

## Original Paper

# Connotation and Practice Path of How Intelligent Technology Improving the Education Level of the Elderly

Xia Wenjing<sup>1\*</sup>

<sup>1</sup> Zhejiang Open University, Zhejiang Province, Hangzhou 310012, Zhejiang, China

\* Xia Wenjing, Corresponding author

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### **Abstract**

*With the development of technology, the educational ability of the elderly will be greatly improved. The improvement of the education ability of the elderly emphasizes the connotation construction and quality improvement on the basis of quantity. The value of intelligent technology to enhance the education ability of the elderly is mainly reflected in the ability of carrying, updating and sharing resources, the utilization ability of quality teachers, the supporting service ability of learning space, and the systematic evaluation ability of education for the elderly. High quality to realize elderly education development, the school management, teachers’ teaching and students learning three levels to build the intelligent technology can assign elderly education ability model, and put forward should be from the logical dimension, ethical dimension, quality dimension and evaluation degree consider intelligent technology can assign elderly education ability promotion path.*

### **Keywords**

*Intelligent Technology, Education for the Elderly, High Quality*

## **1. Introduction**

New technologies in the digital age are emerging in an endless stream. Intelligence and digitalization make the society operate more efficiently, but they also bring an insurmountable “digital divide” to many elderly people. How the elderly adapt to, who will help the elderly, this is placed in front of the

society will solve a problem. The essence of this problem is that the media information literacy of the elderly is not enough to cope with the development needs of the current digital society, and it is difficult to deal with various problems in the digital life situation. The key to solve this dilemma is to help the elderly to cross the “digital divide” by carrying out education for the elderly (OECD, 2021). This paper first explains the core essence of elderly education ability promotion and intelligent technology can assign the elderly education ability of fit, then indicates the intelligent technology can assign the elderly education ability promotion value, finally from the school management, teachers teaching and students learning three aspects to build intelligent technology can assign elderly education ability promotion model, and put forward intelligent technology can assign the elderly education ability promotion should follow the four dimensions, namely, logic, ethics, quality and evaluation degree, in order to realize the elderly education high quality development to provide useful reference.

## **2. The Core of the Education Ability of the Elderly**

The improvement of the education ability of the elderly includes two major elements, one is the education for the elderly, and the other is the improvement of the ability. In 2002, the World Congress on Aging adopted the World Health Organization’s “active aging” proposal of the initiative in the—Policy Framework for Active Aging (Active Aging: A Policy Framework). Since then, education for the elderly has gradually been paid great attention by the research community, and its research results have been emerging, actively promoting the sustainable development of education for the elderly. As an important link in the construction of lifelong education system, education for the elderly is the key issue that needs to be directly regarded and focused on in the development of education modernization. It has the following characteristics: take the elderly as the object, to improve the quality of life and life quality of the elderly as the purpose, follow the physical and mental development characteristics of the elderly, take to help the elderly “learning, music, for” teaching means, so as to meet the diversified and personalized needs of the elderly. In addition, ability refers to the effectiveness reflected in completing a goal or task, which is mainly divided into high-level ability and low-level ability (Jamy Li, 2015). Among them, high-level ability not only pays attention to the increase of quantity, but also emphasizes the improvement of quality, which is in line with the concept of high-quality development of education for the elderly in the new era. Therefore, it can be inferred that the improvement of education ability for the elderly pays attention to the connotative construction and emphasizes the increase from “quantity” to “quality”, which belongs to the category of high-level ability, and refers to the effectiveness of education for the elderly to achieve the goals set by it. In other words, the elderly education ability promotion is the elderly group lifelong learning demand oriented, learning service satisfaction for the purpose, is the transformation and upgrading of traditional elderly education, is the high quality development concept application in the field of elderly education and deepening, the final aim is to meet the needs of aging group lifelong learning and actively respond with an aging population.

