Global Study Program

Collaborative Learning Abroad

2015

**Life Space + Healthcare Technology:
Ideas for the Future**

Chiba University, JAPAN
Multimedia University, MALAYSIA

Healthcare & Technology

Topic and Research Questions

Japan is often recognized as an aging society. Indeed, as of 2015, 26.7% of its population is over 65 years old, and, according to a 2016 white paper of the Cabinet Office, it is estimated that this percentage will continue to grow in the next couple of decades. Given the situation, the government and various institutions in different areas including but not limited to medicine, technology and education, have been tackling some of the current and upcoming issues related to the aging population of the country.

Along with the aging of residents, Japan is also encountering an aging of its housing facilities. Decrepit single houses and public apartment complexes (hereafter *Danchi*) built during the period of rapid economic growth after the 1950s have been prominent particularly in the outskirts of Tokyo and other suburban areas. The Japanese Ministry of Land, Infrastructure, Transport and Tourism and different non-/for-profit organizations have been working on the revitalization of these buildings and of the surrounding areas by, for example, remodeling rooms and providing daily support systems.

Global Study Program (GSP), a short-term international collaborative study abroad program organized by Chiba University with its partner universities since 2011, was held this year with Multimedia University (Malaysia) in Chiba (Japan). The theme was "Life Space and Healthcare Technology: Ideas for the Future."

Adding on to the experience and knowledge gained from previous GSPs (e.g. health and safety smartphone applications for people in Melaka, Malaysia), this year's GSP aimed to foster a better understanding of and critical perspectives on the application of technology to the improvement of living spaces. This was achieved through a partially experiential engagement in two localities: *Danchi* and *Danran* (a daycare facility). Equipped with the fundamental knowledge and background information relevant to this year's theme provided during the pre-course education, students concentrated on doing field research, generating ideas, trying their ideas and refining them throughout the main course.

Students were continuously challenged by local stakeholders, faculty and peers of different academic and cultural backgrounds to rethink their ideas. In this process, they learned multiple, logical, reflexive and critical perspectives which they needed when applying a technology, or creating a new product collaboratively. Indeed, not just focusing on what a technology can do, but identifying "needs and seeds" in a target population by asking [ethnographic] questions (e.g. Green & Bloome 2015), like "what kind of people can use it, when, for what reasons, under what condition, in what kind of environment," is an essential process of learning in collaboration with not only peers but also with locals.

Green, J. & Bloome, D. (2015). Ethnography and ethnographers of and in education: A situated perspective. In Flood, J., Heath, S. B., & Lapp, D. (Eds.), Handbook of research on teaching literacy through the communicative and visual arts. New York: Macmillan Publishers, pp. 181-202

日本は高齢化社会であるとよく耳にするだろう。内閣府の「平成 28 年度版高齢社会白書」によれば、2015 年の時点で実に人口の 26.7% が 65 歳以上となっており、高齢者の割合は今後も数十年は増え続けるという。そのため、政府以外にも医療、工学、教育など様々な分野において、現在また今後の高齢化社会の課題を改善するために色々な取り組みをしている。

一方、高齢化の問題は生活空間自体に関してもいえることである。50 年代以降の高度成長期に建設された家々や団地の老朽化は、東京圏郊外やその他の多くの地域で抱えている問題である。国土交通省や多くの NPO 団体により、高齢者向けに建物の改修や日常生活へのサポートなどが実施されている。

Global Study Program (GSP) は、2011 年から千葉大学が様々な協定校と開講している短期国際協働学習プログラムである。昨年度は健康と安全に関わるスマートフォンアプリケーションというテーマで、マレーシアのマルチメディア大学（MMU）で開催したが、2015 年度は MMU を千葉に招いての実施となった。本年度のテーマは「生活空間とヘルスケアテクノロジー」とし、千葉大学と MMU の学生の混成グループが、人口と建物という二つの高齢化の課題における様々な規制や制限を念頭に、実際の生活の場と生活者の現状をより改善するアイデアを出すことを目標とした。

