

Research on the construction of a long-term mechanism for balanced allocation of lifelong education resources for the elderly under the guidance of supply-demand matching

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ABSTRACT Against the backdrop of an aging population, lifelong education for the elderly has shifted from a welfare oriented cultural activity to an important public service that actively responds to aging, builds a learning society, and enhances grassroots governance resilience. The total supply of elderly education resources continues to expand, but there are still significant differences between regions, urban and rural areas, age groups, health conditions, and digital abilities. There is also a structural mismatch between curriculum supply, venue openness, teacher allocation, platform services, and the real learning needs of the elderly. This article takes supply and demand matching as the main line, and based on sorting out policy requirements, demographic changes, and elderly learning characteristics, constructs an analytical framework that connects demand identification, resource classification, balanced evaluation, dynamic scheduling, and collaborative governance. Research suggests that the balanced allocation of lifelong education resources for the elderly should not be limited to equal distribution and project expansion. Instead, a long-term mechanism should be established around accessibility, adaptability, sustainability, and quality benefits. Precise resource allocation can be achieved through data profiling, tiered supply, cross departmental coordination, digital platform support, community embedding, and feedback evaluation. The article further proposes paths for financial security, teacher sharing, curriculum co construction, compensation for key groups, and risk prevention and control, in order to provide reference for the high- quality development of elderly education.

INDEX TERMS Supply-demand matching; Lifelong education for the elderly; Balanced allocation of resources; long-term mechanism

I. INTRODUCTION

A. RESEARCH BACKGROUND

Our country's population structure is undergoing profound changes. The seventh national census shows that in 2020, the population aged 60 and above in China was 264.02 million, accounting for 18.70% of the total population; The population aged 65 and above is 190.64 million, accounting for 13.50%[1]. The expansion of the elderly population not only brings pressure on elderly care, medical care, and caregiving, but also promotes a renewed understanding of the learning rights, development needs, and social participation value of the elderly in society. Lifelong education for the elderly is no longer just a cultural supplement to enrich retirement life, but an important path to help the elderly adapt to the digital society, maintain physical and mental health, participate in community governance, continue social

relationships, and improve their quality of life. The country actively responds to the medium and long-term planning of population aging and proposes to integrate the positive aging concept and healthy aging concept into the entire process of economic and social development. This provides a policy background for the transition of elderly education from project-based supply to institutionalized configuration[2].

B. RESEARCH SIGNIFICANCE

From a policy perspective, the work on aging in the new era emphasizes improving the elderly education service system, expanding the supply of elderly education resources, and promoting the elderly to learn and contribute; The "14th Five Year Plan" for the development of the national elderly care industry and the planning of the elderly care service system also includes elderly learning, cultural activities, and

spiritual care as important contents of building an elderly friendly society[3]. However, in practical operation, elderly education is still easily understood as enrollment in senior universities, community course scheduling, or online platform push, with resource allocation focusing on "whether there is" and "how much has been done", and insufficient attention paid to demand differences, service radius, learning barriers, continuous participation, and quality feedback. The supply side may seem lively, but the demand side may face problems such as crowded popular courses, lack of vulnerable groups, idle digital courses, and weak rural resources[4].

The significance of this study lies in shifting the allocation of lifelong education resources for the elderly from general expansion to long-term governance guided by supply and demand matching. In theory, the article combines the theories of equalization of public services, lifelong education, active aging, and resource dependence to explain why the demand for elderly education has multi-level, multi scenario, and dynamic changes; In practice, the article takes demand identification as the starting point, resource classification and evaluation indicators as intermediaries, collaborative governance and dynamic scheduling as guarantees, and proposes an operable mechanism design. Compared to simply emphasizing increasing funding, building platforms, or expanding courses, supply-demand matching orientation places more emphasis on whether resource allocation corresponds to the real population, whether course content responds to real-life situations, whether service methods cross the digital divide, and whether evaluation results feed back into the next round of configuration.