### **3. Intelligent Technology Enables the Connotation of Improving the Education Ability for the Elderly**

#### **(1) Improve the capacity of carrying, updating and sharing of resources**

Due to the limitations of various factors, the traditional education for the elderly has its insufficient resource carrying capacity and the process of resource regeneration is relatively slow. Its educational resources have lagged behind the development requirements of the intelligent era, and it is difficult to achieve a compatible state. In addition, the sharing mechanism of traditional educational resources for the elderly is not perfect, and the lack of network platform support, which is an important bottleneck restricting the sharing of educational resources for the elderly. Under the background of the intelligent era, intelligent technology enables education for the elderly, which can realize the bearing, updating and comprehensive sharing of high-quality education resources for the elderly to the greatest extent, and then form an intelligent resource system with clear modules, substantial content and unique characteristics, so as to promote the fair and balanced development of education for the elderly. The current emerging intelligent cloud computing, big data, resource database and other intelligent technologies, the important role in the education of the elderly is mainly reflected in the “improvement of the resource carrying capacity and communication capacity”. The first is as the carrier and update tool of educational resources for the elderly. With the characteristics of its large reserve of resource information, intelligent technology can accommodate the knowledge and skills needed for education and teaching for the elderly, and integrate them into a number of systematic and organized modular databases, which can improve the convenience of resource acquisition. In addition, the learning career of the elderly will continue after retirement. The learning resources for the elderly cannot be used for a long time. They need to keep up with the social development, keep pace with The Times and constantly innovate. In the era of rapid updating of knowledge and skills, intelligent technology provides teaching resources in line with the education of The Times, and constantly updates the data database in time, so as to promote the elderly to keep pace with the development of The Times through the constantly updated information resources. Second, it is an effective means for the comprehensive sharing of educational resources for the elderly. With its unique development advantages, intelligent technology can build a resource sharing system, smooth the data resource sharing channel, so that all the elderly can share high-quality education resources.

#### **(2) Improve the ability to use high-quality teachers**

High-quality teachers is the key to boost the high-quality development of education for the elderly and to meet the diversified learning needs of the elderly. With its unique advantages, intelligent technology can effectively integrate the resources of education teachers for the elderly, maximize the utilization rate of teachers, and alleviate the dilemma of insufficient source of teachers. The construction of the national education teacher database for the elderly is an important embodiment. Although some provinces and cities have set up local education teachers for the elderly, the national education teachers for the elderly has not been established, which is not conducive to the sharing of education teacher

resources for the elderly among regions. The establishment of the national elderly education teachers library must leave the strong support of intelligent technology, it needs powerful cyberspace and data mining, screening and other intelligent technology to collect, integration of high quality elderly education teachers, and then according to its professional differences and different classification, and continuously update teachers' personal information, in order to accurately meet the actual demand of elderly education for teachers. In other words, the national education teacher database for the elderly established through intelligent technology is a process of integrating, classifying and updating "scholars, talented and powerful people" in different fields and majors, and accurately matching and docking with the education for the elderly (Kapetanaki Andrianthi et al., 2022). To sum up, based on intelligent technology can effectively build a high level, high level and professional national elderly education teachers, realize the elderly education quality teachers resource sharing and accurate docking, improve the use of elderly education quality teachers ability, drive elderly education sustainable and healthy development, to implement the national strategy actively coping with an ageing population.

### (3) Improve the support and service ability of the learning space

Learning space, to support the construction of the service system, aims to provide students with more comfortable, more convenient, more intelligent support services. Intelligent technology application in elderly education makes elderly education broke through the limitation of time and space, through the "online and offline, entity + virtual" learning space, for the elderly created with intelligent, human nature, universal ubiquitous learning space, which helps to enhance the personalized learning of the elderly, promote the elderly cognition, skills, emotion, and the all-round development of body and mind. On the one hand, the intelligent technology connects the "physical + virtual" learning space, making the virtual space become an effective platform for the knowledge production and communication of the elderly. With the support of intelligent technology, education for the elderly, the enable the elderly to conduct exercises and practical operation in the virtual space, provide greater fault tolerance for their learning, and eliminate some psychological burden of the elderly. For example, when using smart phones to pay, the elderly have the fear of being afraid of making mistakes or being cheated, while the virtual learning space can help the elderly overcome the "technology phobia" and solve their worries about the use of smart phones. (Nish Yu, 2022) On the other hand, intelligent technology connects the "online + offline" learning space, which has become an important way for the innovation and development of education for the elderly. Through modern intelligent technology, it can be effectively realized as follows: first, it can build an all-round, full-scene and whole-process seamless learning environment in the form of learning space; second, it creates multi-dimensional and zero-time learning service to promote accurate, open and shared personalized learning. In a word, making full use of modern intelligent technology can achieve the expansion and integration of "online + offline" learning space, form a distributed place containing different attributes, different functions and other spatial factors, provide effective and convenient material field for the learning of the elderly, and then meet the multi-level learning needs of the elderly.

