



Exploring Pathways for Education in the Major of Intelligent Health Elderly Service and Management to Support the Development of a Longevity Society: A Case Study of the Practical Course of Elderly Ability Assessment

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Abstract. Aging societies face an urgent shortage of skilled elderly care professionals. This study examines how the "Elderly Ability Assessment" course in the Intelligent Health Elderly Service and Management program at Polus International College can support longevity society development through a single-case study. Data including course documents, student performance, competition records, and institutional agreements, were analyzed using thematic analysis with a three-level analytical framework (micro: student competency; middle: program development; macro: social service supply). The research results show the course achieves strong outcomes: exam pass rates exceed 97%, certification rates stabilize above 88%, and students earn over 10 competition awards. However, challenges persist in complex case training, school-enterprise depth, teaching methods, assessment practices, and faculty industry experience. A five-dimensional empowerment framework is proposed: optimizing teaching content, innovating pedagogical methods, improving practical skills, refining performance evaluation, and strengthening faculty resources. This research concludes that effective course implementation directly determines talent cultivation quality and serves as a key pathway for vocational education to empower longevity societies. Limitations include single-case design and lack of longitudinal tracking. Comparative multi-institution studies and graduate outcome tracking are recommended for future research.

Keywords: Elderly Ability Assessment, Longevity, Elderly.

1 Research Background

1.1 Global Trend of Longevity Society

The world is currently undergoing a critical transition marked by a significant increase in life expectancy and the accelerating pace of population aging. Average life expectancy has increased from 64 years in 1990 to 73.3 years in 2024, and is projected to exceed 82 years by 2100 [1]. Population aging has become an irreversible trend.

With the development of longevity societies, issues such as aging populations and increasing disability have become more pronounced, leading to a sharp rise in the number of elderly and disabled individuals. Consequently, elderly care demands have shifted from traditional basic daily care to more personalized and diverse services, with an urgent need for high-level services such as health management and quality-of-life improvement.

However, a growing gap exists between the supply of skilled geriatric care professionals and market demand, as traditional theoretical education no longer meets practical needs. Countries such as Germany, Japan, and South Korea have explored effective vocational training models to stabilize their talent pools [2].

1.2 Domestic Demand for Professional Elderly Care Talents

China is currently in a critical phase of rapid population aging, with a large and fast-growing elderly population and surging demand for elderly care services. By the end of 2025, the number of people aged 60 and above nationwide had exceeded 320 million, accounting for 23.0% of the total population, among which those aged 65 and above reached over 220 million, about 15.9% of the total. There were approximately 40 million fully or partially dependent elderly, while the number of certified elderly caregivers was only 500,000 [3], resulting in an acute imbalance between supply and demand for professional elderly care personnel.

Society's demand for such professionals not only lies in quantitative shortage but also in high requirements for quality and comprehensive capabilities, especially for those with multidisciplinary skills like elderly ability assessment. As the primary platform for training practical elderly care talents, the vocational colleges' Intelligent Health Elderly Service and Management program shoulders the mission of addressing talent shortages [4].

However, it has many shortcomings, particularly in the Elderly Ability Assessment course, such as a disjointed curriculum [5] and industry practices, insufficient hands-on training, inadequate dual-qualification faculty, and shallow school-enterprise cooperation. These problems make students lack solid assessment skills, limiting professional education's role in supporting longevity society construction, thus making it urgent to explore effective empowerment pathways.

2 Research Design and Methods

2.1 Research Design

This research employs a single-case study design. Given the exploratory nature of the research question—namely, how a specific curriculum can contribute to the development of a long-life society—the case study approach is capable of yielding in-depth and context-rich insights, thereby providing a basis for subsequent theoretical development and wider implementation.

2.2 Case Selection

The Intelligent Health Elderly Service and Management program at Polus International College was selected as the case for two reasons. First, it is a key signature program launched in 2016 with a well-established curriculum and documented implementation history. Second, the program has demonstrated measurable outcomes—including high certification rates and student participation in real-world assessment projects—making it a theoretically informative case for examining both successes and challenges.

