism

The importance of integrating digital interaction with social skills development for children with autism is a key concern in the current field of education and technological development. This kind of integration not only opens up new ways for the social skill development of autistic children, but also provides new possibilities for the application of digital interaction technology ^[15]. First of all, a brief analysis of the factors influencing the social development of children with autism was conducted, taking into account the actual needs of analysis and the content of social development of children with autism, as shown in Figure 1 below.



Figure 1 Graphical representation of the analysis of factors influencing the social development of children with autism

Combined with Figure 1, the analysis and practical verification of the factors influencing the social cultivation of autistic children are realized. The above factors will not only affect the skill development of autistic children, but also lead to the unreliability of the training environment to a certain extent, which will affect the learning and growth in the later stage ^[16]. Therefore, under such background conditions, the integration of digital interaction technology provides a safe and controllable environment for the social skills development of autistic children. First, from the perspective of autistic children, the introduction

of digital interactive technology provides them with a more inclusive and personalized learning environment. While traditional social skills development methods often fail to take into account the individual differences of each child, digital interactive technology can provide customized teaching solutions according to the specific situation of the child ^[17]. By simulating real social situations, digital interactive technology can help autistic children gradually overcome social barriers and improve their self-confidence and adaptability ^[18].

In addition, the ability of digital interaction in simulating real environments and providing personalized teaching will become stronger and stronger ^[19]. This integration not only promotes the innovative application of digital interaction technology, but also injects new vitality into its development in the field of education. From the social point of view, the integration of digital interaction and social skills development of autistic children is of great practical significance ^[20]. As a part of the society, the growth and development of autistic children are related to the harmony and progress of the whole society ^[21]. Through the aid of digital interactive technology, we can better help autistic children to improve their social skills, promote their better integration into the society, and provide more support and help for the growth and development of autistic children ^[22].

2.2 Meet individual needs

In the process of cultivating social skills of autistic children, it is very critical and important to meet individual needs. Every autistic child has its own unique cognitive, emotional and behavioral characteristics, and the teaching plan for them must be personalized and refined. And digital interactive technology is a tool that can effectively meet individual needs ^[23]. Digital interactive technology is highly flexible and customizable ^[24]. By collecting and analyzing the performance and reaction of autistic children in the virtual environment, we can intelligently adjust the teaching content, difficulty and progress to a certain extent, and transform the training mode from multiple angles, so as to better meet their individual needs ^[25]. For example, for children with language retardation, in the process of skill training, the integration of digital interactive technology can increase more opportunities for language stimulation and practice, which can help children open up their learning methods; However, for children with rigid dyskinesia, sports training games or interactive communication can be used to design a matching training model, which can help them improve their sports ability and strengthen their comprehensive practical ability. However, to truly realize personalized teaching, it is not enough to rely solely on technology. It is also necessary to combine professional educational concepts and methods, as well as teachers' professional knowledge and experience. Teachers need to make individualized teaching plans according to the specific situation of each child, and work closely with the technical team to ensure the effective implementation of the teaching plan.

2.3 The formation of cross-space culture advantages

In the cultivation of social skills of autistic children, one of them has broken the geographical restrictions. Traditional social skills training often needs to be carried out in specific places, such as schools and rehabilitation centers. However, this may not be convenient for many autistic children, especially those who live in remote areas or have difficulty in moving. Their perception and learning ability to the outside world is weak, which will affect their own judgment to some extent. Digital interactive technology enables teaching content to be transmitted to any place with internet, so that autistic children can receive professional social skills training no matter where they are. The second is to break the time limit. At present, the common social skills training often needs to be carried out in a specific period of time.

However, the learning progress and rhythm of autistic children may be inconsistent, and some may even need more time to understand and master social skills. Digital interactive technology allows autistic children to learn according to their own pace and progress, without being bound by a fixed timetable. The advantages of cross-time training are also reflected in resource sharing and interactive communication. Through the digital interactive platform, autistic children can be exposed to teaching resources and experience sharing from different places, thus enriching their learning content and horizons. At the same time, they can interact and communicate with other autistic children or volunteers online, share their learning experiences and form a good learning community.

