Introduction and potential of the gerontechnology planner in Korea

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Purpose In North America, a Rehabilitation Engineering Technologist (RET) applies engineering principles to the design, modification, customization, fabrication, and/or integration of assistive technology for persons with disabilities[1]. The Assistive Technology Professional (ATP) certification recognizes demonstrated competence in analyzing the needs of consumers with disabilities, assisting in selecting appropriate assistive technology for their needs, and providing training in the use of the selected devices[2]. In Korea, an Assistive Technology Engineer develops, maintains, repairs, and customizes various commercial assistive technology devices to help individuals with disabilities or the elderly overcome physical and mental challenges in their daily lives[3]. Currently, the qualifications for assistive technology professionals primarily focus on individuals with disabilities, emphasizing rehabilitation, medical, and economic interventions, and intermediary roles. However, there is a growing need for qualifications that comprehensively address the aging process, including prevention, compensation, care, and overall quality of life for older persons. **Method** A Gerontechnology Planner is responsible for understanding the lifestyle changes of individuals in various stages of aging, assessing their current situations, and utilizing a range of technologies and environments to improve their living conditions. Their duties include investigating, analyzing, planning, implementing, guiding, and communicating technological and environmental solutions to enhance the quality of life for the elderly. The certification levels are divided into Level 2, Level 1, and Master levels, assessed through written and practical exams. The subjects are categorized into Introduction to Gerontechnology, Assessment and Counseling for Aging Individuals, Aging and Lifestyle Changes (physical, psychological, social), Presentation of Papers on the Application of Technological Environments, Planning Reports using the Planner Toolkit, and Methods of Teaching Gerontechnology. The applicable subjects vary depending on the certification level. Two universities have organized courses to obtain the Level 2 certification. Additionally, at six universities, students can obtain the Level 2 certification by taking the Introduction to Gerontechnology and Gerontechnology Practicum (Toolkit) courses. For the Master level, a special course involving the study of Gerontechnology value assessment and planning toolkit is required to obtain the certification. **Results and Discussion** The reason we use the term "Gerontechnology Planner" is that, under domestic law, it is impossible to call them "Gerontechnologists." The terms 'technician', 'engineer', and 'technologist' can only be used for positions recognized by the government. Therefore, 'Gerontechnologists' cannot be used as a certification title because it corresponds to 'engineer'. However, 'Gerontechnologists' can be used as a general term to refer to researchers and developers, not as a certification title. These individuals are the most knowledgeable about gerontechnology and possess the competencies to work in related fields. We can also use the terms "Gerontechnology Adviser" and "Gerontechnology Developer." It has been registered as a private certification in Korea, and 20 individuals were awarded the Level 2 certification through the first training session. The second training session will be offered during the summer vacation. Continuous improvement of standard textbooks and ongoing academic research at the master's and doctoral levels are necessary. It is essential to compile and share numerous case studies that Level 2 and Level 1 certificate holders can utilize.

Table 1. Courses

Course	Hours
Course Introduction, Greetings, Self-Introduction	1
Introduction to Gerontechnology	3
Physical Aging and Life (Problem Identification and Response)	6
Psychological Aging and Life (Problem Identification and Response)	6
Social Aging and Life (Problem Identification and Response)	6
Methods of Elderly Counseling	6
Analysis of Gerontechnology Cases (Prevention, Compensation, Care, Quality of Life)	8
Application Technologies (Advanced Tech., Cultural Tech., Human-Centered Design, Service Design, Service DX)	12
Introduction to Gerontechnology Toolkit	2
Gerontechnology Planning Practice (Step-by-Step Practice, Team Practice)	10
Gerontechnology Planning Presentation & Evaluation	4
Graduation Ceremony	2
Total	66

References

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2. Assistive Technology Professional (ATP); https://www.resna.org/Certification/Rehabilitation-Engineering-Technologist-RET
3. Assistive Technology Engineers; https://www.kuksiwon.or.kr/subcnt/c_2031/1/view.do?seq=7&itm_seq=16

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Case study on gerontechnology planning

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Purpose. We have developed a Gerontechnology Toolkit and provide education and certification for Gerontechnology Planners. We are curious if the toolkit effectively improves the lives of older adults. It is essential to analyze various cases and make improvements. **Method** Since June 2022, we have explored the potential of planning through lectures and planning for users. In the first half of 2023, university undergraduate students participated in practical exercises as part of their coursework. In the second half of the year, graduate students engaged in practical exercises. In 2024, practical exercises will be part of the certification program. Students have the option to proceed from the perspective of users, provider staff, or consultants/advisors. **Results and Discussion** The planning conducted by the three groups—users, advisers/consultants, and suppliers/developers—had mixed results; some aspects were feasible, while others were not. It is important to achieve small, easily attainable goals frequently, such as methods for motivating people. The effectiveness is difficult to measure physically and can be understood through subjective evaluations of life changes. Users need abundant reference materials that are easy to find and apply. Some users find it difficult to plan like experts. While advisers/consultants can do this well, they need specialized data tools to understand the value and application effects of technologies. Suppliers/developers need data tools to find the models most suitable for their technology.

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Figure 1. Gerontechnology planning sheet

Gerontechnology planning for ( )	
Role	□ User □ Adviser/Consultant □ Supplier/developer
Title	
Overview	
Aging of ( )	
Designing the Aging Life of ( )	
Discovery of Technology	
Technology and Environment Model for ( )	
Model Evaluation	
Expected Effects	

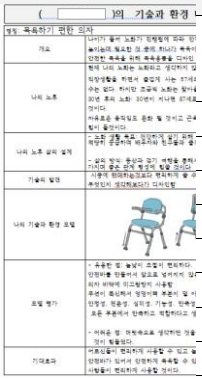

Figure 2. Gerontech planning practice(Feb., 2024)

Figure 3. Gerontech planning practice(June, 2024)