P-L. Liu (Convener). **Topics on interdisciplinary training and innovative teaching models in Taiwan: Facing the rapidly aging society**. *Gerontechnology 2014; 13(2):101;* doi:10.4017/gt.2014.13.02.249.00 **Participants** S-C Kang (Taiwan), C-H. Chiu (Taiwan), Z-T. Yeh (Taiwan), H-C. Lai (Taiwan). **Issue** This symposium focuses on curriculum arrangements, experience sharing, innovative teaching methods, and improving student engagement. **Content** The education in Taiwan is discipline-based and lacks lessons that are multidisciplinary. This problem can be clearly seen in the difficulties in motivating an aging society industry in Taiwan. Two major and current problems are (i) The difficulties in communication between the medical fields and the design fields; and (ii) The difficulties among various disciplines in the medical system to understand and communicate with each other. Taiwan's educational system is rigid in the sense that students can only take classes that belong to just one department. Furthermore, a constant pursuit for higher education is part of Taiwan's culture, in that knowledge from textbooks is over-emphasized[7].This causes society to praise students who are knowledgeable about only a single discipline. Taiwan is on course to go from being an aged society to a hyper-aged society by 2025, when the elderly are estimated to account for one-fifth of the population. Faced with these structural transformations in demographics, the demands of services and industries will inevitably change. How can education empower students to cultivate valuable insights to anticipate future needs and also adequately prepare them to face flexible and dynamic environments? How can education be reinvented to provide students with creative thinking and a comprehensive vision that compels students to become not only followers of values, but also creators of them? **Structure** The schedule consists of four oral presentations including commentary (15 minutes each) followed by a panel discussion (20 minutes). Presentation contents include: (i) an innovation dual-instructor teaching method for multi-disciplinary education focusing on aging society; (ii) the connection between service-learning and elderly care; (iii) integration of ICT and health care; (iv) the sleep health and aging psychology services on the cloud. **Conclusion** This symposium focuses on sharing the experience of an innovative teaching model. It helps break barriers between different professionals and foster true collaboration and deep interaction between different professionals. Through the panel discussion, the participants will have the opportunity to interact with the experienced instructors and discuss possible education models for cultivating multidisciplinary talents for the aging society.

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S-C. KANG, P-L. LIU, Y-F. LEE, S-R YE, H-J. YANG, C-W. PENG. **The teaching method of multidisciplinary T workshops: A new teaching model for an aging society.** *Gerontechnology 2014;13(2):101-102;* doi:10.4017/gt.2014.13.02.428.00 **Purpose** The current service and technological design of the health care system is unable to meet the needs of an ageing society. We expect healthcare needs to increase dramatically in the future and if the service industry and technological innovations cannot keep up with the increasingly aged population, this would impact our society tremendously. We will need people who are talented, professional, caring and full of creative spirit to invent or design products and services for the elderly. As such, we would need to arrange a way to cultivate potential innovators who would eventually encourage and/or create a new industry for an ageing society. Our program envisions this as its main goal. We are attempting to create a new learning model in higher education using multidisciplinary approaches. The goal of this new learning model called 'T workshop' is to cultivate 'T-shaped' professionals, elites who interact and cooperate with a wide range of disciplines and fields for the benefit of an aging society. We employ two professional instructors

with problem identification and problem solving skills to cooperate in this workshop. The problem people have with understanding the needs of an aging society is related to dealing with the furniture, diet, and games of the elderly. Moreover, we hope to teach students to reorganize the thought patterns they use to identify and solve problems in a way that will allow them to polish their skills through solving real problems, such problems related to sleep in the elderly. This way, students receive training while creating actual solutions. Through this teaching method, students would not only learn a single type of professional knowledge, but also learn how to use different skills in different disciplines to find suitable solutions for various problems. **Method** The learning process of the students in this program begins with observation using experience, design thinking and multidisciplinary collaboration; then, the students are asked to reflect the possibilities of their own profession and to understand the thinking of those in other fields. This ongoing project features three main elements: (i) dual-instructors, (ii) monograph development (approaching a practical problem and designing a solution), (iii) multidisciplinary peer review. The course lasts two weeks and is structured as follows: students are first given an introduction to a specific age-related problem to help the students understand more about a particular issue. We then introduce the design thinking methods and the mode of the operation. Lastly, the students will apply what they learned in the morning to practical activities in the afternoon. The students are then given a week to generate creative ideas so that in the second week they may present their solutions or prototypes of the products they design and share what they learned throughout the process. Students are given small take-home assignments to help them practice how to observe and develop ideas. **Results & Discussion** We have held 22 workshops from March of 2012 to March of 2014, where a total of 475 students have participated, led by a total of 44 instructors (two per workshop). A summary of the participants' responses is provided below. First, their ability to observe has improved on average; this is because of the clear observational instructions given by the first instructor, which allows students to identify problems that can be solved. The students also became more adept at designing thanks to our design professor. Second, the students learned to think from a different angle by leaving their comfort zone and crossing to another discipline. Third, the students learned to cooperate by generating ideas and designing products as a team. Furthermore, having two instructors in the same room allows students to see how different each discipline approaches the same problem and how different disciplines interact. The current system of education lacks connection and interaction between different industries, which is something our ageing society will desperately need in the future. Moreover, we were glad to meet our goal in increasing the communication skills by gathering participants from different backgrounds to solve a problem as a team with some professional help from the instructors and teaching assistants. We believed this kind of T-shape cultivation would help break down barriers between different professionals and increase the possibilities of multidisciplinary cooperation or interaction. It will also help provide more opportunities and possibilities of a better life for ageing societies of the future.