TABLE 1. Core Variables of Supply-Demand Matching

Dimension	Allocation Focus	Evaluation Signal
Demand	Identify explicit and hidden needs	Demand list and non-participation reasons
Supply	Build resource inventory and sharing rules	Resource map and service radius
Matching	Match group, content, place and method	Attendance, completion and feedback
Balance	Guarantee baseline and support weak areas	Coverage of rural and vulnerable groups
Governance	Clarify actors, data and responsibility	Annual review and resource adjustment

II. CORE CONCEPTS AND THEORETICAL FOUNDATIONS

A. CORE THEORETICAL BASIS

Lifelong education for the elderly is a learning activity aimed at the middle-aged and elderly population, which is continuously carried out in scenarios such as before and after retirement, elderly care services, community life, family support, and digital society adaptation. It includes courses offered by institutions such as senior universities, community schools, open universities, cultural centers, and libraries, as well as online learning platforms, volunteer service training, health management lectures, digital skills coaching, and intergenerational learning activities. The development plan for elderly education emphasizes the need to expand the supply of elderly education resources, inno-

vate the system and mechanism of elderly education, and increase the participation rate of the elderly; The community education policy requires relying on urban and rural communities to promote lifelong learning for all. Therefore, lifelong education for the elderly cannot be narrowed down to interest classes, but should be seen as a public learning system that covers knowledge updating, life skills, health literacy, social participation, and spiritual and cultural needs.

The supply-demand matching orientation emphasizes the shift of resource allocation from "what is supplied" to "what the elderly need, where can they obtain it, whether they can continue to participate, and how to verify the effectiveness". The demand side includes interest needs, ability needs, health needs, social interaction needs, digital adaptation needs, and re participation needs; The supply side includes funding, venues, faculty, courses, digital platforms, organizational networks, and evaluation data. Balanced allocation is not about evenly distributing resources, but rather providing differentiated compensation based on population distribution, learning disabilities, regional differences, and resource endowments, provided that basic services are accessible. This article divides the core variables into five categories: demand, supply, matching, equilibrium, and governance, as shown in Table 1.

B. THEORETICAL BASIS

The theory of active aging holds that health, participation, and security are key dimensions for improving the quality of life in the elderly. The State Council's document on developing the silver economy emphasizes the need to expand the supply of products and services around the multi-level needs of the elderly [7-9]; The Law on the Protection of the Rights and Interests of the Elderly also stipulates that the elderly have the right to continue receiving education, and the state develops elderly education. This indicates that lifelong education for the elderly is not only an educational issue, but also a matter of rights protection, social participation, and livelihood services. Foreign research also points out that elderly learning can have a comprehensive effect on social connections, cognitive maintenance, life autonomy, and psychological well-being. Based on this, this article divides the lifelong education needs of the elderly into five categories: life adaptation, health promotion, interest development, social participation, and digital integration. The structure is shown in Table 2 below.

The World Health Organization's active aging framework also considers social participation and supportive environments as important conditions for elderly health [11-12]. Therefore, balanced allocation is not an administrative average, but a dynamic arrangement based on the principles of bottom line protection, differential compensation, and quality improvement.

The matching of supply and demand also requires the introduction of a collaborative governance perspective. Lifelong education for the elderly involves education, civil affairs, health, culture and tourism, human resources and

TABLE 2. Demand Structure of Lifelong Education for Older Adults

Demand Type	Typical Learners	Main Content	Preferred Form	Support Need	Policy Implication
Life adaptation	New retirees and community residents	Digital services, finance, law	Workshop plus practice	Repeated guidance	Build basic course package
Health promotion	Older adults with chronic disease	Exercise, nutrition, mental health	Small group and consultation	Professional review	Connect education with health service
Interest development	Active older learners	Art, music, photography, reading	Class and club	Advanced pathway	Increase course levels
Social participation	Volunteers and community leaders	Governance, service, communication	Project learning	Role support	Link learning with community action
Digital inclusion	Digital-vulnerable older adults	Smartphone, anti-fraud, online service	Offline tutoring	Device and peer help	Keep offline access

