Exploring Pathways of Elderly Education Support Services: A Case Study of Yunnan Open University for the Elderly Based on the Three Dimensions of Learning Theory

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ABSTRACT—*Guided by the Three Dimensions of Learning theory, this study focuses on the "knowledge acquisition process" and the "interaction process" of older learners. It examines learning barriers faced by older adults across the cognitive, emotional, and social dimensions. Drawing on the practical experience of Yunnan Open University for Older Adults, an empirical analysis of learning support services in elderly education was conducted. The findings reveal three key factors constituting major obstacles to learning among older adults: the misalignment between learning content and actual needs, insufficient intrinsic motivation, and the detachment between learners and learning contexts. To optimize learning support services in elderly education, institutions should adopt holistic strategies, including diversifying learning content to better meet learners' needs, strengthening emotional support mechanisms, and fostering interactive learning environments.*

Keywords—Elderly online Education, Three Dimensions of Learning Theory, Learning Support Services

1. INTRODUCTION

It is projected that by 2050, the global population aged 65 and above will more than double, accounting for 26% of the total world population (Kim, Woo, & Uysal, 2015). In China, the elderly population is expected to reach approximately 280 million by 2025, representing nearly 20% of the total population. According to United Nations projections, China's elderly population will exceed 480 million by 2050, making up 36.5% of the national population (Yao & Hou, 2019). China already ranks first worldwide in terms of the size of its elderly population. With the "second baby boom" generation (those born between 1962 and 1975) reaching retirement age beginning in 2022, the pressures of population aging will intensify further (Chen, 2022). According to the United Nations' criteria, when individuals aged 60 and above account for more than 10% of a nation's total population, that country or region is considered to have entered an aging society. With the intensification of population aging, an increasing number of older adults are demonstrating a strong demand for education, posing significant challenges to elderly education. The National University for the Elderly, relying on the open university system, has established 44 provincial-level branch universities for older adults and 68,000 grassroots teaching sites. It has built a nationwide public service platform for elderly education, bringing together 441,000 courses and serving over 10 million registered users. By early 2024, Yunnan Open University for Older Adults had provided offline educational services to more than 52,000 learners and registered over 105,000 online participants. Such a large-scale operation urgently calls for the establishment of a high-quality learning support service system in elderly education, in order to meet older learners' educational needs and to enhance their capacity for lifelong learning.

2. LITERATURE REVIEW

2.1 Three Dimensions of Learning Theory

The Three Dimensions of Learning Theory was first proposed by the renowned Danish educator Knud Illeris in his monograph The Three Dimensions of Learning. Illeris takes the definition of learning as his logical point of departure,

defining learning as "any process that in living organisms leads to relatively permanent capacity change, and which is not solely due to biological maturation or aging" (Knudz·Yileresi, 2014). On this basis, Illeris advanced the theoretical framework of the Three Dimensions of Learning—comprising "two processes" and "three dimensions" (see Figure 1).

The "two processes" address the question of *how learning takes place*. Illeris posits that all learning encompasses two distinct processes: the interaction process between the individual and the surrounding environment and the internal acquisition process of the mind. The former is relatively visible and can be readily perceived, whereas the latter involves internal mental acquisition and processing, which, due to its implicit nature, is less easily discernible. These two processes may occur simultaneously or at different times. Building on the fundamental processes of learning, Illeris further proposed that learning comprises three dimensions: content, incentive (motivation), and interaction (see Figure 1).
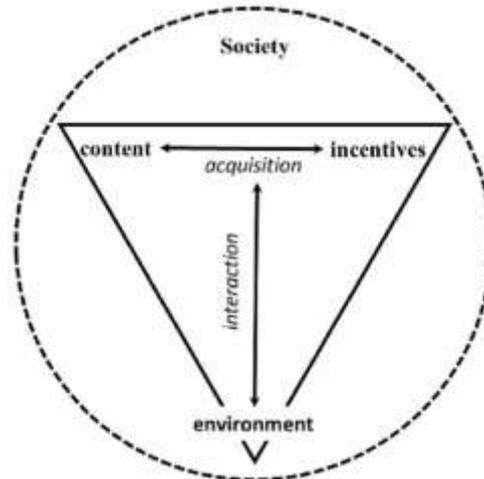

Figure 1: The three dimensions of learning (Illeris, 2007, p. 23).