Purpose A radio-frequency identification (RFID) smart watch can provide older adults with fall detection, medical emergency alarming, vital sign recording, and medication reminder applications (*Figure 1*); however, the prevalence of utilization is rather low. The purpose of this paper is to examine the impact of an innovative teaching model on the utilization of smart watches. Study findings are intended to develop a creative, user-centered, and inexpensive service procedure for older adults to increase smart watch utilization. **Method** This study is a quasi-experimental design with two groups, including one experimental and one control group. Each group consists of 15 dyads of a student and an older adult. Fifteen students enrolled in the Smart Living curriculum were in the experimental group, and received the service-learning teaching method, while another 15 students were enrolled in the control group without receiving the service-learning teaching method. in pre- and post-tests, T-edu questionnaires were
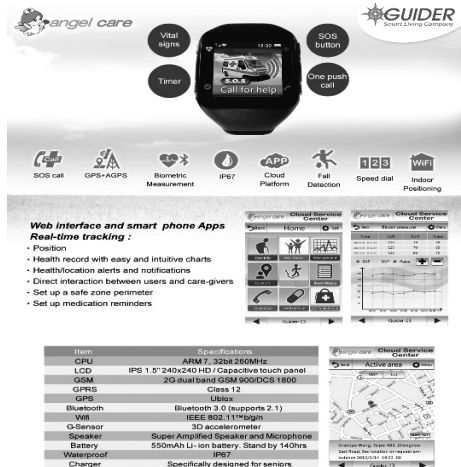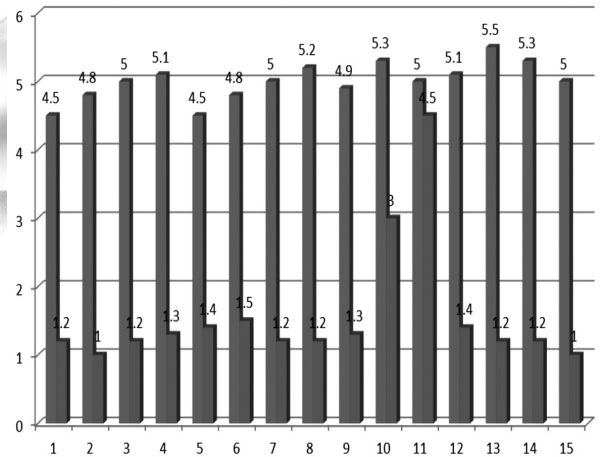
Figure 1. RFID smart watch

Figure 2. Older adults' utilization of smart watches was four times longer in duration for the experimental group

used to assess students' five learning effects including observation experience, design thinking, technology innovation, reflection feedback, and interdisciplinary collaboration. The T-edu questionnaire has good reliability and validity. On the other hand, older adults' were assessed on their utilization of the smart watches. T-tests were used to determine the outcome of students' learning effects and the older adults' smart watch use. **Results & Discussion** Results showed that the students enrolled in the experiment group not only performed better but also obtained better self-assessments for learning outcomes. Secondly, older adults' utilization of smart watches was four times longer in duration (*Figure 2*) for the experimental group; moreover, feedback from older adults in the experimental group are useful and specific, especially regarding falling detection and monitoring. Finally, we found the key factor affecting older adults' smart watch utilizationis not in watch function, but in the services provided. A business model may be developed based on the finding of this study.