前年度マレーシアで実施した GSP での経験と知識をもとに、本年度はマレーシアや日本の状況の比較、千葉市におけるヘルスケアと住居・生活の現状の学習、さらに実際にデイケアサービス「だんらんの家」と千葉市高洲第二団地で参加型のリサーチをすることで、より実践的かつ批判的視点からテクノロジーの応用を捉えることを目指した。事前授業では Skype 等を用いながら、基礎的な学術知識やターゲットとなる地域や場の背景について学習した上で、実際に MMU が千葉に来る 2 週間を協働フィールドリサーチ、アイデア生成、現場に関わる人たちとのアイデアについての検討、そしてグループでのアイデアの生成に当てた。

医療・介護工学の分野では、介護ロボットや医療補助機器など、様々な技術開発が日々なされてきている。しかしながら、その開発や実用化においては、様々な制約がかかる。例えば、費用、使い易さ、大きさ、社会倫理など、単純に技術的に可能であるということでなく、人々の生活やその空間に適しているのかということは、大きな課題とされている。異なる学術・文化・社会的背景をもつ現場の人たち、教員また学生らと交わりながら、自分たちのアイデアの練り直しを繰り返すことで、テクノロジーの応用（あるいは何か新しい製品制作など）の際に必要な多角的、論理的、省察的、批判的視点を養うことを目指した。その際には、人類学的手法であるエスノグラフィで用いる問いである「どんな人たちが、いつ、何の理由で、どういった状況で、どういう環境で利用するのか」を常に考えることで、対象となる利用者らのニーズ（必要性）を理解した上で、シーズ（種）を考えた。単に学生同士で協働的に学ぶだけでなく、フィールドにおける様々な関係者らとの協働学習という意味で、このプロセスは不可欠であったといえる。

Schedule of Activities

	Day	Contents
Pre-Course	17 Dec	Orientation
	10 Jan	Virtual Lecture: "Cultural Presentation"
	5 Feb	Virtual Lecture: "Material Sheets"
	24 Feb	Dr. Yu on "Designing Home Healthcare Device System: Viewpoints and Cases" (skype session with MMU)
	7 Mar	Dr. Suzuki on "Tasks and Efforts in Japan's New Towns" (skype session with MMU) Cultural Presentation Workshop 1
	8 Mar	Mr. Yamaguchi on "Issues and Status Quo of Elderly Care Center" (video for MMU) Material Sheet Workshop
	9 Mar	Dr. Gaitanidis on "Medical Technologies & the Elderly in Living Space: The Human Factor" (video for MMU) Cultural Presentation Workshop 2
Main Course	**March**	
	14	Arrival of MMU students and extracurricular activities
	15	Cultural Presentation Workshop
	16	Guided visit of the Edo-Tokyo Museum and Mirai Science Museum, and welcome party in Odaiba
	17	Group presentations on Japanese and Malaysian cultures, workshop on "culture"
	18	Mr. Funago on "ALS and Technology" and field research 1 in *Danran* (Higashi-Chiba and Takahama)
	19	Dr. Lim Way Soon and Dr. Lim Chot Hun on "Status Quo and Issues Surrounding the Elderly in Malaysia" Field research 1 at *Danchi* (UR Takasu Daiichi)
	20	Workshop and mid-presentation 1
	21	Free day
	22	Workshop and Field research 2 at *Danran/Danchi*
	23	Workshop and Field research 3 at *Danran/Danchi*
	24	Workshop and mid-presentation 2
	25	Final presentation preparation
	26	Final presentations and pamphlet making
	27	Farewell party at Chiba U.
	28	Departure of MMU students from Japan
Post-Course	12 Jul	Feedback by Dr. Suzuki Student Reflection on GSP (skype session with MMU)

Local Scientific Comittee

- Dr. Yu Wenwei (Chiba U.), medical engineering on home healthcare device system; mediator for engineering lab visits, Mr. Funago's talk and field research at *Danran*.
- Dr. Suzuki Masayuki (Chiba U.), architecture of housing and community revitalization; mediator for field research in *Danchi*