#### (4) Improve the systematic evaluation ability of education for the elderly

The traditional evaluation of education for the elderly is in a static and localized state, and has not yet formed a dynamic and systematic evaluation, and even the evaluation link is missing in the whole teaching syllabus. However, intelligent technology enables the education for the elderly to create unique technical advantages for improving the evaluation of the elderly education system, contributes to the construction of a systematic comprehensive evaluation system of education for the elderly, and promotes the evaluation of education for the elderly to present a more scientific, more real, more objective and more dynamic trend. Block chain technology, for example, as a kind of distributed accounting technology, can with its marks and tampering, tracking the information of the elderly, obtain and interpret the elderly “dynamic + static + recessive, recessive” data, fully present the elderly learning process and results of learning transcripts, for the elderly draw comprehensive evaluation report, and timely feedback to the elderly, so as to realize the development of the elderly learning evaluation. In addition, the intelligent agent as a kind of active service way actively complete some operation program, with autonomy, personalized and intelligent, and intelligent situation awareness, automatic data collection, mining and analysis, to identify in the elderly education, the elderly learning process detailed data systematic, dynamic evaluation, and help elderly education teachers to further grasp the elderly students learning status, progress, etc., optimize the learning path, realize the facilitation of elderly education and personalized management. In short, the relevant intelligent technology can construct a dynamic comprehensive evaluation system for the elderly, improve the systematic evaluation ability of education for the elderly, so as to change the imperfect or even missing evaluation link of traditional education for the elderly, and provide evaluation means for creating high-quality education for the elderly.

### **4. Intelligent Technology Enables the Practical Path to Improve the Education Ability of the Elderly**

#### (1) Improve the school management ability

From the management level of schools for the elderly, enrollment, asset management, campus monitoring and other aspects can be taken as an important entry point for empowerment. First of all, the process of college enrollment for the elderly requires the intervention of intelligent technology, which plays an indispensable practical role in ensuring the process of smooth online registration for the elderly. Apply 5G key technologies to university websites for the elderly to give them faster access speed and a more optimized user experience. In other words, as one of the important key technologies of 5G, the minimalist carrier technology is more compatible, which can effectively improve the network throughput rate, reduce the interference between signals, and improve the user data rate and energy utilization rate. In addition, database, code programming and other technologies can be integrated and applied to the elderly education registration website, improve the system rate of the elderly education website, and provide the optimal experience and convenience for online registration

for the elderly.

Secondly, intelligent technology builds a smart asset management model for the elderly schools. In order to realize the monitoring and data statistics of the circulation and use of all assets in their life cycle, achieve scientific, sustainable and efficient management standards, and improve the quality level of asset management, an intelligent asset management mode can be built by relying on intelligent technology. For example, the remote asset management system for the education for the elderly should be established to quickly integrate and process asset information, and timely supervise and check the circulation of assets. In case of abnormal changes, the system will immediately generate relevant information and issue warnings, so as to avoid the loss or improper use of education assets for the elderly.

Finally, the intelligent technology supports the elderly campus monitoring. With management cloud, digital cloud and security cloud as the service platform, artificial intelligence, 5G high-speed network as the support, software and hardware integration as the means, and highly integrated as the goal, we will actively build a 5G smart campus for the elderly. In the practical application process, the efficient introduction of face recognition, one-button alarm, intelligent bracelet and other intelligent equipment, the establishment of intelligent security monitoring system and intelligent security system covering the whole school, and the construction of a credible, controllable, traceable elderly university network security system.

## (2) Improve teachers' teaching ability

From the perspective of teacher teaching, the transformation of teachers' teaching role, the diversity of teachers' teaching means and the convenience of teachers' teaching management can be taken as an important starting point of empowerment.

First, educational robots and intelligent mentors are used to help change the role of educational teachers for the elderly. On the one hand, educational robots, as an important tool to promote the development of education, can also be applied in the field of education for the elderly. On the other hand, an important application in the field of education is the intelligent tutor, which can adopt natural language processing and speech recognition technologies, and make special plans for students according to their interests, habits and learning needs. This is reflected in the practice field of education for the elderly, which is manifested as: combining intelligent mentors and data mining technology, collecting and analyzing the relevant data of the elderly, and analyzing the development rules and learning characteristics of the elderly more deeply and micro with big data to form a professional report. This makes the elderly education teachers develop from the physical educator to the dual role of the integration of virtual and real.

