

# Facing the Middle-Aged and Elderly Groups: Discussing High-Quality Education Development in the “15th Five-Year Plan” Period

Meng Gao\*

Renmin University of China, Beijing 100872, China

*\*Author to whom correspondence should be addressed.*

**Copyright:** © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

**Abstract:** As a critical period in the process of Chinese-style modernization, the “15th Five-Year Plan” period sees education playing an important role in talent cultivation. Against the backdrop of population aging, both the elderly group and a part of the middle-aged group on the verge of entering old age enjoy the right to education, but the participation rate remains generally low. To address this issue, this paper analyzes the current situation and problems of education for the middle-aged and elderly, identifies the challenges of digital transformation and the digital divide, summarizes the development history of representative elderly universities internationally, constructs an elderly learning service system from the perspective of policy tools, and proposes several paths for the high-quality development of elderly education under the background of digital transformation, providing reference for readers.

**Keywords:** Development of elderly education; Elderly universities; Digital transformation

**Online publication:** April 21, 2026

## 1. Research background and significance

With the deepening of population aging in China, statistical data show that by the end of 2025, the number of elderly people aged 60 and above will reach 323.38 million, accounting for as high as 23% of the national population<sup>[1]</sup>. This profound demographic change not only brings pressure to social and economic development but also provides an important opportunity for the development of elderly education.

With the development of internet technology, elderly education has gradually transitioned from the traditional model of “cultural aging” to a new stage dominated by “technological aging”. At present, the number of elderly people participating in elderly universities in China only accounts for 5.3% of the total elderly population, far lower than the national target of 20%<sup>[2]</sup>. Therefore, constructing a high-quality elderly education platform is imminent.

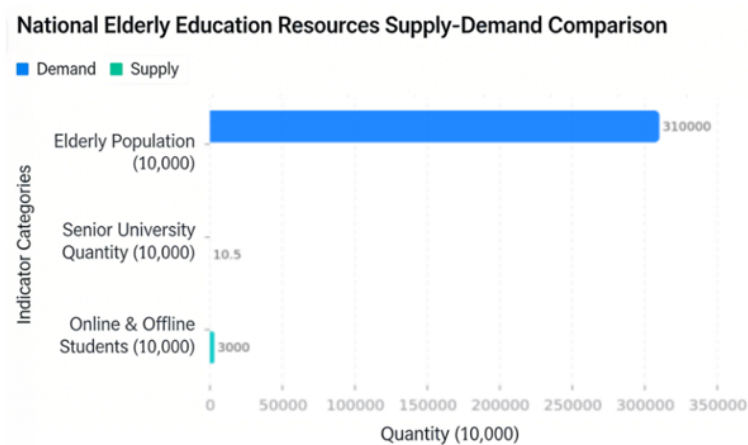
Based on sorting out relevant system theories and summarizing foreign experiences, this paper focuses on exploring how to achieve the goal of optimizing the supply of education for the middle-aged and elderly in China

during the “15th Five-Year Plan” period, aiming to contribute to promoting the national strategy of actively responding to population aging. The research mainly includes the following three aspects: addressing the problem of effective supply of elderly education, assisting the digital transformation of elderly education, and exploring a path for the development of elderly education suitable for China’s national conditions, so as to put forward suggestions for the high-quality development of elderly education during the “15th Five-Year Plan” period.

## 2. Current situation and challenges of elderly education in China

### 2.1. Analysis of the imbalance between supply and demand in education

At present, China’s elderly education faces prominent problems of insufficient total supply and structural imbalance, with certain contradictions between regions, in demand content, and in the ways and methods of meeting needs. According to incomplete statistics, there are currently more than 105,000 various types of elderly universities (schools) in China, with nearly 30 million registered students, while the number of people aged 60 and above in China has reached 310 million<sup>[3]</sup>. Calculated on this basis, it can only meet the learning needs of about 1/10 of the elderly, showing an obvious demand gap (**Figure 1**).