This program would not have happened without the following collaborators (in alphabetical order):
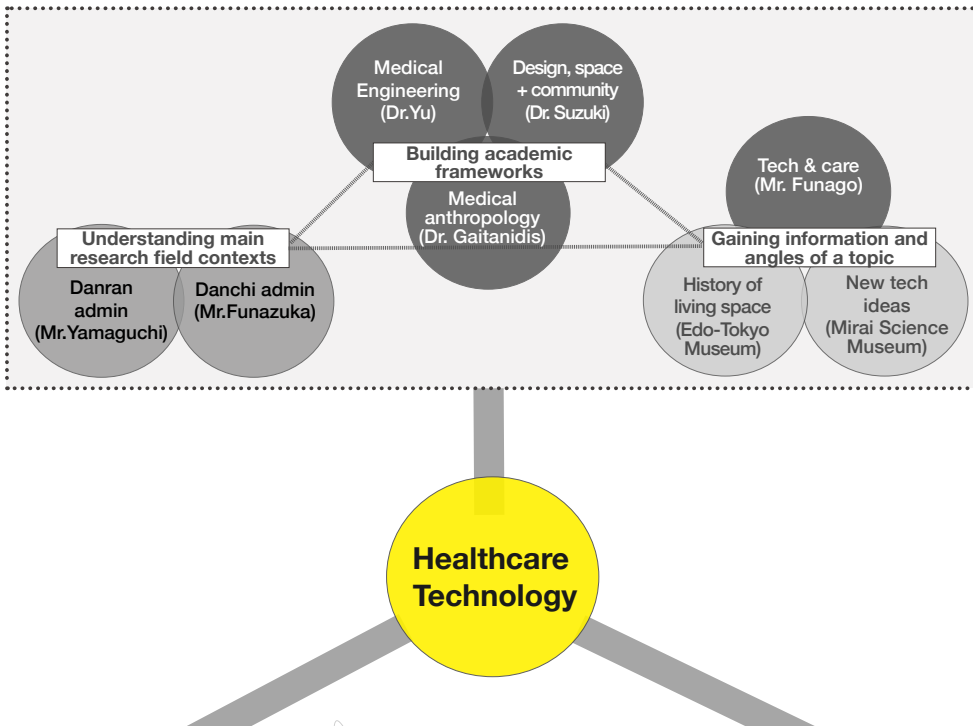
- Dr. Agata (Chiba U.) and his staff of WiCAN "Danchiba" events in *Danchi*
- Mr. Funago (Earth Co.), Ms. Sazuka (Earth Co.), members of Team FunaGO, and Dr. Suwa (Chiba U.)
- Mr. Funazuka (UR) and his staff at UR Takasu Daiichi Danchi
- Prof. Tokita (Chiba U.), Mr. Yahiro (AIST), Dr. Uruma (Chiba U.), Dr. Kawahira (Chiba U.), Dr. Motomura (AIST) and staff of the health booth event "Kenko Yatai" at Danchiba
- Mr. Yamaguchi (Nemotaka Service), Mr. Yamada, the staff and users of *Danran-no-Ie* in Higashi-Chiba & Takahama, and Dr. Ishimaru (Chiba U.)
- Dr. Yu's staff and students at Engineering labs at Chiba U.

Organizing Committee

- Shao-Kobayashi, Satoko (Chiba U.)
- Igarashi, Hiroki (Chiba U.)
- Gaitanidis, Ioannis (Chiba U.)
- Lim, Way Soon (MMU)
- Lim, Chot Hun Dave (MMU)

Conceptual Components of Program

- **Medical Engineering (Dr.Yu)**
- **Design, space + community (Dr. Suzuki)**
- **Tech & care (Mr. Funago)**
- **Building academic frameworks**
- **Medical anthropology (Dr. Gaitanidis)**
- **Understanding main research field contexts**
- **Gaining information and angles of a topic**
- **Danran admin (Mr.Yamaguchi)**
- **Danchi admin (Mr.Funazuka)**
- **History of living space (Edo-Tokyo Museum)**
- **New tech ideas (Mirai Science Museum)**

Healthcare Technology

Danchi

http://www.ur-net.go.jp

Like many other formerly public *Danchi* built after 50s, Takasu Daiichi Danchi is managed by UR (Urban Renaissance Agency). These commonly five-story apartment complexes withhold a large population of over-65-year-old residents. UR and NPO attempt to match the residents' needs by providing elderly-friendly rooms, delivery service etc., but human and financial resources are limited.
UR 高州第一団地は 65 歳以上の居住者が顕著で、UR や NPO が高齢者向け住宅、宅配サービスなどを提供しているが、資金繰りや人的資源の限界等が課題となっている。