Through a review of the relevant literature, current studies on learning support services in elderly education can be broadly categorized into three directions:

First, research on the characteristics of older learners. Wu Yue and other scholars argue that older adults' slower reactions and declining memory render their psychological and emotional well-being particularly important in the context of elderly education (Wu, 2020). Zhu Jing and colleagues found that older learners exhibit psychological needs such as the pursuit of spiritual fulfillment and the construction of interpersonal interactions (Zhu, 2024). Zhang Chunyan and others compared older learners with general adult learners, identifying differences in learning purposes, learning needs, learning styles, and learning capacities (Wu, 2020; Zhu, 2024).

Second, exploratory studies on pathways for developing learning support services in elderly education. Zhu Jing and others, from the perspective of learning support, proposed specific measures such as diversifying learning resources, expanding course content, and establishing both online and offline learning communities (Zhu, 2024). From the perspective of stakeholders, Wu Yue suggested that learning support services for elderly education should not be limited to the provision of resources by schools, but also require the involvement of communities, social organizations, and older learners themselves. He proposed constructing a service-oriented system of elderly education with educational institutions as the leading body, communities as the foundation, social organizations as the link, and information technology as the support (Wu, 2020). Some scholars analyzed the development status of universities for older adults in Ningbo, Hefei, and Tonghua. Based on their examination of existing problems, they proposed context-specific and localized strategies ("one place, one policy") for constructing effective learning support pathways (Yue, 2023, Fan, 2022).

Third, research on the distinctive features of open and distance education for older adults. Driven by both policy orientation and strategic transformation, open universities have actively established universities for older adults by leveraging their systemic advantages and expertise in online education (Zhong & Zha, 2019). Scholars in the field of open education, building on the traditional strengths of learning support in open education, have focused on how to provide "age-friendly" learning support services. For instance, Yue Jun of Taiyuan Open University (Yue, 2023) applied the Kano model to analyze the support service needs of elderly learners in open education. Hu (2023) examined elderly education from the perspective of inclusive education, explored models of open university education tailored to the needs of older adults. He proposed enriching theoretical curricula and improving practical teaching so that older learners could enhance their sense of self-value and identity through educational activities.

2.2 Learning Support Services

Research on Domestic Practices of Learning Support Services: Empirical case studies have been conducted by the Open University of China and local open universities, drawing on their own practices in providing learning support services for open education. Numerous studies on learning support services exist, focusing mainly on themes such as the concept and connotations of learning support services, the systems or frameworks of learning support services, models of learning support services, and standards for learning support services. However, the conclusions and perspectives of these studies are largely proposed from the standpoint of service providers. Research that truly investigates learners' experiences of learning support services, or that constructs and optimizes learning support services from the perspective of learners' needs, remains limited (Liu, 2020).

Comparative Research between China and Abroad: By examining foreign open education institutions such as the UK Open University, scholars have compared the construction of learning support service systems in China's open education (Zhao & Zhang, 2023). Liu Qian, Zhang Jiani, and others, through their study of the UK Open University's learning support services, and grounded in the "student first" principle, concluded that it is necessary to implement key checkpoints, improve and integrate support service processes, uphold openness and inclusiveness while extending the scope of support services, and balance both academic and non-academic support (Liu & Sun, 2021; Zhang & Jiang, 2019).

Scholar Simpson (Zhou & Sun, 2021), in his work, classified learning support services into academic and non-academic categories. Tian Mengmeng (Wang et al., 2017) and colleagues, after reviewing 20 years of domestic research papers, found that the academic community's research focus remains primarily on academic learning support services, with relatively little attention to non-academic support. Although the volume of research and output on learning support services is considerable, the practical effectiveness of these services in frontline open universities is not particularly satisfactory (Wang, 2017). Moreover, from the perspective of support service elements, scholars have summarized learning support services into four dimensions: cognitive support, management support, emotional support, and technical support (Tian et al., 2023). A review of the literature indicates that current scholarship has paid relatively little attention to "management support" and "emotional support."