Secondly, intelligent technology helps teachers to modernize their teaching means. With the support of intelligent technology, the education teachers for the elderly can transform the traditional static teaching into the modern dynamic teaching by means of distance teaching, online teaching, multimedia teaching and experiential teaching. In addition, the application of intelligent teaching means will also

promote the upgrading of teachers' teaching means. On the basis of enriching the modern teaching means of teachers, intelligent technology can help the elderly education teachers to master the ability to collect and analyze all-round and process big data, and then realize the update and upgrade of teaching means.

Finally, intelligent technology enables teachers to facilitate teaching management. Build and improve the intelligent educational administration system and intelligent governance system to help teachers in classroom preparation, teaching plan formulation, problem research and teaching data sorting, so as to solve the problems of mechanization, low efficiency and insufficient participation in the traditional classroom teaching for the elderly. In addition, intelligent technologies such as learning data mining are introduced to clearly, intuitively and accurately present and connect the actual needs of the elderly, saving the steps and time of data collection and integration. Thus, should use big data technology to improve teachers' teaching management results for the purpose of accompanying data collection, integrated management and data resources open sharing, crisscross, three-dimensional interactive information circulation network, for the elderly education teachers accurately elderly teaching work to provide reliable data technical support.

### (3) Improve students' learning ability

Intelligent technology is applied to the learning level of students, and can be seamlessly integrated from three aspects: personalized learning, experiential learning, and emotional and resource needs.

First of all, adaptive learning technology helps the elderly students to personalized learning. On the one hand, the nature of adaptive learning techniques is personalization, which can provide learners with learning support in line with their individual characteristics. In the field of elderly education, the elderly students are recommended based on their correlation, width, depth, learning style and different learning resources for the subject and object relationship between the remote or online elderly students and the platform, and the similarity of resource usage.

Secondly, Virtual Reality (VR) and Augmented Reality (AR) help elderly students with experiential learning. Virtual technology is used to create intelligent, simulated, dynamic and multi-dimensional teaching situations for the elderly, so as to present knowledge more intuitively and comprehensively, increase the interest of the classroom, dilute the boredom of knowledge, and strengthen the sense of interaction and immersion of the elderly in learning.

Finally, emotional computing technology and intelligent perception technology can recommend or design accurate and most appropriate learning resources for elderly students on the basis of identifying and satisfying their emotions and emotions. On the one hand, emotion computing technology is a computer system that can perceive, recognize and understand human emotional states and make intelligent, sensitive and friendly responses to different emotions. In the field of education for the elderly, based on meaningful emotional data and the needs of the elderly as the main guidance, the algorithm to detect and understand the emotions of the elderly, should be used to obtain and analyze the emotional state of the elderly, and make the most appropriate feedback on their emotional changes, so

as to enhance the learning experience of the elderly in the real teaching environment. On the other hand, intelligent perception technology is based on physiological information recognition, natural language understanding and dynamic image processing, “human-centered intelligent information processing and control technology. Applied in the field of elderly education is embodied in: can rely on learners social characteristics perception, identification technology and various portable sensor acquisition and analysis of the elderly physiological signal, learning style and preferences, understand the elderly learning progress, cognitive and emotional state, provide elderly students with related education resources supply and accurate learning path planning services.

## 5. Conclusion

In the future, education for the elderly cannot be separated from the development environment of the intelligent era. Only relying on traditional ways will only delay the development process of education for the elderly and make it difficult to adapt to the pace of rapid social development. Especially with the rapid development of the intelligent era and the in-depth expansion of intelligent technology in the field of education, education for the elderly only follows the pace of the intelligent era to promote the qualitative improvement of their own ability. In order to effectively improve the basic ability and development ability of education for the elderly, actively explore the model of intelligent technology to improve the education ability of the elderly from the three aspects of school management, teacher teaching and students’ learning, which will promote the high-quality development of education for the elderly. Looking forward to the future, the application research of intelligent technology in the field of education for the elderly will continue to deepen, and the topic of intelligent technology and education for the elderly will also become a new focus of attention. At the same time, more professional researchers are needed to devote themselves to it and make due contributions to the high-quality development of education for the elderly in China.

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