3 AUTISTIC CHILDREN'S SOCIAL SKILLS DIGITAL INTERACTIVE INTEGRATION TRAINING CHALLENGES

3.1 Skills development technical challenges

In the cultivation of social skills of autistic children, the application of digital interactive technology brings infinite possibilities, but it also faces many technical challenges, which is the highlight of the problems in daily cultivation and the contradiction emerging from the development of man-machine relationship system. Digital interactive technology and the cultivation of autistic children need to make specific and complete plans. In the whole process, we should try to compare and analyze children's psychological characteristics and social needs by means of technical interaction, and then make the next stage of treatment and adjustment after forming a basic understanding. However, there are relatively few digital interactive products for autistic children on the market at present, and many products can not fully meet their needs, as shown in Figure 2 below:



Figure 2 Illustration of technical requirements for skills training of autistic children

Combined with Figure 2, the technical requirements of skills training for autistic children are analyzed and briefly described. The above situation shows that the coverage and direction of the current development of human-computer interaction are not very clear and specific, which cannot arouse people's resonance. In addition, the stability and security of technology can not be ignored. Autistic children may encounter some problems when using digital interactive products, such as difficult operation and unfriendly interface, which will also affect their daily use experience and learning effect to some extent. Coupled with the emergence and extension of network security problems, it is more difficult to protect the privacy and data security of autistic children when using digital interactive products, which has gradually become an urgent problem and cannot better meet the diverse social skills training needs of autistic children.

3.2 Educational form challenges

To some extent, the change and innovation of educational forms come from the introduction of digital technology, which causes friction and collision between traditional education and new digital interactive training methods, and then leads to philosophical thinking on man-machine relationship. For the training and teaching of autistic children, the most common way at present is practical communication, that is, face-to-face communication and interaction, which emphasizes the emotional connection and direct communication between people. However, for autistic children, this kind of communication may bring some difficulties and pressures. This is mainly because autistic children are not good at communication, and they need to communicate step by step. Too direct communication will lead them to be more introverted and autistic, and changes in the external environment will also lead them to be unable to bring them into the corresponding communication environment, with poor results. In addition, although digital interaction technology can simulate social scenes, it cannot completely replace real interpersonal communication. Therefore, how to find a balance between digital interaction and traditional education and make them complement each other is a big challenge for educational forms.

Next, the introduction of digital interactive technology makes the educational content more diversified and personalized, which provides a boundary condition for children's learning, but it is not comprehensive. To some extent, it also means that educators need to master more technical knowledge and application ability in order to provide more accurate and effective digital interactive training programs for autistic children. Educators should not only have profound professional background and educational experience, but also constantly learn and master new technologies to adapt to the changes in educational forms. The challenge of educational form is also reflected in the evaluation and feedback mechanism of digital interactive technology. There is a strong connection between how to evaluate the learning effect of autistic children in digital interactive environment and how to adjust the training scheme according to their learning progress and feedback. It is necessary to design more targeted treatment methods and solutions, and constantly increase the philosophical thinking of man-machine relationship.

It should be noted that in fact, in the current research direction, the change of man-machine relationship is not fixed, but is adjusted and integrated according to the actual training needs of autistic children, further increasing the actual training characteristics, maximizing the application value of digital interaction technology and improving the philosophical height of interpersonal relationship.

3.3 Individual development challenges

Under normal circumstances, there will be great differences in individual development in different periods or States, and constant changes also mean another kind of growth for autistic children. However, the current way can not be better adjusted and handled, and it will also lead to uncontrollable differences in individual development, as shown below:

(1) Although digital interactive technology provides a brand-new social learning and practice platform for autistic children, over-reliance on these technologies may hinder the development of their real social skills. Communication in the virtual world often simplifies the complexity of real social interaction, which makes it difficult for children to adapt to and deal with complex social situations in the real environment.

(2) Although the personalized characteristics of digital interactive technology meet the needs of autistic children for personalized learning, it may also aggravate their disconnection from the mainstream culture of society. Overpersonalized learning environment may make it difficult for children to integrate into the collective and affect their social integration and adaptability.