Conceptualization in This Study: Based on a review of the current state of research and drawing upon the Three Dimensions of Learning theory, this paper defines "learning support services" as the totality of information, resources, personnel, and facilities provided by Open Universities for Older Adults to support online learning among elderly learners. These services are grounded in information technology for two-way communication and primarily rely on interpersonal interactions between teachers and students, as well as among students themselves. Their aim is to guide, assist, and promote learners' self-directed study while enhancing the quality and effectiveness of open education teaching. Specifically, learning support services encompass three aspects: content support, emotional support, and environmental support.

3. RESEARCH DESIGN AND DATA ANALYSIS

3.1 Research Design

Under the guidance of the Three Dimensions of Learning Theory, this study employed the method of literature analysis to construct the basic dimensions of the measurement scale, namely learning content, emotional experience, and interactive communication (see table1). In addition, focus group discussions were organized with older learners, practitioners in elderly education, and experts to refine the scale dimensions and finalize the questionnaire items. The questionnaire adopted a five-point Likert scale, where 1 indicated "strongly disagree," 2 "disagree," 3 "neutral," 4 "agree," and 5 "strongly agree."

Table 1: Questionnaire Dimensions and Items

Construct	Items
learning content	1.The course content design (e.g., smartphones, health knowledge) is closely aligned with my daily life needs.
	2.The course difficulty matches my learning ability and capacity for comprehension (e.g., moderate pace, clear explanations).
	3.The course formats (e.g., videos, manuals, hands-on demonstrations) facilitate my understanding and mastery.
emotional experience	4.The knowledge acquired can be directly applied to real-life situations (e.g., medical registration, fraud prevention).
	5. I feel respected and supported with patience from the instructors during the learning process.
	6. The class atmosphere makes me feel relaxed and free of pressure.
	7. My learning achievements receive recognition (e.g., showcasing works, receiving certificates).
	8. The Open University for Older Adults pays attention to my emotional changes and provides support.
Interactive communication	9. Teachers respond to my questions in a timely manner.
	10. Communication and cooperation with classmates are frequent and pleasant.
	11. I have opportunities to share personal experiences and skills.
	12. Extracurricular social activities are organized regularly (e.g., tea gatherings, interest groups).

This study conducted a sample survey in June 2025 using the online platform Wenjuanxing (Questionnaire Star)

among currently enrolled learners at Yunnan Open University for Older Adults. The questionnaire was administered anonymously to ensure authenticity and reliability. A total of 550 questionnaires were collected, of which 511 were valid after eliminating invalid responses, yielding a valid response rate of 92.3%.
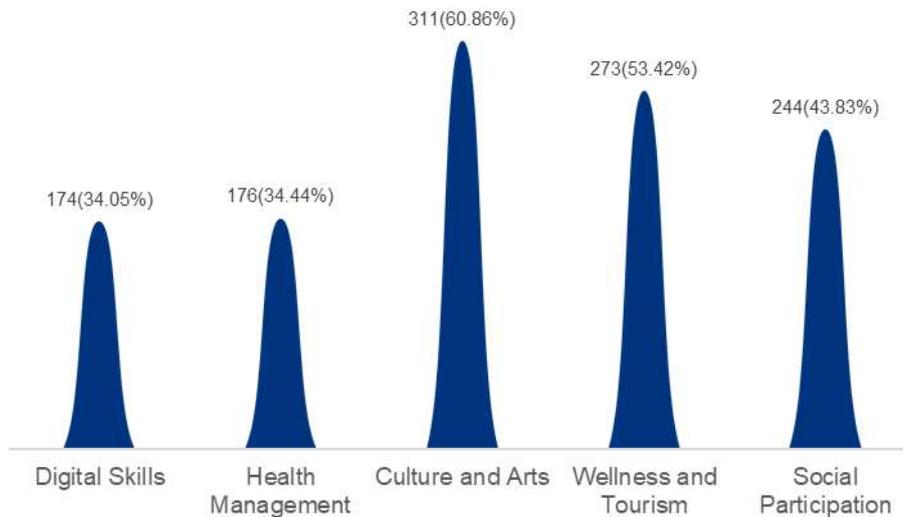