TABLE 3. Demand-Side Changes and Allocation Implications

Change	Observed Feature	Learning Need	Main Barrier	Allocation Response	Expected Result
Age diversity	Young-old and oldest-old coexist	Layered courses	Health and mobility gap	Group-based timetable	Higher participation
Urban-rural gap	Resources concentrate in cities	Nearby service	Long service radius	Mobile classroom	Better accessibility
Digital society	Services move online	Digital skills	Device and confidence gap	Hybrid support	Lower digital exclusion
Family change	Smaller household support	Social connection	Loneliness and care burden	Community learning group	Stronger social ties
Health risk	Chronic disease and frailty rise	Health literacy	Professional shortage	Medical-education cooperation	Safer learning

social security, community organizations, elderly care institutions, universities, social organizations, and market entities. It is difficult for a single department to independently complete demand identification, curriculum development, teacher dispatch, venue opening, digital services, and quality evaluation. The resource dependence theory suggests that organizations achieve common goals through exchanging funds, information, venues, professional capabilities, and social trust. For elderly education, the key to collaborative governance is not simply holding joint meetings, but connecting the responsibilities, resources, and data of different entities to form a stable project generation, resource scheduling, and feedback process.

III. CURRENT SITUATION OF SUPPLY AND DEMAND OF LIFELONG EDUCATION RESOURCES FOR THE ELDERLY

A. CHANGE IN DEMAND SIDE

The changes in the learning needs of the elderly first come from changes in population size and structure. The population entering the middle-aged, young, and elderly stage has a longer education period, more digital exposure, and a more open lifestyle. They have higher requirements for course content and learning methods than the traditional framework of "singing, painting, calligraphy, and health lectures"; Elderly people who are elderly, disabled, living alone, and in rural areas are more concerned about health care, life safety, digital services, and emotional support. On the demand side, there are also characteristics such as the miniaturization of family structure, the widening of intergenerational support distance, and the rapid popularization of online services. Elderly people need to regain their ability to handle affairs, make information judgments, and social connections through learning. To avoid treating the elderly population as homogeneous, this article summarizes the main changes in demand side as shown in Table 3.

The change in demand side indicates that the focus of elderly education should not only be on the number of applicants, but also on who has not registered, why they

cannot register, which courses have the largest continuous gap, and which groups need to be actively reached. Young and energetic elderly people usually have strong proactive learning abilities and are willing to choose high-quality courses across regions; Older people rely more on familiarity with the venue, fixed teachers, and low-intensity arrangements; Rural elderly and those with weaker digital abilities need more offline tutoring; Elderly people who have lost their only child, live alone, or suffer from chronic illnesses may view learning activities as an important source of emotional support and social companionship. If the configuration indicators only count the number of classes and participants, they will ignore the threshold differences behind the demand.

B. SUPPLY SIDE PATTERN AND ISSUES

The supply side resources are mainly composed of public universities for the elderly, community education institutions, open university system, public cultural venues, elderly care service institutions, grassroots party mass service centers, social organizations and Internet platforms. Its advantages lie in the diversity of subjects, rich scenarios, and constantly expanding types of courses; The shortcomings lie in strong departmental boundaries, scattered resource lists, inconsistent evaluation criteria, and insufficient teacher sharing. In many areas, the venues are idle during the day and crowded at night. Professional teachers are concentrated in urban areas, community volunteer teachers lack training, online courses are repeatedly constructed, and there is a lack of stable funding and data tools at the grassroots level. As a result, an increase in the total amount of resources does not necessarily lead to balanced improvement.

The supply of elderly education still tends to be more project-based and less institutionalized. Some places rely on short-term activities, special funds or demonstration projects to promote, and it is difficult to continue the curriculum and teaching staff after the project is completed; Some platforms pursue the number of online courses, but have not

formed an aging friendly interface, learning companionship, and offline tutoring; Some communities have insufficient understanding of the learning needs of the elderly and can only arrange courses based on existing teachers. Supply side resources need to be reclassified by function rather than simply arranged by administrative affiliation. This article categorizes the supply of resources into seven types: basic support, course content, faculty support, venue facilities, digital platforms, organizational networks, and evaluation data, as shown in Table 4.