CHIBA U. 千葉大学　CHIBA 千葉市

Danran

http://danrannoie.com/home/higashichiba.html

Danran-no-Ie is a private franchise company, offering a single-house cozy day service for the elderly. Higashi-Chiba and Takahama offices are part of a branch, Nemotaka Service. Limited human, financial and architectural resources, frequent change of rules by the government are major challenges for each office, on top of their daily tasks to make the place safe and enjoyable for the elderly users.
だんらんの家は一戸建て住宅の介護施設を展開するフランチャイズ企業。東千葉と高浜事業所（ネモタカサービスが統括）では、日々の安心で安全なサービスに加え、資金、人的資源、建物の制限や朝令暮改等が課題とされている。
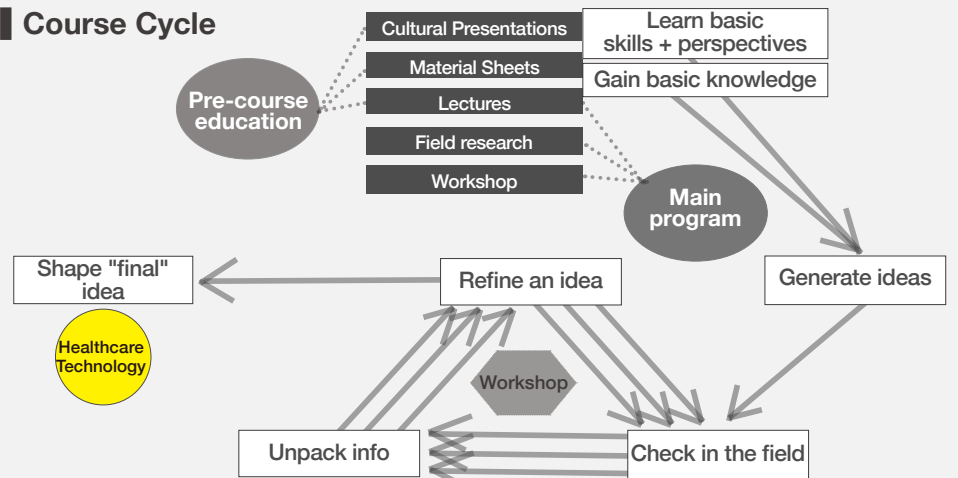
Preliminary education aimed to built 1) a basis of collaborative learning, and logical and critical thinking through preparation of cultural presentations, and 2) basic knowledge on the topic from different angles. Aside from listening to lectures with different angles of vision, students engaged in collecting information related to innovative technology, living space and elderly care in Japan, Malaysia and other parts of the world. Also, they read up on basic information about the two main research fields: *Danran* and *Danchi*.

In the main program, at first, students had learned about the history of living space (Edo-Tokyo Museum) and new technology (Mirai Science Museum and robotics medical engineering labs). Then they visited research sites (*Danran* and *Danchi*). Students were asked to suggest specific technology ideas (system or machinery) to each research context. Initially, all students visited both research sites in order to share the knowledge of each other's contexts and of different/common issues these sites withheld. Then, three groups focused on *Danran* and the other three on *Danchi*. Feedback between groups was made possible by pairing each group from one site with a group from the other site. Students visited their research sites on three separate days to consult with locals, and refine their ideas through workshops. In this process, students collaborated not only with each other, but also with people in the fields.

事前教育は二つの構成要素を中心としており、１）協働学習、論理性、批判的視点の基礎を文化紹介準備において身につける。２）テーマに関して異なる観点から基礎知識を身につける、という事に焦点を当てた。後者に関しては、多角的に講義を受けるだけでなく、日本、マレーシア、その他の国々における斬新なテクノロジー、生活空間や介護について、自分たちで情報収集し、マテリアルシートを作成した。また、フィールドリサーチ先であるだんらんの家と UR 団地について、基本情報を事前準備の段階で学習した。

インプログラムでは、まず生活空間の歴史（江戸東京博物館）やテクノロジーに関係する場（例：未来科学博物館、ロボット・医療工学研究室）を訪問した。その後、だんらんの家と団地でのフィールドリサーチとワークショップのサイクルに集中した。学生らには、各フィールド先で取り入れられるようなシテクノロジー（システム及び機器）を考えることが課された。全学生が両方のフィールド先をまず訪問し、互いの現場の状況、共通点や差異を理解するようにした。それから、３つのグループはだんらんの家、その他の３つのグループは団地に焦点を当てるようにした。異なるフィールド先をあてがわれたグループ同士がピアグループとなり、互いにフィードバックをするように組む事で、協働を多く起こすようにした。学生らは３回同じフィールド先に戻り現場の人たちと話し合い、その間にワークショップをしながら、アイデアの再構築を繰り返した。この過程を通し、学生間で協働するだけでなく、フィールド先の人たちとの協働も最終プロダクトへ導く大きな要素となった。