Figure 2: The Most Favored Course Categories

Among the respondents, 242 were male and 269 were female, with slightly fewer men than women. The majority of participants fell within the age groups of 51–55 (28.96%), 56–60 (37.77%), and 61–65 (19.57%), see Figure 2: The Most Favored Course Categories. In terms of educational attainment, 56.36% had qualifications ranging from high school to junior college. The most favored course categories were cultural and artistic courses (60.86%), health and tourism courses (53.42%), and social participation courses (43.84%), see Figure 3: Respondents' Age Distribution.
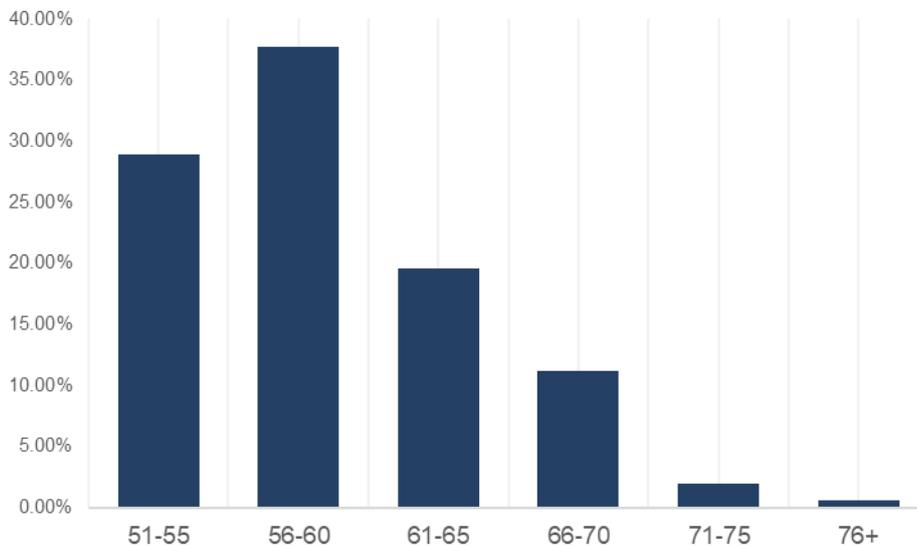

Figure 3: Respondents' Age Distribution

The respondents' evaluations of the three dimensions—learning content, emotional experience, and interactive communication—were as follows: the mean score for interactive communication was 4.10, for emotional experience 3.93, and for learning content 3.83 (see Table 2 for descriptive statistical analysis).

Table 2: Descriptive Statistical Analysis

Dimension	*N*	*Min*	*Max*	*Mean*	*Std. Deviation*	*Variance*
Learning Content		2.25	5.00	3.82	0.57	0.33
Emotional Experience	511	2.00	5.00	3.93	0.55	0.31
Interactive Communication		1.75	5.00	4.10	0.52	0.27

4. ANALYSIS OF LEARNING BARRIERS AMONG OLDER LEARNERS

4.1 Misalignment between Learning Content and Actual Needs

As an integral component of the lifelong education system, the design of elderly education curricula should be guided primarily by the real needs of older adults. However, in China, there is currently a significant mismatch between the content of elderly education programs and the authentic demands of older learners. This misalignment not only reduces the efficiency of resource utilization but also constrains the realization of the social value of elderly education. At present, the design of curricula tends to follow a supply-driven model, rather than accurately addressing the needs and pain points of older learners from the demand side. This reflects an institutional imbalance in the allocation of educational resources. Courses are still dominated by traditional cultural arts, such as music, painting, and calligraphy, whose learning outcomes are difficult to apply to real-life situations. The inability to translate learning into practical problem-solving inevitably diminishes participation. With the evolving needs of older adults for age-friendly education, more practical and individualized courses—such as English, maternal and child care, and travel planning—are increasingly favored by older learners.