TABLE 4. Supply Resources and Allocation Functions

Resource Type	Main Carrier	Allocation Function
Basic funds	Fiscal budget and project funds	Guarantee baseline service and compensation
Courses	University, community and platform resources	Provide layered and scenario-based content
Teachers	Professionals, retirees and volunteers	Support instruction, tutoring and review
Venues	Schools, libraries and community centers	Reduce distance and improve accessibility
Digital platform	Learning portal and data dashboard	Connect reservation, record and feedback
Organization network	Departments, communities and social groups	Coordinate resources and reach hidden needs

C. MISMATCH PERFORMANCE BETWEEN SUPPLY AND DEMAND

Firstly, there is a regional mismatch. Urban senior universities and high-quality public cultural resources are concentrated, making it difficult to find a popular course; Rural areas and suburban areas may lack stable teachers, fixed venues, and sustained funding. Research on elderly learning abroad has also found that learning participation is influenced by factors such as transportation distance, course costs, health status, and social support [13]. If resource allocation is still calculated based on the average number of institutions or administrative levels, areas with low population density but large service radius are easily underestimated, and elderly people with limited mobility and those in remote villages find it more difficult to enter the learning system.

Secondly, there is a mismatch in the content. The traditional advantageous courses of elderly education are concentrated in fields such as calligraphy and painting, vocal music, dance, photography, and health preservation. These courses are still necessary, but they can no longer cover new demands such as digital life, smart devices, network security, chronic disease management, legal rights, family communication, volunteer service, and re employment consultation. Some course names are new but the content is old, lacking contextualized task design, such as teaching the elderly to download applications, but not covering practical scenarios such as registration and payment, transportation, fraud identification, and privacy protection. Content mismatch can make elderly people feel that the course is lively but not solving problems, reducing their willingness to continue learning.

Thirdly, there is a mismatch of methods. Online courses have expanded resource coverage, but may exclude elderly people with weak digital abilities, impaired vision and

hearing, lack of equipment, or lack of family support. Offline courses have the advantages of companionship and interaction, but are significantly limited by venue, time, and transportation. A more reasonable approach is to choose a mixed supply based on the population and content: basic digital skills, health management, and rights protection are suitable for small class offline tutoring and online review; Interest based courses can be displayed online and practiced offline; The elderly and those with limited mobility require community access, mobile classrooms, or embedded services in elderly care institutions.

IV. RESOURCE ALLOCATION LOGIC UNDER SUPPLY-DEMAND MATCHING ORIENTATION

A. REQUIREMENT IDENTIFICATION AND PROFILING MECHANISM

The first step in supply-demand matching is to establish a real, dynamic, and renewable demand identification mechanism. A single questionnaire and registration record can only reflect those who have already entered the learning scene, and cannot represent the entire elderly population. It is necessary to integrate the community population ledger, elderly care service evaluation, cultural activity records, on-line learning behavior, volunteer service files, and grassroots visit information in compliance, forming a demand profile that does not involve excessive collection. The content of the portrait should include age group, health status, transportation conditions, digital abilities, learning interests, caregiving responsibilities, participation frequency, and reasons for non participation. A long-term mechanism matrix can be constructed around requirement identification, resource matching, service delivery, and feedback improvement, as shown in Table 5.

The demand portrait cannot become a label management, let alone solidify the elderly as a "low ability group". The learning needs of the elderly are generative: as digital skills improve, they may shift towards short video creation, on-line volunteer services, and community discussions; When the health condition changes, there may be a shift from interest courses to rehabilitation knowledge and psychological support. Therefore, demand identification should be updated quarterly or semi annually and corrected through community meetings, student representatives, teacher feedback, and family feedback. Educational institutions provide course data, civil affairs and health departments provide service scenario information, community organizations provide clues for non participating groups, platforms provide learning behavior statistics, and ultimately form comprehensive judgments that can be used for resource scheduling.