Course Cycle

- **Pre-course education**
  - Cultural Presentations
  - Material Sheets
  - Lectures
  - Field research
  - Workshop
- **Learn basic skills + perspectives**
- **Gain basic knowledge**
- **Main program**
- **Generate ideas**
- **Shape "final" idea**
- **Refine an idea**
- **Healthcare Technology**
- **Workshop**
- **Unpack info**
- **Check in the field**

Pre-Course Lectures

Dr. Yu's lecture was on robots and technology in healthcare. Advanced technology such as biomedical robotics and medical engineering is crucial and essential to solve problems associated with aging, which is a serious and important issue in Japan. Dr. Yu explained about robots that he had developed such as tele-care support robots, which automatically follow patients. Another aspect of his lecture was how needs and constraints affect the design variables. In particular, his concepts, "needs and seeds" were very useful for thinking about potentials of innovation. These concepts made us think of the limitations of cost, environment, ethics, physical ability of the patient and cultural readiness. (Kazuomi & Che Kok)

Dr. Suzuki delivered his lecture on the history and status quo of *Danchi*. He also discussed some topics in real estate like living quarters, community and life-styles. He said that the *Danchi* played an important role in the development of the Japanese economy. So if one understands the history of Danchi, they will be able to understand the economic history of Japan. In his lecture, Dr. Suzuki focused on the issues related to the elderly and their living space, such as narrow stairs and old facilities. Dr. Suzuki's framework built along the "soft vs. hard" and "town-based vs. individual-based" axis, helped us brainstorm ideas and concerns that might arise during the fieldwork for this GSP. (Ryoto & Jiaxin)

Mr. Yamaguchi introduced issues faced at his six daycare centers for elderly with varying degrees of dementia at *Danran*. Each center is required to have a dining room and other particular areas so that they can provide a comfortable space for their elderly clients. However, there are some issues -- steps leading to the entrance increase the risk of accident, and a bathroom space is small. Also, some users have tendency to wander off during their stay, and legislation of daycare facilities, enforced by the local government, is subject to frequent modifications and updates. Through Mr. Yamaguchi's lecture, we learned these issues are common at many small daycare centers. (Benny & Yoshitaka)

Dr. Gaitanidis's lecture was titled "Medical technologies and the elderly in living space." We learned the importance of gathering information from various sources in order to identify issues. Particularly, information collected from fieldwork is quite important. His lecture also showed us some issues to consider such as living space, aging, technological stereotypes, and different perspective towards technological facilities. We learned that some technology came to be accepted to fulfill purposes for users that engineers didn't initially envision. This made us think that the existing technology has wide potentials to be used for different purposes. This perspective became useful to invent ideas for the final project. (Yusuke & Zhi Hao)

兪先生の講義：すでに知られている通り、日本では高齢化社会の問題は深刻で重大なものになっています。この課題に対応するためにバイオロボティックスや医工学といった発展的技術は必要不可欠です。兪先生はこの領域についての講義と、ロボットの事例紹介して下さりました。その一つが自動的に患者を追跡する遠隔ケア支援ロボットで、これはお年寄りの補助につながる研究です。その他、私たちにとって重要だったことは、どのように需要と制約がデザインの多様性に影響するかということです。特に、需要と発想という概念が大変有益でした。この概念を通して、コストや環境、ロボットに対する倫理感、患者の身体的、精神的側面といった制約を考えなければないことを学びました。(和臣 & Zi Guo)

鈴木先生より団地の歴史と現状について講義を受けました。また、団地内のコミュニティや生活に焦点を当て、いくつか問題点を取り上げました。団地は日本の経済や生活の歴史を語る上で欠かせないものであり、そこに日本社会が抱える課題が多く存在しています。団地という日本の住宅事例を事前に両国の学生が学ぶことで、お互いに新たな発見や疑問点を把握でき、GSP 本番ですぐに協働学習に取り組むことができました。団地内に住む高齢者の生活と、狭い階段や古い設備などを結びつけ、高齢者が団地に住み続けるという状況から想定される課題を２つの軸—ソフト面とハード面、そして個人と街）で考え分類しました。課題を分類することでより実現可能な解決案を出すのに大いに役立ったと思います。（諒士＆ Jiaxin）