(3) The rapid updating iteration of digital interactive technology also challenges the individual development of autistic children. They need to constantly adapt to new technical interfaces, operating methods and interaction rules, which puts higher demands on children's cognitive ability and adaptability.

In the process of digital interactive fusion cultivation of autistic children's social skills, due to the above situation and problems, on the one hand, it will be difficult for teachers or guides to pay better attention to the children's individual development, unable to make reasonable use of the advantages of digital interactive technology, and the difficulty of providing children with a rich variety of social learning resources will also be gradually improved; on the other hand, it does not pay attention to guiding the children to carry out social practice in real environments, and does not cultivate their real social skills in time. On the other hand, we do not focus on guiding children to socialize in real environments, and we do not cultivate their real social skills in a timely manner. To a certain extent, there is a lack of attention to children's mental health and adaptability, which makes it difficult for them to grow up healthily in the process of digital interactive integration.

3.4 Social cognitive challenges

Society's general perception of autistic children is relatively single and vague, and there are still certain misunderstandings and prejudices in some aspects. Many people's understanding of autism remains superficial, treating it simply as a manifestation of "withdrawn personality" or "strange behavior", but ignoring the complex physiological and psychological mechanisms behind it. This cognitive bias makes it difficult for autistic children to receive adequate understanding and support in the process of social skills development. Society is cautious about the use of digital interactive technology in the development of social skills of autistic children.

Although at this stage, in the context of philosophical thinking about human-computer relationship, digital technology provides a new way for autistic children to socialize and learn, and some aspects of it have made great progress and achieved better results. However, there are still some concerns about their effectiveness and safety. It is feared that digital interaction may not be a complete substitute for real human interaction and may even have a negative impact on children's mental health.

The social cognitive challenge is also reflected in the support system for social skills development for children with autism. At present, there is a relative lack of social skills training resources for autistic children, and they are unevenly distributed. The lack of professional educational institutions and teachers in many areas makes it difficult for autistic children to obtain effective social skills training, and it is even more difficult for them to address this social cognitive challenge at multiple levels, failing to provide all-around and personalized social skills training services for autistic children.

4 DEVELOPING STRATEGIES FOR THE DEVELOPMENT OF DIGITAL INTERACTIVE INTEGRATION OF SOCIAL SKILLS IN CHILDREN WITH AUTISM SPECTRUM DISORDERS

4.1 Set dynamic social training goals

In the combination of digital interactive technology and social skills training for autistic children, it is particularly important to set dynamic social training goals. It not only helps to meet the individual needs of autistic children more accurately, but also makes flexible adjustments with the growth and development of children to ensure that the training process is always in line with the actual situation of children. The dynamic goal of social training means that it is necessary to make a personalized training plan according to the age, cognitive level and social ability of autistic children. Every child is unique, and their development speed and ways in social skills are different. Therefore, through professional evaluation and diagnosis, we can understand the specific needs of each child and tailor appropriate social training programs for them. The specific training contents and implementation conditions are shown in Table 1 below:

Table 1 Dynamic Social Training Target Training Content and Execution Condition Setting Table			
Dynamic Social Development Goals Training Program Name	Training content preset	Clarify the execution conditions	
Learning Alone	Learn to read, handle simple daily tasks, etc	Completed alone, without the need for assistance from the guide	
Operate digital interactive software	Using digital interactive software for simple one-on-one learning	Collaborate with communication partners to increase fun and motivation	
Communication and exchange	Online one-on-one communication	Learn from each other, progress with each other, and increase the scope of interaction	
Simulated environment communication and exchange	Participate in positive activities on digital interactive software and increase	Interactive Participants and Performers	

communication frequency

Real scene communication and exchange

Offline participation in activities and communication

Expand communication and shape self-confidence

Combined with Table 1, the dynamic training content and implementation conditions of social training objectives are set and integrated. On this basis, the dynamic social training goal also requires us to constantly adjust and optimize in the training process. With the growth and progress of autistic children, the level of social skills will continue to improve. In addition, children's learning effect should be evaluated regularly, and the evaluation results should be adjusted in a timely manner. Including adding new social skills, improving the difficulty of skill training or changing training methods, etc., to ensure that the training program always matches the actual situation of children. The dynamic social training goal also needs to pay attention to the emotional and psychological health of autistic children. While cultivating social skills, we should pay attention to children's emotional changes and self-confidence building. By providing positive emotional support and psychological guidance, we can help children establish a positive attitude and a good emotional foundation, and create more favorable conditions for their social skills development. Emotional and psychological support can provide more effective and humanized social skills training services for autistic children and help them better integrate into society.