4.2 Insufficient Intrinsic Motivation to Learn

Older adults often lack sufficient intrinsic motivation in acquiring new skills, which can be attributed to two primary factors. First, age-related physiological challenges such as memory decline and slower reaction times exacerbate the difficulty of mastering complex skills. For instance, learning to operate a smartphone requires handling multiple steps simultaneously, which can lead to frustration and eventual withdrawal from learning. Second, after retirement, older adults typically experience a sharp decline in social participation, resulting in reduced self-efficacy, which is a key factor leading them to abandon continuous learning. Under the influence of these two factors, older learners tend to reinforce their self-identification with the "elderly" label. Traditional courses are insufficient to stimulate their learning motivation, which may cause an identity crisis as learners and foster internalized negative self-suggestions of "I do not want to learn."

4.3 Alienation between Learners and Learning Contexts

The effectiveness of older adults' learning is highly dependent on contextual embedding—that is, their learning outcomes are closely tied to specific environments. For example, when teaching the abstract concept of "privacy settings on smartphones," learners may struggle to grasp the content within a short time. However, if the instruction is situated in a simulated scenario such as "a grandson being scammed during a video call," the learning effect would be significantly enhanced. Nevertheless, the existing curriculum system suffers from multiple fractures in interaction. At the physical-context level, most elderly education centers conduct classes during weekdays, which often conflicts with older adults' caregiving responsibilities for grandchildren. At the social-context level, the problem of unidirectional knowledge transmission is prominent. Instructors are generally younger than the learners, and while older adults acquire new skills such as smartphone operation from younger teachers, their own life experience is overlooked, leading to a diminished sense of dignity in participation. This alienation between learners and contexts essentially reflects a neglect by learning support providers of the life-worlds of older adults. When learning becomes detached from meaningful contexts, participation is inevitably reduced to a mere formality.

In sum, older learners face three interrelated types of barriers in the learning process: the misalignment between curriculum content and real-life needs, insufficient intrinsic motivation, and the alienation between learners and their learning contexts. These obstacles not only weaken the effectiveness of elderly education but also undermine learners' sense of identity, participation, and value recognition. Addressing these challenges requires a systematic reconsideration of how learning support services are designed and delivered, so that elderly education can better align with the principles of lifelong learning and meet the evolving demands of an aging society.

5. EXPLORING PATHWAYS FOR ELDERLY ONLINE EDUCATION SUPPORT SERVICES

Grounded in the core principles of the Three Dimensions of Learning Theory, and based on an in-depth analysis of the learning barriers faced by older learners, this study proposes a framework for elderly online education learning support services. Taking into account the characteristics of older learners, the model explores pathways from the perspective of supply-side structural reform in elderly education, focusing on three dimensions: learning content, emotional support, and interactive communication (see Figure 3).
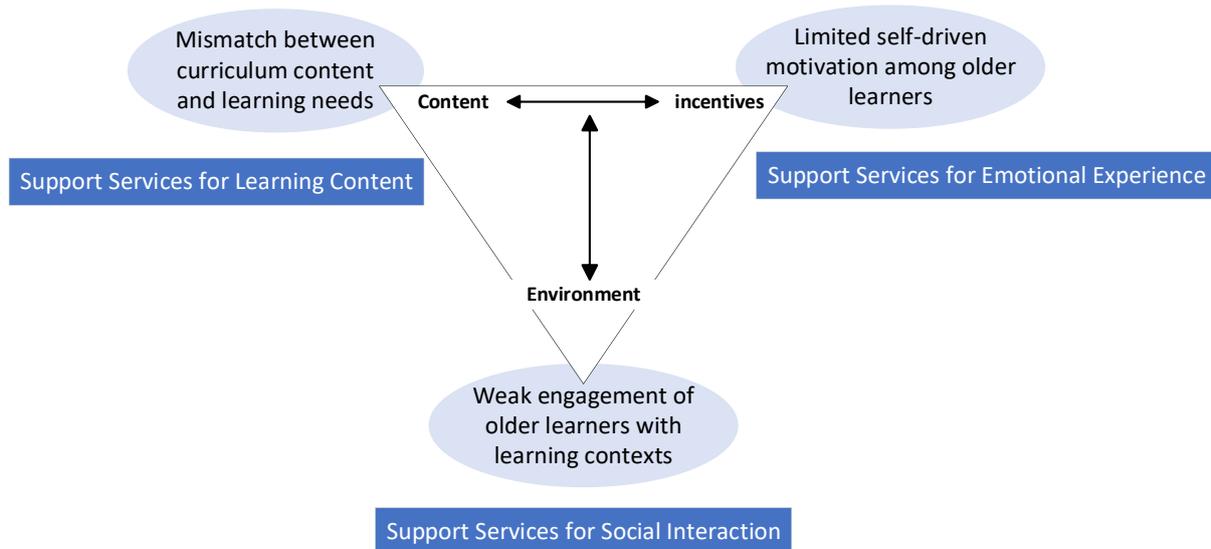
Figure 3: Framework of Elderly Online Education Learning Support Services