山口さんの講義：千葉市で６つの介護施設、団らんの家の統括管理者である山口さんからお話を頂きました。この介護施設は、ダイニング、機能訓練室、家具などの運営に必要な施設を備え、利用者に快適な環境およびその施設を提供している一方で、様々な課題があるとのことでした。例えば、出入り口や浴室などにある段差が転倒などの事故のリスクとなっていたり、化粧室と浴室がとても狭いという点です。また、利用者の一部には介護施設を抜け出し徘徊してしまったり、自治体の介護施設に関する法律がよく変更するという点もあるとのことでした。そのため、介護施設にはたくさんの課題があり、お年寄りの介護ためにも解決されるべき点があることを学びました。（Benny & 佳孝）

ヤニス先生の講義では、問題点に気付くためにはまず様々な分野の資料を集めることが重要であり、より良い解決策に導くためにはフィールドワークで得られた情報も必要であることを学びました。高齢者のための空間スペースと医療技術を通して、生活空間、高齢化、技術の固定概念といった技術や施設に対して異なる視点で考える必要があるいくつかの課題を示していただきました。本来技術者視点で開発されたものが、他の目的でしようされていることを例に、既存の技術も、他の目的で使用することが可能であるかもしれないことを学びました。この視点が本授業でのテクノロジーのアイデアを出すため重要なものとなりました。（祐介＆ Zhi Hao）

We began to prepare for our cultural presentation based on virtual lectures during the preliminary course. Our group was composed of three members from each university. We focused not only on our similarities and differences between our national cultures such as festival, food, landmark, and clothes, but also on our logic. We managed to discuss our presentation through SNS services such as LINE, Facebook and Skype. Despite the tight schedule and physical distance between us, we took the time to interact and work together on the assignment. After MMU students came to Japan, we continued the discussion face to face and deepen our argument more. Subsequently, we were able to finalize our slides after consulting with our faculty members. In the end, we were able to understand different perspectives of culture, which could not be learned from Wikipedia or guidebooks. (Flona & Takanatsu)

オンラインで実施された講義に基づき、MMUの学生が来日する前から、各大学から3名ずつのグループを構成し、文化紹介プレゼンの準備が始まりました。テーマは、各グループで関心のあるものが選ばれ、フェスティバル・食・名所・衣服に決まりました。マレーシアと日本の間の文化の共通点や相違点に注目するだけでなく、論理的な展開が出来るよう心掛けました。そのため、LINE、Facebook、Skype などの SNS を駆使して、議論する必要がありました。期末テストと重なるなど、厳しいスケジュールのなか、限られた時間を有効に使いました。MMU の学生が来日した後は、先生方の意見を参考にしつつ、効果的に議論を深め合うことができました。その結果、Wikipedia やガイドブックに載っていない、異なる文化や文化の見方の理解を深めることができました。(Flona & 嵩夏)

Mr. Yasuhiko Funago, a man who suffers from amyotrophic lateral sclerosis (ALS), which has left his entire body paralyzed except for his face, gave us a lecture. His dream of playing guitar was realized by collaborating with an engineer to design and build a guitar that can be played by contracting facial muscles. When he started playing this custom-made guitar, both Mr. Yasuhiko and the engineer burst into tears of happiness, having realized the importance of matching the design with the need. Mr. Funago said that what he found out through many years of struggling with disability is that "Everyone will be disabled one day." With age comes loss of function. Engineers have to create with the disabled in mind. He taught us that the most important thing is to understand what people with disability really need. (Soraya & Hui Qi)