4.2 Design a multi-level digital autism child training mechanism

The multi-level digital training mechanism for autistic children aims to build a comprehensive, systematic and flexible training system to meet the diverse needs of autistic children in the development of social skills. First of all, deeply understand the guiding background of the philosophical connotation of man-machine relationship. The change of this relationship is not only the simple application and integration of technology, but also the deep interaction between man and machine in cognition, emotion and behavior. In the process of cultivating autistic children, digital interactive technology should be used as an auxiliary tool, rather than replacing real interpersonal communication. Therefore, when designing the training mechanism, we should emphasize the harmonious symbiosis between technology and people to ensure that technology can improve children's social skills without damaging the establishment and development of their interpersonal relationships. Based on this, we can also design a multi-level digital training mechanism. As shown in Figure 3 below:



Figure 3 Diagram of multi-level digital autistic children's training mechanism

Combined with Figure 3, the practical setting of multi-level digital autistic children training mechanism is realized. Next, the following levels are analyzed and integrated in detail. The first layer is the cultivation of basic skills, which helps autistic children to be familiar with basic social rules and expressions through simple digital games and interactive exercises. Pay attention to interest and intuition to stimulate children's interest and enthusiasm in learning; The second level is the improvement of intermediate skills, which allows children to practice in a simulated social environment through more complex digital simulation scenes and role-playing games. Emphasizing authenticity and interactivity, helping children gradually adapt to and master the skills in real social situations; The third layer is advanced ability development, which provides more challenging social tasks and learning resources for autistic children through advanced digital interactive technology and personalized learning paths. This level pays attention to personalization and differentiation to meet the different needs of different children in the development of social skills.

In addition, in the whole training mechanism, the establishment of an effective evaluation and feedback system can also play an auxiliary and supporting role, regularly evaluate children's social skills and learning progress, and dynamically adjust the training program according to the evaluation results. Regularly investigate and analyze children's emotional and psychological changes in the process of using digital interactive technology, and ensure the all-round development of children's social skills under the guidance of philosophical thinking of man-machine relationship.

4.3 Building an intelligent interactive skills training model

At present, digital interactive technology is gradually becoming an important force to promote educational innovation. Constructing intelligent interactive skills training mode can not only provide autistic children with more personalized and accurate learning experience, but also effectively make up for the shortcomings of traditional education methods and improve the training effect. The core of intelligent interactive skills training mode is to create a highly simulated and interactive social learning environment for autistic children by using advanced digital interactive technology. Through virtual reality, augmented reality and other technical means, the social scenes in real life are simulated, so that children can experience and practice social skills in the virtual world, thus gradually improving their social skills.

According to children's personalized needs and learning progress, intelligent recommendation of suitable learning resources and tasks, to achieve accurate teaching. In the overall process, it is necessary to carry out periodic analysis and data integration, and real-time data analysis and feedback, so that teachers can understand the children's learning situation in a timely manner, adjust the teaching strategy and improve the teaching effect. In addition, the intelligent interactive skills training mode can also stimulate children's learning interest and initiative, so that they can master social skills in a relaxed and pleasant atmosphere. However, it should be noted that there are some challenges in building an intelligent interactive skills training model. In the process of training, we should try to ensure the safety, stability and ease of use of the technology, quickly integrate and optimize various teaching resources, and improve teachers' digital literacy and educational innovation ability.

4.4 Simulate diverse interactive social scenarios

Digital interactive technology can build a variety of different social scenarios, from simple daily communication to complex group activities, providing autistic children with rich social experiences. The scenarios mainly include the simulation of real environments such as schools, homes, parks, etc., so that children can feel the fun of interacting with others in the virtual world. At the same time, these scenarios can be dynamically adjusted according to the children's progress and needs, so as to meet the requirements of social skills development at different stages. In addition, in the simulated social scenarios, autistic children can learn how to establish connections with others, express their emotions and share experiences through interaction with virtual characters. They can practice and try again and again without pressure, gradually overcoming social barriers and improving self-confidence.