2.3 Data Collection

Data were collected from multiple documentary sources:

Course documents: Course standards, 64-hour teaching plans (32 theory + 32 practical), training manuals, and assessment rubrics (2020–2025); Student performance data: Final exam pass rates, grade distributions, professional certification attainment rates; Competition and service records: Awards in elderly care skills competitions (10+ awards), student participation records in community assessment projects; Institutional documents: School-enterprise collaboration agreements, apprenticeship training base records, faculty composition data (3 full-time on-campus + 1 off-campus senior mentor).

All documents were accessed with institutional permission. No individual-level identifiable data were used.

2.4 Data Analysis

Data were analyzed using thematic analysis following Braun and Clarke's six-phase framework: familiarization, initial coding, theme search, theme review, theme definition, and producing the report. Initial coding focused on identifying course implementation features, outcomes, and challenges. Codes were then organized into broader themes corresponding to the five dimensions of curriculum reform (content, methods, practice, evaluation, faculty). To enhance analytical rigor, findings were triangulated across multiple document types. For example, claims about student competency were cross-checked against exam data, certification rates, and competition records.

3 Theoretical Foundation and Analytical Framework

3.1 Theoretical Foundation

The theoretical foundation of this research primarily comprises the theory of active aging, competency-based education theory, and the theory of industry-education integration.

Active aging theory (WHO, 2002) [6]: Emphasizes health, participation, and security, providing the ultimate goal for elderly ability assessment.

Competency-based education theory [7]: Guides curriculum design based on job competencies and real-world task completion as evaluation criteria

The theory of industry-education integration [8]: Calls for deep alignment between education chains, talent chains, and industrial chains.

3.2 Analytical Framework

This research constructs a three-level analytical framework comprising the micro, middle, and macro levels.

Micro level: The curriculum empowers students by cultivating their professional competencies and occupational identity—specifically, their ability to “understand, conduct, and willingly engage in assessment.”

Middle level: The curriculum empowers the academic discipline; using the elderly capacity assessment course as a fulcrum, it drives the development of the Intelligent Health and Elderly Care Services and Management program cluster and transforms talent cultivation models.

Macro level: The curriculum empowers society by supplying professionals with specialized assessment capabilities, thereby enhancing the precision and equity of care services in a longevity society.

4 Case study Findings

4.1 Key features of the course implementation

“Elderly Ability Assessment” is a core required course, with 64 class hours (32 theory, 32 practical training) and 4 credits. The course is closely aligned with the national standard *Specifications for the Assessment of Elderly Persons’ Capabilities* (GB/T 42195-2022) and integrates local elderly care policies of Sichuan Province to establish a “theory + practical + training” curriculum framework. The theoretical component covers assessment standards, procedures, and report writing, while the practical training focuses on four dimensions: self-care abilities, mental state, sensory perception and communication, and social participation, incorporating elements of ideological and political education into the curriculum.

The program implements a modern apprenticeship model with “dual-subject” collaborative education between school and enterprises. Teaching methods include theoretical lectures, case studies, and scenario simulations, with enterprise mentors con-

ducting regular practical demonstrations. Practical training is conducted at apprenticeship bases in collaboration with institutions including Guang Da, Jin Xin, and Chun Xuan Mao Healthcare. Student assessment involves a dual-evaluation mechanism by on-campus faculty and corporate mentors, emphasizing integration of "courses, certifications, job roles, and competitions."

4.2 Documented Outcomes

After years of development and refinement, the curriculum has established a stable and standardized implementation system.

Student development. Student development has yielded significant results, effectively meeting the talent needs of a longevity society. The curriculum has effectively enhanced students' professional skills and job readiness. Students are now capable of independently completing the entire process of elderly capability assessment, with the standardization of assessments and the quality of report writing continuously improving. The final exam pass rate has remained stable at over 97%, with an average pass rate of 96.8%, including 42.3% receiving "Excellent" and 45.1% receiving "Good" grades. Both theoretical and practical assessment scores have been outstanding. The rate of professional certification attainment has risen year by year, stabilizing at over 88%. Some students have secured internships at assessment agencies, where they receive a daily labor subsidy of 300 yuan, fully demonstrating the alignment between their professional capabilities and industry demands. Competition achievements have been outstanding, with students from this program winning more than 10 awards in the elderly care skills competition. Meanwhile, students' professional identity continues to strengthen, and the proportion choosing internships in elderly assessment-related positions has increased year by year. Some students have explicitly set "Elderly Capacity Assessor" as their career development goal, thereby cultivating professional talent for the construction of a longevity society.