ALS を患い、顔以外、全身が現在麻痺している舩後靖彦さんが我々の為に講演を開いてくれました。彼の夢はギターを再び引くことで、ついに顔の動きだけで弾けるギターが彼の為に開発されました。そのギターと初めて対面した時、彼自身と開発者は本当に舩後さんが欲しがっていたものを実現できたという歓喜の涙を共にしたそうです。これは障がいをもつ人にとって、本当に欲しいものが実現できたという意味で最も嬉しかったという事です。障害を患ってきた長年の経験から舩後さんは、「何人もいつか必ず障害を患う」といいます。誰も歳をとり、歳をとるほど、多くの問題を抱える。そして工学というのは本当に障害者に寄り添って新しいものを生み出すべき。まず、最初に我々は何を必要とされているかに向き合い、そして対象者に寄り添って考えていかなくてはならないという最も大切なことを学びました。(昊哉 & Hui Qi)

We separated to visit two daycare facilities of *Danran* in Higashi-Chiba and Takahama for our fieldwork. Both of these *Danran* are nicely decorated with their elderly clients' handicrafts. To understand the daily routine, we joined some activities such as stretching exercises with the elderly clients. After that, the group in the Higashi-Chiba *Danran* made crystal bottles and the group in Takahama's *Danran* made *dorayaki*. Staff brought us around the facilities, and we asked questions about how the staff support the elderly and what difficulties they face (e.g. privacy issues in each room and slippery floors in the bathroom). We learned how a private house is transformed into a day care house, which was very interesting. This fieldwork trip was helpful to identify issues that employees and clients of the daycare center face. (Tinglin & Chia Yee)

私達は介護施設の調査のため、二つのグループに分かれ、それぞれ東千葉と高浜のだんらんの家でフィールワークを行いました。施設入居者の高齢者の日常を理解するために、軽い運動を一緒に行いました。また、東千葉の方では小物を作り、高浜の方ではどら焼きを作ってだんらんの家での生活を体験しました。その後スタッフと一緒に各部屋を回り、それぞれの部屋で気付いた点やどんな困っている事があるか、またそれに対してどんなサポートをしているかを質問しました。特に浴室をはじめとする水回りや使用者のプライバシーに関する課題が多くあることに気付きました。また私達は同時に民家を介護施設に変える際の多くの工夫に気付きました。このフィールドリサーチによって、現場で実際に直面している課題を発見することができました。（廷林 & Chia Yee）

The purpose of this second and third day of fieldwork at *Danran* is to introduce our groups' ideas for tackling the issues we learned about on our first visit to the staff and receive their feedback. During our visits, we explained our idea for a monitoring system to help keep track of those clients who have tendency to wander off. Mr. Yamaguchi commented that an installation at the entrance is enough and it would be good if the system is not costly. Moreover, responses received from other staff members were not all positive. During these two fieldwork days, we observed several things in detail. For example, the elderly people's well-being, structural design and general environments. We felt thankful for the opportunity to further visit these places because we could reflect on our initial ideas and find other issues that we could help solve for our final products. (Takeshi & Janet)

このフィールドワークでは、だんらんの家に潜んでいる課題から得た私たちの課題解決のアイデアを紹介し、施設の方からフィードバックをもらうことでした。私達のグループは施設入居者の方が施設から出て徘徊してしまうという問題から、監視システムの案を提唱しました。山口さんから頂いたフィードバックでは、それは入口につけるだけで良く、もしそのシステムがコストがかからなければ素晴らしいとのことでした。また他のスタッフの方からはこの案は好ましくないとの反応を頂きました。だんらんの家では、施設入居者方の状態、家のデザイン、雰囲気等、細かい様々なことを見ることができました。だんらんの家に何度も訪問出来たことで 自分たちのアイデアを省察したり、潜んだ課題を発見したりでき、解決のためのより良い考えを練り直すことができました。（勇志 & Janet）

My (Shan) first impression of the *Danchi* was that it was somehow similar to the flat system in Malaysia with some variances. Not until visiting the *Danchi* did I (Satoshi) come to understand the life styles of those staying there. Mr. Funazuka showed us rooms in the *Danchi*, some were specially renovated models for the elderly. It was a surprise for us to find out that these renovated rooms are offered by the *Danchi* management. We learned that the number of elderly people living by themselves is increasing in Japan. We also found out that there are regular activities such as health check-ups or sports events held at the *Danchi*. Although we initially thought that people in the *Danchi* are not fulfilled with their life there, it was unexpected to us to know from our interview response that they are satisfied with their life. (Satoshi & Shan)