The system can also provide real-time feedback and assessment to help children understand their own performance in the socialization process, so that they can make targeted improvements and enhancements. Digital interactive technology can also be combined with other educational resources, such as video tutorials and online games, to provide autistic children with diversified learning methods. It can stimulate the children's interest in learning and enable them to master social skills in a relaxing and enjoyable atmosphere. In addition, teachers and parents can provide timely guidance and help to the autistic children by assisting them with interactive processing, so as to promote the comprehensive development of autistic children.

4.5 Establishment of personalized training content to balance individual differences

The development of social skills of autistic children has significant individual differences. Therefore, we need to develop personalized training programs according to the specific needs and characteristics of each child to ensure that they can get the most effective support in the process of social skills training. The specific structure is shown in Table 2:

Table 2 Stage-setting table for personalized training content			
Personalized training content setting	Content standards		
Phase 1- Comprehensive assessment of children with autism	Children's social skills, interests, emotional needs, and family background		
Phase 2- Setting Targeted Goals	Children's age, cognitive ability, and social skills level		
Stage 3- Individual Difference Balance	Close collaboration between teachers, parents, and experts		

In conjunction with Table 2, the setting of the phases of the individualized training content is realized. The first phase of the current individualized training content can be established on the premise that a comprehensive assessment of each child with autism should be carried out. The assessment should include the child's level of social skills, interests, emotional needs, and family background. By gaining a deeper understanding of the unique characteristics of each child, the specific needs of the child in terms of social skills development can be more accurately determined.

The second stage is the development of individualized training content, with targeted learning objectives and tasks designed for each child based on the results of the assessment. These objectives and tasks should take into account the child's age, cognitive ability and social skills level to ensure that the content is both challenging and relevant to the child. At the same time, more emphasis should be placed on the development of children's self-confidence and initiative, so that they can feel a sense of achievement and enjoyment in the learning process. In order to balance individual differences, a variety of teaching methods and approaches are used in the training process to broaden the scope of the students' learning and to clarify the corresponding learning directions. For example, for children with weak social skills, role-playing and simulation are used to help them gradually master basic social rules and behaviors; for children with high emotional needs, emotional communication and interaction are emphasized to provide them with more emotional support and comfort.

In the third stage, the establishment of individualized training content and the balancing of individual differences require close cooperation between teachers, parents and specialists. Teachers need to have the professional knowledge and skills to develop individualized training programmes based on children's needs and characteristics; parents need to be actively involved in their children's training process and provide the necessary support and assistance; and specialists need to provide professional guidance and advice to ensure that the content of the training is scientifically sound and effective.

4.6 Strengthening home-school cooperation and forming educational synergies

Digital interactive technology and social skills development of autistic children play an indispensable role in strengthening the cooperation between home and school. Through the joint efforts of both home and school, the educational synergy is formed, and a more comprehensive and systematic social skills development environment is created for autistic children. Digital interactive technology provides a convenient communication platform for home-school cooperation. Traditional home-school communication is often limited by time and place, but digital interactive technology breaks this limitation, allowing parents and teachers to communicate anytime and anywhere. Through online meetings and instant messaging, parents can keep abreast of their children's social skills development in school, and teachers can provide parents with feedback on their children's social performance in the home environment, so that they can work together to formulate a more targeted training program; digital interactive technology provides a wealth of educational resources for home-school cooperation. Parents and teachers can make use of digital interactive technology to collect and organize information and cases about social skills development of autistic children, and share educational experiences and insights.