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Purpose Reviewing the types of current curricula, we find that the objective of most of those still is to enhance students' specialties. Few curricula incorporate cooperation among multiple disciplines and talent development. Therefore, we propose an inter-disciplinary curriculum called 'Service design', which combines 'design thinking', 'experience observing', and mutual 'specialties' to develop students with T-shaped skills. This program not only helps students transform know-what and know-why into know-how, but also focuses on learning by doing. We expect students to know the essence of service, to analyze the logic of a service model, and to cultivate the abilities of service design planning and analysis. **Method** We utilize a process of four steps with different methodologies to establish the curriculum. (i) Experience observing: We designed a mission of observation before the class and allowed the students to know the essence of service and to cultivate the abilities of observing and understanding. In addition, we led students in taking part in the exhibition of designers' week in order to broaden their perspectives of designing and creation. (ii) Guidance teaching: We let students satisfy their curiosity through a business visit combined with the teaching of the subject in order to establish the basis for work practices. With regard to inter-disciplinary lecturing, we invited mentors with rich practical experience to share

with students their perspectives about technology applications and practical business models to convey the relationship between principles and mainstream practices. We also utilize case studies to stimulate students to discuss, use principles, and propose incremental or innovative solutions. (iii) Case practicing: The most worthwhile exercise mentioned in the class was the case study workshop, in which students formed several teams and worked together in designing services to certify study outcomes. The workshop helps students to transform know-what and know-why into know-how. These students used their knowledge of users' experiences based on contextual inquiry to develop a vision of a new service by brainstorming and affinity diagram and then proceed to conceptual design and, lastly, share the output. (iv) Feedback gathering: We held an open discussion in the final class of the curriculum to motivate students to review and reflect on the outcomes from the curriculum. The feedback from the students will assist us in revising the next-term syllabus. **Results & Discussion** This process model of teaching puts emphasis on interaction in the class and transforms the roles of teachers from conveying theories to guiding studying. Throughout the co-lecturing and co-studying process, even though students do not necessarily have notable output in the class, we highlight the study process and study effect to develop a different thought process in students that they will bring into their workplace in the future.

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Purpose The rapid growth of cloud-based ICT technology provides a convenient tool to design innovative services for seniors[1]. Students interested in gerontechnology must be aware of the fundamentals of aging psychology and cloud technologies. We offer a full semester course to train students from across disciplines to observe and understand the physical and psychological needs of seniors so that they can design and implement ICT products. Students work together to identify a problem and to propose and design a solution. **Method** This course lasts for eighteen weeks. It is taught by two instructors: one from the Clinical Psychology Department, who is responsible for psychology of aging topics[2]; and the other from the Computer Science and Information Engineering Department, who is responsible for teaching about cloud technology. Five speakers from the industry give lectures about real world scenarios and design principals. An hour-long lab or group discussion is scheduled after each lecture. Teaching assistants provide aid during the discussion. Students from different disciplines are grouped
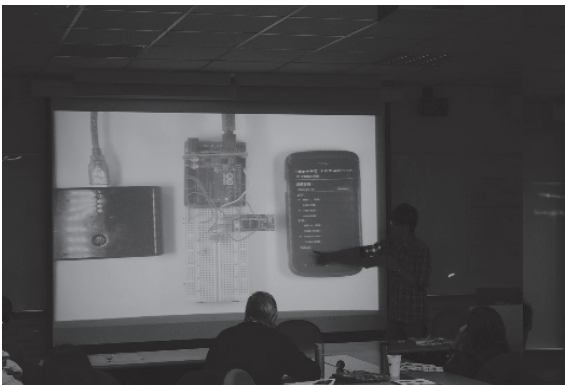

Figure 3.   Food light tunnel

Figure 4.   Memory-assisted watch

randomly before proposing an individual product/service proposal[3]. After the mid-term presentation, the topics converge to six categories, and the final project teams are formed. All content of this course is recorded and shared online. Students write web-based notes[4] and discuss their lab/project in the Facebook groups after class. **Results & Discussion** 39 students and 2 teaching assistants participated this course in the Fall 2013. Topics of the final project included: (i) Food light tunnel (*Figure 3,* food and light recording and prescription service); (ii) Memory-Assisted multifunction watch (*Figure 4*); (iii) Game-based cognitive evaluation for elders on Pad; (iv) Aging Battle Club (A social calendar APP); (v) Intelligent cane and umbrella for elders; and (vi) I have whatever you want (Dementia assisted platform). Four teams created prototypes, and two teams presented a scenario and workflow. The presentations were shared on Youtube[5]. Students provided strong positive feedback in their course evaluations.

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