**Figure 1.** Comparative Analysis of National Elderly Education Resources. Note: The chart compares the supply and demand of elderly education resources, including 310 million elderly population, 105,000 elderly universities, and 30 million online and offline students.

- (1) Imbalance between supply and demand: The development of elderly education supply is uneven among regions, with huge gaps between urban and rural areas. Urban areas have abundant resources, while rural areas have extremely limited resources; surveys show that 25.9% of elderly students believe that “the school is too far away”, and many community elderly education institutions also face problems such as simple venues and a lack of facilities.
- (2) Serious homogenization of curriculum content: Existing courses are mostly concentrated in traditional fields such as leisure and entertainment, and cultural accomplishment, lacking practical characteristics, making it difficult to meet the diverse needs of the elderly. In particular, there is an insufficient supply of practical courses related to modern vocational skills and digital technology applications.
- (3) Outdated educational methods: There is insufficient use of online teaching and intelligent equipment. For example, although distance education exists, elderly education in today’s information society remains in the traditional education stage, and information policies targeting elderly education are still lacking.

## 2.2. Dilemmas of digital transformation and the digital divide

In recent years, with the development of internet technology, online education has begun to enter the lives of the elderly, and national online service platforms for elderly education have served more than 76 million elderly people. However, China's elderly digital education still faces dilemmas such as products not fully meeting the elderly's needs, low digital literacy of the elderly, and low utilization rate of digital education.

In terms of digital skills, according to survey results<sup>[3]</sup>, the digital literacy score of the elderly group in Shanghai increased from 0.4567 in 2020 to 0.5391 in 2025, an increase of 18%; but less than half of the elderly can independently complete APP registration. Among them, digital access capability accounts for more than 56% of the total digital literacy score, and "digital access capability" is still the main factor restricting the improvement of the elderly's digital literacy.

In addition, there are obvious differences among elderly groups of different age groups: elderly people aged 75 and above, those with low educational levels, and elderly living alone face greater difficulties in digital application. The ability to use digital applications (weight 61.35%) can better reflect the digital capability level of the elderly than the possession of equipment (weight 38.64%), which also reflects the capability leap process from "equipment possession" to "application ability".

Second, new problems are brought about by the development of artificial intelligence. Surveys show that only about 30% of the elderly group can simply understand AI technology<sup>[4]</sup>, and even fewer can understand knowledge such as data security and algorithm discrimination. Under the wave of AI development, improving the elderly's understanding of artificial intelligence will be an important task.

## 2.3. Correlation research between social participation and health status

Existing studies have found that elderly people who have participated in elderly education have a higher level of social participation than those who have not. In terms of specific participation methods, donating money and materials and participating in volunteer activities are the main ways for the elderly to participate (mean value 2.19), while the least participation is paying attention to social issues online (mean value 1.26).

Longitudinal studies have shown that educational level is an important factor affecting disability. Compared with non-illiterate people, illiterate people are more likely to experience disability (OR = 1.79), and participating in social activities can reduce this risk to a certain extent (12.22%). This indicates that elderly groups with low educational levels should be guided to participate in more social activities to reduce the risk of disability.

This study shows that the level of social participation of the elderly is significantly affected by elderly education, and the impact is the highest in community governance participation ( $\beta = 0.189, p < 0.01$ ). It can be seen that elderly education plays an important role in improving the elderly's ability to participate in grassroots governance. This process is a dynamic relationship model of "awareness change - condition reserve - active participation" realized based on factors such as cognitive attitude transformation, physical function recovery, mastery of survival and development skills, and enrichment of personal connections, which further improves the enthusiasm, feasibility and effectiveness of the elderly's social participation.