B. RESOURCE CLASSIFICATION AND ADAPTATION MODEL

The adaptation of resources should follow the principles of prioritizing basic guarantees, compensating key groups, sharing high-quality resources, and supporting digital tools. Basic guarantees include regular learning entrances, in-

TABLE 5. Long-Term Mechanism Matrix for Balanced Allocation

Mechanism	Core Task	Responsible Actors	Output
Demand identification	Collect explicit and hidden needs	Community, education and civil affairs departments	Demand profile and priority list
Resource inventory	Map funds, venues, teachers and courses	Education, culture, health and community actors	Shared resource catalogue
Matching allocation	Connect learners with proper services	County platform and community learning points	Course plan and service schedule
Quality assurance	Review content and monitor process	Education bureau and professional institutions	Quality report and correction list
Feedback optimization	Use evidence for next allocation	All actors and learner representatives	Annual adjustment plan

formation dissemination channels, and basic courses that every community or district should have; Key compensation is targeted towards rural areas, the elderly, those living alone, those on the brink of disability, those facing economic difficulties, and digitally disadvantaged elderly individuals; High quality sharing emphasizes the extension of courses and faculty from universities, open universities, public cultural institutions, and professional associations to the grassroots level; Digital tool support is used for course scheduling, learning records, teacher scheduling, and effectiveness evaluation. Resource adaptation is not about delivering all courses to all places, but about allowing each type of resource to enter the most needed and effective scenarios.

In the adaptation model, demand intensity and supply accessibility should enter the decision-making process simultaneously. Regions with high demand intensity but low supply accessibility belong to priority compensation areas, and should increase fiscal tilt, mobile courses, and remote tutoring; Regions with high demand intensity and high supply accessibility belong to the quality improvement zone, and the curriculum level and teacher structure should be optimized; Regions with low demand intensity but sufficient supply need to undergo demand re identification to avoid resource idleness; Areas with low demand intensity and weak supply should retain basic entrances and identify potential demand through community visits. This can avoid simply understanding resource allocation as 'who signs up more for whom', and also prevent turning a blind eye to the silent needs of vulnerable groups.

V. LONG TERM MECHANISM CONSTRUCTION PATH

A. MULTI SUBJECT COLLABORATIVE GOVERNANCE MECHANISM

To establish a long-term mechanism, it is necessary to first clarify the collaborative responsibilities of multiple parties. The education department is responsible for planning elderly education, curriculum standards, learning platforms, and coordinating educational resources; The civil affairs department is responsible for elderly care service scenarios, identification of elderly people with special difficulties, and community service integration; The health department is responsible for health education, chronic disease management, and psychological support resources; The cultural and tourism department is responsible for the opening of cultural venues and public cultural courses; The human resources

and social security department can provide vocational skills, volunteer services, and re participation support; Street communities are responsible for collecting demands, organizing mobilization, and coordinating venues; Universities, open universities, and social organizations undertake curriculum development, faculty training, and project services. The key to multi-party collaboration is to form a responsibility list, resource list, and requirement list, rather than temporary splicing activities.

B. FUNDING GUARANTEE AND RESOURCE INTEGRATION MECHANISM

The funding guarantee should shift from short-term project funds to a combination of basic public services and special compensation. Basic funds are used to ensure community learning points, basic courses, public welfare teachers, and platform operation and maintenance; Special funds are used to support rural areas, remote communities, the elderly, digitally disadvantaged groups, and pilot innovations. Financial funds should not be allocated solely based on the number of students, otherwise it may encourage institutions to pursue popular courses and register frequently, while ignoring vulnerable groups with higher service costs. A more reasonable allocation method is to include the permanent elderly population, service radius, proportion of key populations, course quality, participation rate, and feedback improvement in the comprehensive calculation.

Resource integration requires the activation of existing resources. Primary and secondary schools, vocational colleges, universities, cultural centers, libraries, sports venues, party and mass service centers, and elderly care service facilities may all become learning spaces for the elderly at specific times. Open venues should simultaneously address issues of safety responsibility, management personnel, equipment maintenance, and time coordination, rather than just publishing an open list. In terms of teaching staff, a combination of full-time and part-time teachers can be established to include retired university teachers, vocational college teachers, medical staff, social workers, legal workers, digital volunteers, and outstanding elderly students in the training system. In terms of courses, basic course packages, local characteristic course packages, and advanced course packages can be established for the community to combine and use according to their needs.