Program development. The college established off-campus practical training bases with multiple elderly care and assessment institutions. Industry mentors now participate in teaching, addressing limitations of on-campus training and promoting integration of "teaching, learning, and practice." The talent cultivation system has been further refined.

Social service contribution. Over the past year, students participated in four real-world elderly functional assessment projects, covering more than 10 elderly care institutions and over 20 communities, serving more than 1,000 older adults. These activities raised public awareness of elderly functional assessment and provided direct practical support for longevity society development.

4.3 Challenges in Course Implementation

Despite these achievements, several challenges were identified through thematic analysis of course documents and records:

Content challenges. There is an overemphasis on theory, while practical training is primarily limited to basic simulations. The lack of training on complex cases, such as those involving disabilities or cognitive impairments, results in students' insufficient

ability to handle complex situations. There is inadequate integration of intelligent assessment tools, and the curriculum is not closely aligned with relevant local regulations in Sichuan, leading to a disconnect from actual local needs.

Practical training challenges. Off-campus practice mainly focuses on observation and assistance, with few opportunities for students to conduct home visits or on-site assessments independently. Industry-academia-research collaboration remains superficial, with insufficient depth of corporate involvement across all teaching phases. On-campus training facilities and equipment do not fully meet industry standards.

Teaching method challenges. Approaches remain relatively traditional, with limited application of scenario simulations and case studies. There is a lack of immersive design. The coverage and depth of online platforms and virtual simulation resources are insufficient to compensate for the absence of real-world scenarios.

Assessment challenges. Evaluations are primarily conducted by faculty members, with limited involvement from industry mentors. The focus is on procedural compliance, yet dimensions such as empathy and communication skills are overlooked, while process-based assessments lack sufficient detail.

Faculty and resource challenges. The curriculum is not always updated promptly with the latest industry standards and policy changes. Some faculty members lack practical experience, making it difficult to align teaching with industry demands.

5 Empowerment Framework Based on Curriculum Optimization

Based on the documented challenges and guided by the theoretical framework, the following five-dimensional empowerment approach is proposed.

5.1 Optimize teaching content

Reconstruct the "Elderly Ability Assessment" course by refining the national "Specifications for the Assessment of Elderly Ability" into practical modules, adding training on disabled, dementia, and chronic disease elderly cases, and incorporating smart assessment equipment operation. Upgrade elderly care courses with smart technology, personalized chronic disease care, and psychological counseling modules. Dynamically update content per national and Sichuan local standards (e.g., DB5107/T 84-2020), add local cases, increase practical hours to over 70%, and introduce advanced international concepts to meet longevity society needs.

5.2 Innovative teaching methods

Implement a "theory + practice + scenario" trinity teaching model. Promote the in-depth application of scenario simulation, case teaching, and task-driven teaching, build immersive scenarios such as dementia and home-visit assessments, and decompose assessment work into tasks to cultivate students' problem-solving abilities. Deepen information-based teaching, introduce virtual simulation systems to make up for the lack of real scenarios, and adopt a "classroom + institution" mobile teaching model, with on-campus teachers and industry mentors co-teaching in nursing institutions to realize "learning by doing" and enhance students' practical ability and professional identity.

5.3 Improve practical skills

Strengthen the implementation of practical links. Deepen school-enterprise cooperation with local high-quality elderly care and assessment institutions (e.g., Tai Kang, J in Xin, Sichuan San Yi Healthcare), build training bases, and promote enterprises' in-depth participation in teaching. Optimize practical teaching arrangements, increase internship duration, upgrade on-campus training venues and equipment to enhance students' practical ability. Expand practical channels, organize students to carry out social services in communities and nursing homes, and encourage their participation in public welfare activities to strengthen professional identity and social responsibility.