## 3. Comparison and reference of international elderly education experience

### 3.1. Analysis of Germany's elderly education policy system

Germany has formed a trinity elderly education policy support system of "legal guarantee - social support guarantee - lifelong learning guarantee", and has gradually formed a policy-oriented evolution path of "exploring

elderly resources - active aging - digital transformation - inclusive management”. It provides strong support for the development of elderly education in terms of laws, financial investment and lifelong education, realizing the functional transformation of elderly education from welfare supply to development empowerment, and forming a service model guided by the concept of lifelong learning, connected by intergenerational interaction, supported by information technology, and promoting development. According to surveys, the labor participation rate of the German age group (60–64) is as high as 66.7%, exceeding the average level of OECD member countries (55.9%)<sup>[5]</sup>, indicating that elderly education has made tremendous contributions to the labor market. Germany’s experience inspires China to strengthen the institutional design of elderly education: in particular, the consistency of its institutional design and the coordination between policy tools are worthy of reference.

### **3.2. Research on the school-running model of the university of the third age (U3A) in the UK**

The University of the Third Age (U3A) in the UK has its own advantages in organizational structure construction, curriculum setting, learning methods and teaching venues due to its unique school-running characteristics combining autonomous management and mutual learning. It has a streamlined management system, is separated from the government management system, is not affiliated with formal schools, and does not pursue academic standards, but emphasizes the autonomous learning of elderly students. According to statistics, by 2021, the UK U3A has nearly 1,100 branches with more than 600,000 registered members, and continues to grow at a rate of about 6.5%<sup>[6]</sup>. This school-running form based on volunteer spirit and community relations, greatly saves operating costs, improves resource utilization efficiency, and has reference value for the transformation of the organizational form of elderly education in China, especially in expanding school-running autonomy and mobilizing the learning enthusiasm of the elderly.

### **3.3. Comparison of elderly education organization models in Spain and Argentina**

Spain has a “university extension model” dominated by self-managed elderly students and a “university experience model” that allows an immersive experience of university atmosphere<sup>[7]</sup>. In terms of operation methods, it has distinctive features in system construction, organizational coordination, support conditions and quality monitoring, effectively connecting the social functions of universities with the learning needs of the elderly.

In Argentina, there is a pattern of coexistence and development between formal elderly education institutions and informal education institutions such as universities of the third age and comprehensive elderly universities. From Argentina’s practices, we can see theories at three levels:

- (1) Competence development perspective: Focus on exploring the role of elderly education in expanding the social participation space of the elderly.
- (2) Right guarantee perspective: Pay attention to the realization paths of the elderly’s right to education.
- (3) Social integration perspective: Emphasize the function of elderly education in promoting the social integration of the elderly<sup>[8]</sup>.

The above different organizational forms and theoretical propositions have certain reference significance for the development of China’s elderly education theory, and are of great importance in the participation of universities in elderly education and the construction of elderly education theory.

## **4. Construction of an elderly learning service system from the perspective of policy tools**

### **4.1. Classification and current situation analysis of policy tools**

Based on the evaluation framework for the application effect of elderly education policy tools constructed from the perspective of policy tools - the relationship model of “policy tools - learners’ needs - educational resources”, the problem of mismatch between supply and demand of elderly education services in China is mainly reflected in insufficient environmental policy tools, unreasonable supply-side policy tools, and lack of demand-side policy tools. By the end of 2023, there were nearly 76,000 elderly education institutions at all levels and types across the country, with more than 10.88 million students in school. There were 71,000 elderly schools at the county level and below, accounting for 93% of the total number<sup>[9]</sup>. The author sorted out 35 policies related to elderly education issued from 2016 to 2025, which are specifically manifested as follows:

- (1) Overuse of supply-side policy tools: Mainly concentrated on teaching facility construction and curriculum system development, accounting for more than 60%.
- (2) Obvious shortage of environmental policy tools: Imperfect system guarantee system, lack of incentive measures, and weak legal basis.
- (3) Serious lack of demand-side policy tools: Failure to effectively mobilize the learning enthusiasm and participation motivation of the elderly.

This imbalance in policy tool allocation has hindered the development of the elderly education service system, resulting in prominent contradictions between supply and demand with a gap ratio of 30%, and high-quality educational resources are mainly distributed in economically developed regions.