C. DIGITAL PLATFORM AND QUALITY ASSURANCE MECHANISM

The role of digital platforms is not just to play courses, but to connect needs, resources, and evaluations. The platform should have functions such as course reservation, nearby inquiry, learning records, aging friendly interface, offline activity reminders, volunteer assistance, and feedback collection. For elderly people with weaker digital abilities, the platform must be equipped with offline service windows, telephone registration, and community counseling, and cannot use "not knowing how to use the platform" as a reason for exclusion. The platform should also support both the teacher end and the management end, helping managers to see the supply, registration status, attendance changes, and satisfaction feedback of different community courses, and thus carry out resource scheduling.

Quality assurance should be carried out from three aspects: entry, process, and outcome. Establish a course review and teacher training mechanism at the entrance to prevent exaggerated promotion, disguised marketing, and the entry of pseudoscientific content; On the process side, tracking is conducted through listening records, student feedback, classroom safety, material suitability, and interaction; The results focus on learning acquisition, improvement of life skills, changes in social participation, and subsequent needs. For courses such as health, finance, fraud prevention, law, and digital security, professional department review should be introduced. For interest courses, attention should also be paid to difficulty stratification and sustained paths to avoid long-term low-level repetition.

D. SPACE NOISE REDUCTION AND ATMOSPHERE OPTIMIZATION DESIGN

A quiet, comfortable, and low disturbance spatial atmosphere is the foundation for the infiltration of aesthetic education and the landing of artistic healing. This space focuses on noise reduction and atmosphere optimization design. In terms of noise reduction design, the walls are made of sound-absorbing diatomaceous earth and soft pack sound-absorbing materials, the ground is covered with soundproof and anti slip adhesive, and the doors and windows are designed with sound insulation and sealing to effectively isolate external noise; Reasonably divide the space into dynamic and static areas, physically isolate the dynamic creation area, communication area from the static healing area, and exhibition area to avoid internal noise interference.

D. COMMUNITY EMBEDDING AND INTERGENERATIONAL LEARNING MECHANISM

The most stable scenario for lifelong education for the elderly is in the community. The community is not only a demand discovery end, but also a resource delivery end and feedback end. Embedding learning points into communities can reduce transportation costs, enhance support from acquaintances, and facilitate the integration of education with elderly care, health, culture, and volunteer services. Commu-

nity embedding does not mean that all courses are run by the community itself, but rather that the community undertakes the organization and connection functions, bringing external high-quality courses, professional teachers, and public venue resources into the daily life radius of the elderly. For elderly people with mobility difficulties, supplementary measures can be provided through building learning groups, home caregiver training, and micro classrooms in elderly care institutions.

Intergenerational learning is an important way to alleviate the digital divide and promote social integration. Young volunteers, college students, community workers, and elderly students can engage in collaborative learning around topics such as smartphones, online fraud prevention, family communication, local cultural records, and community volunteer services. Co learning is not just about teaching the elderly how to use mobile phones, but about incorporating their life experiences, handicrafts, local memories, and community identity into the learning process. This can not only enhance the affinity of digital skills training, but also strengthen the sense of value and social participation willingness of the elderly.

E. FEEDBACK EVALUATION AND DYNAMIC OPTIMIZATION MECHANISM

A long-term mechanism must form a closed loop. After each round of courses, data should be collected from aspects such as registration, attendance, completion, satisfaction, ability changes, reasons for non participation, and follow-up needs, and the results should be returned to the course developers, teachers, community, and management departments. Feedback evaluation cannot rely solely on online scoring, as many elderly people are not accustomed to or do not know how to fill out electronic questionnaires. A combination of classroom interviews, telephone follow-up, community discussions, family feedback, and observation records should be used, especially to track those who have not been continuously involved.

Risk prevention and control are also necessary in the operation of long-term mechanisms. Elderly education involves funding, facilities, faculty, data, health and safety, and commercial cooperation. Without boundaries, there may be issues such as course marketing, data abuse, unclear site safety responsibilities, unstable volunteer services, and neglect of vulnerable groups. Risk identification should be incorporated into the mechanism design, with different entities assuming corresponding responsibilities, as shown in Table 6 below.