These resources not only help to improve the educational level of parents and teachers, but also provide autistic children with more diversified and personalized learning experiences; digital interactive technology can also help parents better participate in the process of their children's social skills development. Through virtual reality, augmented reality and other technological means, parents can create a simulated social scene for their children at home, and let the children practice in the company of their parents. This not only enhances the interaction between parents and their children, but also allows parents to better understand their children's social needs and progress, so that they can provide more targeted support and assistance. To a certain extent, the above teaching methods have further strengthened the cooperation between home and school, and clarified the relationship of trust and support between both parties. Parents and teachers should maintain a positive communication attitude, respect each other's educational concepts and methods, and work together to develop the social skills of autistic children. With the aid of digital interactive technology, the cooperation between home and school will be closer and more efficient, providing strong support for the social skills development of autistic children.

5 NEW EXPLORATIONS IN PHILOSOPHICAL REFLECTIONS ON HUMAN-COMPUTER RELATIONSHIPS

5.1 Thinking in cognitive terms

Combining digital interactive technology and social skill cultivation of autistic children, philosophical thinking about human-computer relationship from cognitive perspective: In fact, under different background conditions and in combination with the development of current society, digital interactive technology provides autistic children with a brand new cognitive world. By simulating real-world scenes and situations, diversified technologies allow children to interact socially in virtual environments, so that they can gradually master and understand social rules and skills. The current cognitive approach breaks through the traditional mode of interpersonal interaction, enabling autistic children to better integrate into society and understand others through the medium of machines. However, this machine-based cognitive process also raises a number of philosophical questions. These include the reality of the social scenarios simulated by the machine, and whether the children's cognition will be limited and affected by the machine. These questions lead to further in-depth consideration of the relationship between machines and the real world, as well as the role of machines in the cognitive process.

Digital interactive technology has two sides to the cognitive development of children with autism. On the one hand, it can help children overcome social barriers and improve their social skills; on the other hand, over-reliance on machines may lead to a decline in children's social skills in the real world, or even cognitive biases. Therefore, it is important to think deeply about how to utilize technology while avoiding its potential negative effects. In addition, the human-computer relationship involves the definition of the "cognitive subject". With the aid of digital interaction technologies, children with autism learn and understand social rules through interaction with machines. In this process, who is the real cognitive subject, the child or the machine? This definition is not only related to the use of technology, but also to our understanding of the nature of human nature and machines. Therefore, philosophical thinking from the cognitive point of view can see the complexity and multi-faceted nature of machines in the cognitive process, and cautiously look at the development of the relevant industries, and under the premise of fully utilizing the advantages of technology, we should also pay attention to the problems and challenges it may bring.

5.2 Thinking in terms of emotions

Digital interactive technologies provide a channel for children with autism to communicate emotionally. For many children with autism, face-to-face human interaction can be a huge challenge. Digital interactive technologies, such as virtual reality and artificial intelligence, can create a safe, controlled environment where they can try to connect with others and learn to express and understand emotions. By simulating real-life social situations, children can gradually overcome barriers to emotional communication, increase self-confidence, and improve social skills. However, it is worth thinking about whether emotional communication between humans and machines is the same as real interpersonal emotional communication. Although technology

can simulate human emotional responses, can it truly understand and experience emotions, and can machines replace real people as partners in children's emotional exchanges. These questions lead us to a deep philosophical reflection on the emotional dimension of the human-machine relationship. Emotional dependence in the human-machine relationship is also an issue that cannot be ignored. As children interact more deeply with digital interactive technologies, they may develop some degree of emotional attachment to the machine. This dependence may help them to establish emotional connections, but it may also lead to greater isolation in real human relationships. Therefore, we need to be aware of the potential risks of such dependence and guide children to find a balance between human-machine relationships and real human relationships. Thinking about human-computer relationships from an emotional perspective should also focus on how technology affects children's self-perception and emotional expression. Digital interactive technology provides a platform for children to express their feelings and thoughts more freely. However, this may also lead them to become more introverted and silent in the real world. Therefore, children need to be taught to understand that technology is only a tool and that true emotional communication needs to be based on real human interaction.