### **4.2. Improvement strategies for environmental policy tools**

Strengthening environmental policy tools is conducive to creating a good development atmosphere for the elderly education service system. Drawing on Germany’s three-dimensional policy tool system of “legal guarantee - social support - lifelong education”, China can improve environmental policy tools from the following four aspects:

- (1) Legal guarantee system: Accelerate the formulation of special elderly education laws and regulations, clarify the powers and responsibilities of all parties and implementation rules.
- (2) Guarantee mechanism: Form a stable growth model of financial investment and guide the participation of social forces.
- (3) Quality supervision system: Establish scientific school-running quality evaluation standards and implement regular assessment and evaluation.
- (4) Inter-departmental coordination mechanism: Build a collaborative mechanism among multiple departments, such as education, civil affairs, and health, to form policy synergy.

By improving the system design, creating favorable external conditions for the construction of the elderly education service system, and promoting the transformation from welfare-based assistance to development-oriented empowerment.

### **4.3. Collaborative development of supply-side and demand-side policy tools**

Improving supply-side policy tools requires promoting the coordinated operation of various elements within the elderly education service system, focusing on achieving:

- (1) Rational allocation of resources: Optimize the layout of institutions according to the distribution

characteristics and educational needs of the elderly population, with key support for rural areas and regions with severe aging.

- (2) Improvement of service quality: Strengthen teacher training, develop a curriculum system suitable for the elderly, and meet diverse learning needs.
- (3) Innovation of demand-side policy tools requires establishing a dynamic adjustment mechanism for the elderly education service system:
- (4) Demand feedback mechanism: Timely grasp changes in the learning needs of the elderly and flexibly adjust service content.
- (5) Publicity and guidance mechanism: Enhance the elderly's awareness of lifelong learning and stimulate their participation enthusiasm.

The coupling of supply-side and demand-side policy tools can effectively match educational resource supply with learning needs, improve the operational efficiency of the elderly education service system, and promote its transformation from “supply-oriented” to “demand-oriented”.

## **5. Paths for the high-quality development of elderly education in the digital age**

### **5.1. Digital technology drives the innovative development of elderly education**

The internet is of positive significance for promoting the high-quality development of elderly education. Based on the research results of the previous section, this paper discusses countermeasures mainly from three aspects: the use of information technology, the construction of curriculum systems, and the construction of guarantee systems:

- (1) Platform application: Build learning platforms for the elderly. In response to the above-mentioned digital divide, it is necessary to establish elderly digital learning platforms with strong usability and low access thresholds, reduce the difficulty of mastering digital skills, and enhance the elderly's affinity for digital technology. At present, the national online platform for elderly education resources serves more than 76 million users<sup>[10]</sup>, which fully reflects the important significance of information technology in expanding education supply.
- (2) Micro-level: Construct a multi-type online learning resource system. Produce teaching resources on health preservation, electronic product application, art appreciation and other aspects according to the learning characteristics of the elderly to meet the diverse needs of various elderly groups. Use big data to study the online behavior characteristics of the elderly and carry out targeted content push.
- (3) Service supply dimension: Carry out paired assistance activities for digital learning. Encourage “digital assistance” within families, “mutual assistance services” between communities, and “learning partners” among peer groups to provide personalized digital assistance for the elderly. For example, the overall digital capability index of the elderly in Shanghai in 2025 increased by about 18% compared with 2020<sup>[10]</sup>, indicating that targeted training can improve the overall digital capability of the elderly.

### **5.2. Intergenerational integration and community education system construction**

Referring to Germany's elderly education practice of “intergenerational interaction”, China should establish an intergenerational integration education model suitable for national conditions:

- (1) Establish an intergenerational education mechanism. Carry out intergenerational cooperation projects and cross-age group activities to promote knowledge transfer and experience sharing among people of

different age groups, break age boundaries, and form a complementary effect.