5.4 Refine the performance evaluation plan

Improve assessment and evaluation to strengthen the talent quality orientation. Build a diversified assessment system of "theoretical examination + practical assessment + industry evaluation", increasing the weight of practical operation, humanistic care, and intelligent technology application. Invite industry personnel to participate in the assessment and integrate post standards. Adjust assessment weights, adopt diversified assessment methods, strengthen process assessment, and deepen the integration of "courses, certifications, jobs, and competitions" to stimulate students' enthusiasm and ensure the delivery of high-quality talents for a longevity society.

5.5 Strengthen faculty resource

Strengthen faculty construction to build a composite teaching team. Improve the "double-qualified" faculty training mechanism by arranging for teachers to practice at institutions and inviting industry experts to provide training. Optimize the faculty structure by introducing compound talents with practical experience and expanding the off-campus industry mentor team. Build a faculty exchange platform to promote experience sharing, encourage teachers to participate in scientific research and teaching reform, and enhance the overall level of the faculty.

6 Discussion

6.1 Interpretation of Findings

The findings demonstrate that the Elderly Ability Assessment course has achieved measurable successes in student outcomes and social service contributions. However, the identified challenges—particularly in complex case training, school-enterprise depth, and faculty practical experience—reflect systemic issues common in vocational education for emerging fields. From the perspective of competency-based education theory, the current curriculum provides adequate foundational knowledge but insufficient preparation for the full range of real-world competencies required in elderly assessment, especially for complex and non-routine cases. From the industry-education integration perspective, while collaboration exists, it remains at a relatively shallow level, with enterprises not yet fully integrated into curriculum design, delivery, and assessment.

6.2 Comparison with Existing Literature

The challenges identified in this study align with broader findings in Chinese vocational education for elderly care. Wang [5] noted similar issues with task-driven and peer-assessment approaches in elderly ability assessment practical training. Guo [4] highlighted the general gap between talent cultivation and industry needs in smart health elderly service programs. The empowerment framework proposed in this study extends existing work by providing a systematic, five-dimension approach specifically tailored to the elderly ability assessment course, with explicit connections to active aging and competency-based principles.

6.3 Study Limitations

This study has two main limitations. First, as a single-case study, the findings are context-specific. The generalizability of the conclusions to other vocational colleges or regions requires further validation through comparative studies. Second, data are cross-sectional and primarily documentary. No longitudinal tracking of student career outcomes was conducted, and the long-term effects of the proposed empowerment strategies cannot be assessed from current evidence. Future research should include multi-case comparisons and longitudinal follow-up studies.

7 Conclusions and Implications

7.1 Conclusions

This study examined how the practical course of Elderly Ability Assessment in the Intelligent Health Elderly Service and Management program can support the development of a longevity society. Through a single-case study of Polus International College, the research identified both achievements and persistent challenges in curriculum content, teaching methods, practical training, assessment, and faculty development. Based on these findings, the study proposed a five-dimensional empowerment framework. The implementation quality of this course directly determines talent cultivation quality and alignment with societal needs. Optimizing its implementation is a key pathway for professional education to empower a longevity society, operating at the micro level (student competency and identity), middle level (program development), and macro level (service precision and equity).

7.2 Implications

For practice, vocational colleges should prioritize the systematic integration of complex case training, smart assessment tools, and deeper school-enterprise collaboration in elderly ability assessment courses. Faculty development mechanisms—particularly industry practice opportunities for on-campus teachers—require strengthening. For policy, local governments could support curriculum alignment with regional elderly care standards and facilitate the formal involvement of industry professionals in assessment and instruction. For future research, comparative studies across multiple institutions

and longitudinal designs tracking graduate career outcomes are needed to validate and refine the empowerment framework proposed here.

The essence of a longevity society is ensuring dignified lives for older adults. Vocational education's mission is to cultivate talents who can safeguard this dignity. The elderly ability assessment course, when effectively implemented, embodies this mission.

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