5.3 Social perspective

Digital technology provides unprecedented opportunities for the development of social skills for children with autism. Through virtual reality, artificial intelligence and other technological means, autistic children can practice in simulated social environments, gradually master social skills and enhance their ability to interact with others. The emergence of this technology is undoubtedly an innovation to the traditional way of social skills training, and also provides a possibility for autistic children to better integrate into the society and realize their self-worth. However, the popularization and application of this technology may exacerbate social inequality. For those children who do not have access to the support of digital interactive technology, they may face greater social barriers and difficulties in integrating into society. This may lead to unequal distribution of social resources and increased social stratification. In addition, the development of human-computer relationships involves the prediction and planning of future societies. Whether we should encourage more human-computer interaction as technology continues to advance and become more popular as a means of solving problems such as social barriers, or whether we should be alert to the potential risks of technology in order to avoid the degradation of social skills caused by over-reliance on machines, all of these issues need to be explored in the light of the actual needs and circumstances, and taken into full consideration when formulating social policies and planning for the future development of the society.

5.4 Integrated philosophical analysis

Digital interactive technologies offer innovative ways to develop social skills in children with autism. By simulating real-world social situations, these technologies enable children to practice and improve their social skills in a safe, controlled environment. The human-machine relationship is complementary, with the machine acting as a mediator and an aid to help children overcome social barriers and better integrate into society. In addition, the human-machine relationship involves a comparative analysis of humanity, freedom and responsibility. While digital interactive technologies provide children with more opportunities for socialization, they may also lead to excessive dependence on machines. Such dependence may undermine children's autonomy and free will, and even raise moral and ethical issues. Finally, a comprehensive philosophical analysis of human-machine relationships needs to take into account the influence of social and cultural contexts. Different social and cultural environments have different perceptions and acceptance of human-computer relationships. In some cultures, people may be more inclined to emphasize the interaction and emotional connection between people and be cautious about human-computer relationship. Therefore, when promoting and applying digital interactive technologies, it is necessary to fully consider the values and needs of different cultures, so as to provide useful references and insights for future technological development and social applications.

CONCLUSION

In conclusion, the above is a philosophical reflection and practical analysis of digital interactive technology and social skills development of autistic children: human-computer relationship. The development of digital interactive technology has opened a new door to the social world for children with autism, and it also shows the complexity of human-computer relationship. However, the development of any technology is not always smooth, and it requires careful thinking and traveling. The integration and setting of numerical interaction technology can, to a certain extent, not only simulate real social scenes and allow autistic children to have effective social interactions in the virtual world, but also make intelligent adjustments according to the children's responses and behaviors to achieve personalized treatment plans. This undoubtedly opens up a new way for the cultivation of social skills of autistic children. However. Although digital interactive technology can provide a new social platform for autistic children, it can't completely replace the real interpersonal communication. It can be used as an adjunct rather than an alternative, focusing on the development of children's social skills in real life. In addition, philosophical thinking about human-computer relationships reminds us that while utilizing technology, the rights and interests of children must be respected and protected. We should pay attention to children's privacy, autonomy and digital identity to ensure that the application of technology can maximize its effectiveness and meet ethical and moral requirements, with the hope of providing autistic children with more accurate and personalized treatment plans, and helping them better integrate into society and enjoy life.

REFERENCES

[1] Hui X U , Wang T .Social motivation deficits in individuals with autism spectrum disorders[J].Advances in Psychological Science, 2022, 30(5):1050-1061.

[2] Ziegler S M T , Morrier M J .Increasing Social Interactions of Preschool Children With Autism Through Cooperative Outdoor Play:[J].The Journal of Special Education, 2022, 56(1):49-60.

[3] Chen R S Y .Improvisations in the embodied interactions of a non-speaking autistic child and his mother: practices for creating intersubjective understanding[J].Cognitive Linguistics, 2022, 33(1):155-191.

[4] Wang H I, Wright B J D, Bursnall M, et al.Cost-utility analysis of LEGO based therapy for school children and young people with autism spectrum disorder: results from a randomised controlled trial[J].BMJ Open, 2022, 12(1):e056347.

[5] Wu C, Zhang J. The role of emotion in language development among bilingual children with autism spectrum disorders: A critical void[J].Linguistic Approaches to Bilingualism, 2022, 12(1):87-91.

[6] Wang L , Wang Z , Wang H .The neural mechanisms of developmental motor disorders in children with autism spectrum disorder[J].Advances in Psychological Science, 2022, 29(7):1239-1250.