- (2) Improve the three-level education system. Form a trinity elderly education synergy model of “family - community - society”, integrate elderly education into community services, effectively combine elderly education with community services, and improve utilization efficiency.
- (3) Develop community digital learning platforms. Based on the multi-subject characteristics of middle-aged and elderly women in towns and villages on short video platforms, explore the establishment of community digital learning networks, create a convenient and comfortable digital learning space for the elderly, and promote social integration and personal expression.
- (4) Resource integration model: Reasonably set up community education service stations according to the distribution of the elderly population and their needs, giving priority to rural areas and regions with severe aging, so as to alleviate the urban-rural digital divide.

### **5.3. Quality evaluation and continuous optimization mechanism**

Establishing a scientific quality evaluation system is an important link to ensure the improvement of elderly education quality. Based on research findings, the following suggestions are put forward:

- (1) Establish a multi-evaluation mechanism. Formulate an evaluation index system for the development of elderly education focusing on investment, operation, effectiveness and benefits, conduct comprehensive evaluations of elderly universities regularly, and realize the normalization and standardization of evaluation.
- (2) Establish a health-based evaluation mechanism. Studies have shown that social activities can lead to a 12.22% increase in the risk of disability among people with low educational levels. Therefore, health-promoting target quality evaluation indicators should be formulated, and the physical and mental status of the elderly should be included in the evaluation.
- (3) Establish a dynamic adjustment system. Establish a two-way feedback mechanism of “information collection - education and training”, timely understand changes in the learning needs of the elderly, and adjust the content, methods and approaches of education and teaching in a timely manner according to the survey results to continuously improve and optimize the elderly education supply system.
- (4) Strengthen the application of evaluation results. Combine quality evaluation results with resource allocation and policy adjustments, establish a long-term mechanism of “evaluation - improvement - re-evaluation”, promote the transformation of elderly education from scale development to connotation construction, and ensure the achievement of the goal of high-quality development of elderly education during the “15th Five-Year Plan” period.

### **Disclosure statement**

The author declares no conflict of interest.

### **References**

- [1] Liu WY, Shao XF, 2024, 40 Years of Modernization of Elderly Education in China: Review and Prospect. *Vocational Education Forum*, 40(12): 98–106.
- [2] Fu L, Wu SX, 2024, How Can Elderly Education Promote the Social Participation of the Elderly — A Mixed

- Research from the Perspective of Participants. *Journal of Hebei Normal University (Educational Science Edition)*, 26(06): 111–120.
- [3] Cheng L, Wu F, 2024, Research on the Classification of Elderly Education Curriculum Systems. *Chinese Vocational and Technical Education*, (35): 41–46 + 67.
- [4] Peng SZ, Fu QQ, Feng XL, 2021, Educational Level and Disability Occurrence Among Middle-Aged and Elderly Residents in China: The Mediating Role of Social Participation. *Journal of Peking University (Health Sciences)*, 53(03): 549–554.
- [5] Xie ZM, Chen Q, 2025, German Experience of Elderly Education Under the Background of High-Quality Population Development and Its Enlightenment to China. *German Studies*, 40(05): 124–145 + 150.
- [6] Hao GL, Li SC, Li YX, 2024, The Development Course, School-Running Model and Enlightenment of the University of the Third Age in the UK. *Education and Vocation*, (03): 75–82.
- [7] Wei AY, Ma LH, 2024, The Organizational Model, Operation Mechanism and Experience Reference of Spanish Universities Serving Elderly Education. *Education and Vocation*, (07): 20–27.
- [8] Zhang ZX, 2025, The Organizational Model, Theoretical Perspective and Experience Reference of Elderly Education in Argentina. *Adult Education*, 45(05): 86–93.
- [9] Li X, Yang XM, 2025, The Construction of China's Elderly Learning Service System: International Reference, Practical Challenges and Development Paths. *Social Policy Research*, (04): 24–34 + 133.
- [10] Zhongyan Net, 2025 China Elderly Education Industry Market Survey and Analysis: The Number of Elderly Universities Reaches 76,000, visited on January 30, 2026, <https://www.chinairn.com/>.

**Publisher's note**

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.