5.1 Actively Promote Supply-Side Structural Reform in Elderly Education to Address Structural Imbalances

To optimize the structure of educational content, providers of elderly education should move beyond the traditional "recreation-oriented" model and systematically construct a multi-tiered curriculum system that encompasses diverse and contemporary needs such as digital technology, health and elderly care, intergenerational communication, social participation, and lifelong development.

To innovate in supply entities and mechanisms, reliance on government dominance should be reduced by stimulating the vitality of multiple stakeholders. Open universities, higher education institutions, community organizations, enterprises, and social actors should be deeply engaged through mechanisms such as service procurement, delegated management, and collaborative sharing, thereby forming a synergistic and efficient "government–society–enterprise–university" network of joint provision.

To enhance service effectiveness, institutional openness and resource decentralization should be advanced. A standardized evaluation system should be established, with a strengthened emphasis on digital platforms and resource integration to promote cross-regional sharing of high-quality courses. Community-based and neighborhood-level learning centers should be expanded to effectively resolve the "last-mile" issue of accessibility.

5.2 Address the Personalized Needs of Elderly Learners to Meet Diverse Learning Demands

Older learners differ significantly in their life experiences, learning motivations, cognitive levels, and learning abilities. To ensure the precise provision of elderly education resources, several measures should be taken. First, establish a scientifically designed entrance assessment system, combining pre-enrollment questionnaires (covering educational background, health status, qualifications, motivations, and interests) with structured interviews, so as to create individualized learning profiles for each student.

Second, develop a modular curriculum system. Based on clustering of core needs, course packages should be offered accordingly: "digital literacy" courses with tiered smartphone training; "health management" courses with age-specific disease prevention modules; "health and leisure" courses with seasonal travel itineraries; and "social participation" courses with community-based silver volunteer programs.

Finally, strengthen digital empowerment in elderly education by promoting a blended "online + offline" teaching model: offline small-class teaching delivered at learning centers, supplemented by online age-friendly digital platforms offering on-demand courses, and immersive VR-based learning solutions for those with mobility limitations.

5.3 Deepen Emotional Support Mechanisms and Strengthen Interactive Learning Environments

Unlike other forms of education, elderly education should transcend the simple transmission of knowledge by systematically integrating emotional care, thereby creating a spiritual haven for older learners. Class teachers should be assigned to closely monitor learners' psychological well-being, provide timely counseling and intervention, and create channels for emotional expression.

Interactive learning environments should be emphasized to ignite older learners' enthusiasm for knowledge. Traditional one-way lecturing should be replaced by diverse participatory pedagogies, such as scenario simulation and experiential learning. Learners should be encouraged to share experiences, support one another, and form close peer connections. Regular group activities should be organized to counter loneliness and foster a sense of life value and belonging.

Learners should also be guided beyond the classroom to engage in social services. Initiatives such as a "Community Silver Wisdom Think Tank" can be established to involve older learners in community renovation, covenant-making, and public affairs. Open universities for the elderly should leverage their institutional strengths to integrate resources from civil affairs departments, universities, and enterprises, thereby establishing a multi-stakeholder interaction network. Through mechanisms such as a credit bank system, the learning outcomes of older learners can be formally incorporated into the National Qualifications Framework, enhancing their sense of efficacy and achievement in learning.

6. LIMITATIONS

This study centers on the practice of elderly education support services in Yunnan Province, with all interviewees being local elderly learners. This introduces certain geographical and sampling limitations to the research. Enhancing the generalizability of the findings and extending their benefits to a broader population of elderly learners, thereby improving their capacities for active aging, represents a key direction for subsequent research.

7. ACKNOWLEDGEMENT

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