[7] Tret G .Imitation Recognition by Minimally Verbal Young Children: A Comparison Between Down Syndrome and Autism Spectrum Disorder:[J].Focus on Autism and Other Developmental Disabilities, 2022, 37(1):34-45.

[8] Ulzii D , Kabot S , Reeve C .A Comparison of iPad-Assisted and Flash Card-Assisted Instruction for Learners With Autism:[J].Journal of Special Education Technology, 2022, 37(2):203-214.

[9] Galligan M R L , Suhrheinrich J , Kraemer B R .Video Modeling for High School Students With Autism Spectrum Disorder:[J].Journal of Special Education Technology, 2022, 37(1):126-134.

[10] Viezel K D , Freer B , Morgan C D .Adaptive Behavior of College Students With Autism:[J].Focus on Autism and Other Developmental Disabilities, 2022, 37(1):56-65.

[11] Ingelin B L , Intepe-Tingir S , Hammons N C .Increasing the Number Sense Understanding of Preschool Students With ASD:[J].Topics in Early Childhood Special Education, 2023, 43(2):116-128.

[12] Wang X , Xing W .Supporting Youth With Autism Learning Social Competence: A Comparison of Game-and Nongame-Based Activities in 3D Virtual World:[J].Journal of Educational Computing Research, 2022, 60(1):74-103.

[13] Long H M , Bouck E C , Kelly H .An Evidence-Based Practice Synthesis of Virtual Manipulatives for Students With ASD and IDD:[J].Focus on Autism and Other Developmental Disabilities, 2023, 38(3):147-157.

[14] Truong D M , Barth A M , Mire S S ,et al.Cultural considerations for conducting autism assessment with Asian American and Pacific Islander students[J].Psychology in the schools, 2022(7):59.

[15] Zhang S , Prykanowski D A , Koppenhaver D A .Using Construction - Integration Theory to Interpret Reading Comprehension Instruction for Students with Autism Spectrum Disorder: A Systematic Review and Meta - Analysis[J].Reading Research Quarterly, 2023, 58(1):126-159.

[16] Gregori E , Mason R , Wang D ,et al.Effects of Telecoaching on Conversation Skills for High School and College Students With Autism Spectrum Disorder:[J].Journal of Special Education Technology, 2022, 37(2):241-252.

[17]Peer mentoring support for students with autism in school settings: a concept analysis[J].British Journal of Special Education, 2022, 49(4):561-581.

[18] Richmond S, Kirk H, Gaunson T, et al.Digital cognitive training in children with attention-deficit/hyperactivity disorder: a study protocol of a randomised controlled trial[J].BMJ open, 2022, 12(6):e055385.

[19]Anna - Lynne R. Adlam, Jones J S , Milton F N ,et al. The neural correlates of working memory training in typically developing children[J]. Child Development, 2022, 93(3):815-830.

[20] Byman J, Renlund J, Kumpulainen K, et al.Children's emotional experiences in and about nature across temporal–spatial entanglements during digital storying[J].Literacy, 2022, 56(1):18-28.

[21] Shuffrey L C , Sania A , Brito N H ,et al.Association of maternal depression and anxiety with toddler social-emotional and cognitive development in South Africa: a prospective cohort study[J].BMJ open, 2022, 12(4):e058135.

[22] Conroy M A , Sutherland K S , Granger K L ,et al.Preliminary Study of the Effects of BEST in CLASS—Web on Young Children's Social-Emotional and Behavioral Outcomes:[J].Journal of Early Intervention, 2022, 44(1):78-96.

[23] Garces-Bacsal R M .Diverse books for diverse children: Building an early childhood diverse booklist for social and emotional learning:[J].Journal of Early Childhood Literacy, 2022, 22(1):66-95.

[24] Bierman K L, Hall C M, Lee D L, et al.Linking intervention experiences to child outcomes in a school - based social skills training program[J].Psychology in the Schools, 2023, 60(6):1855-1876.

[25] L Xiao,Z Chu,B Wang,et al.Experimental Examination of Automatic Control Principle Based on Improved Genetic Algorithm [J].Computer Simulation , 2022, 39(9):263-267.