TABLE 6. Risks and Governance Responsibilities

Risk	Manifestation	Main Actor	Control Measure
Commercialization	Public courses become sales channels	Education and market regulators	Access review and complaint handling
Data misuse	Excessive collection of personal information	Platform and community	Minimum data and consent rules
Safety accident	Venue, travel or health emergencies	Venue manager and organizer	Safety plan and emergency response
Resource capture	Popular groups occupy most resources	County coordination platform	Quota and compensation mechanism
Low quality teachers	Repeated courses and weak teachers	Education department	Teacher training and course exit rule

VI. IMPLEMENT SAFEGUARDS AND RISK PREVENTION AND CONTROL MEASURES

A. INSTITUTIONAL GUARANTEE AND ORGANIZATIONAL OPERATION

Institutional safeguards need to address the issues of "who is responsible, where money comes from, how resources are allocated, and how effectiveness is evaluated". A joint mechanism for balanced allocation of lifelong education resources for the elderly can be established at the county and district levels, led by the education department with the participation of departments such as civil affairs, health, culture and tourism, human resources and social security, finance, and community governance. Regular demand analysis, resource catalogs, and annual key tasks will be released. International experience also indicates that age friendly labor and social participation policies require the coordinated promotion of education, employment, health, and community services. In terms of organizational operation, a system for project application, course review, teacher registration, process supervision, and performance evaluation should be established, and elderly education should be included in the evaluation of learning oriented cities, elderly friendly communities, and basic public services.

B. KEY POPULATIONS AND REGIONAL COMPENSATION

The difficulty of balanced configuration lies in identifying and compensating for silent needs. Older people who are elderly, living alone, on the edge of disability, in rural areas, facing economic difficulties, in ethnic minority areas, accompanying elderly people, and those with weak digital abilities are often not the most active individuals in the registration system, but they are the ones who need to be actively covered by public services. The Healthy Aging Action emphasizes the need to improve the functional abilities and supportive environment of the elderly, which requires the integration of elderly education with health management, long-term care, community mutual assistance, and family support. For key populations, small-scale, close range, low threshold, and high companionship service methods can be adopted; For areas with weak resources, compensation can be provided through mobile teachers, regional shared courses, remote live tutoring, and financial transfer payments.

VII. CONCLUSION

The balanced allocation of lifelong education resources for the elderly under the guidance of supply and demand matching essentially connects the real learning needs of the elderly, public resource endowments, and multi-party governance capabilities. This article believes that the high-quality development of elderly education cannot rely solely on expanding the scale of elderly universities or increasing the number of online courses, but should establish a long-term mechanism that connects demand identification, resource classification, balanced evaluation, collaborative supply, quality assurance, and feedback optimization. Elderly learning has both interest development and spiritual and cultural attributes, as well as digital integration, health promotion, social participation, and rights protection attributes. Only by incorporating different age groups, health status, regional conditions, and digital abilities into the configuration logic can we avoid egalitarianism and popular orientation, and promote the transition of elderly education from opportunity supply to effective supply.

In subsequent practice, the county and district should be taken as the overall planning unit, the community as the basic entrance, the digital platform as the supporting tool, public cultural and educational resources as the supply basis, and social organizations and volunteers as supplementary forces to form a normal operation mechanism. The construction of an education powerhouse and lifelong learning for all requires the education system to better serve the full life cycle development of people [19], while the International Recommendations for Adult Learning also emphasize that learning opportunities should be inclusive, sustainable, and quality assured [20]. Therefore, the allocation of lifelong education resources for the elderly should adhere to bottom line fairness, differential compensation, quality orientation, and dynamic optimization. This article is mainly based on policy texts, theoretical literature, and mechanism analysis.

In the future, it can be combined with regional surveys, curriculum data, and learning behavior data to empirically test the matching efficiency of different regions, different populations, and different supply modes.

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cases, sponsor and financial support acknowledgments are placed in the unnumbered footnote on the first page, not here.

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