団地を私が初めて訪れた時に印象的だったのは、いくつかの違いはあれど、マレーシアと日本の借家での家賃を払う体制が似ていることでした（Shan）。実際に団地に行って初めて、そこでの生活を理解することができました（哲）。団地は高齢者向けに建て替えられており、その建て替えサービスが団地の経営によって引き受けられていることに私たちは驚きました。日本では一人暮らしの高齢者が増えており、その多くが孤立していると聞きます。そのため住人にインタビューをして、多くの高齢者の方が現在の暮らしに満足していると知った時は意外に思えました。更にインタビューを通して、その団地では定期的に健康診断やスポーツイベントなど、様々な取り組みも行われていることも分かりました。(Shan & 哲)

After the first day of survey in the *Danchi*, each group came up with product ideas to solve the current issues faced by the elderly people living in the *Danchi*. On the 2nd and 3rd day, each group prepared some questionnaires to find out how feasible our ideas were and how they would be accepted by the residents. The results revealed that their views were different from ours. Most of them were satisfied with the current situation and did not wish to significantly alter their daily lifestyle. Thus, we improved and enhanced our product ideas according to their feedback. This helped to fuel our imagination. It is important to hear the residents' opinion of the product ideas since they will presumably be the main users of the product. From these activities, we also noticed that cooperating with team members is essential. (Yukiko & Zheng You)

1回目の調査を元にアイデアを改善し、再度インタビューを行いました。私達の予想に反して、住民のほとんどの人が現在の生活に満足していて、多くの方々が日々の生活が変わってしまうことに抵抗感を持っており、変化を望んでいないと分かりました。このとき私達の考えは実際に住んでいる人と視点があまりにも違い、利用者側の立場に立っていなかったと気付かされ、自分たちの考えの甘さを痛感しました。その後フィードバックを元にアイデアを改善し続けました。このフィールドリサーチは思った以上に大変でしたが、新しい物の見方と、想像力豊かに問題解決に臨む姿勢を学ぶことができ、貴重な経験となりました。主な利用者であるお年寄りと同じ目線で何が必要かを考え、利用者の声に耳を傾けること、そしてチームメンバーと協働してアイデアを出し合うことも同様に重要だと思いました。（優喜子 & Zheng You）

Prep for Final Presentation

Final Presentation

After the 3 days of fieldwork loops, it was time for us to prepare for the final presentation. The feedback we got from respondents, lecturers, and other groups was very important and influential to the direction of changes in our ideas. The final presentation was divided into two components—the process and the main idea. Before we actually started making the final presentation slides, we sorted out the ideas we got from our past activities of field research, lectures and feedbacks. The experiences and thoughts from each member were combined and assimilated into a group mind map. The main idea part included its functions, working principles and detailed design. It had to be comprehensive yet easy to understand by everyone (e.g. by making the slides in both English and Japanese). Thus, the visualization step was a crucial component of crafting the presentation. (Eric & Chihiro)

3回にわたるフィールドワークのループが終わり、私たちは最終プレゼンテーションの準備に取り掛かりました。現場の方々から得た様々な反応や講義、他のグループから得た意見やアイデアをもとに何度も変更を加えつつ最終的なアイデアを固めていきました。最終プレゼンテーションでは私たちのアイデア、及びそのアイデアを完成させるに至った過程について紹介しました。過程部分を考えるにあたってまずそれまでの課外活動や講義で得た情報を書き出していきました。一人一人の経験をもとにプレゼンテーションの流れを考え、プレゼンテーションの後半では私たちの最終的なアイデアについてその機能、原理、デザインなどの紹介を視覚化して、プレゼンテーションを見る全ての人に分かり易くなるよう（例えば、日英語載せるなど）工夫しつつ作成しました。(Eric & 千尋)

After several days of fieldwork and workshops, finally the final presentation day came. We felt nervous for our final presentation as we had little time to prepare for it. But, we had received a lot of comments from faculty members for the past two weeks, so each group tried their best. Each group was given 15 minutes to present their prototype in health care and living space. Everyone was focused during the final presentation and we were impressed by each group's prototype and how they function even though each idea had their pros and cons too. Mr. Yamaguchi and Dr. Yu came for the final presentation to evaluate and comment on each group's prototype and what further improvements could be considered. During the post-course education, Dr. Suzuki also provided crucial feedback to our ideas. (Keith & Gian)

数日間のフィールドワークやワークショップの後、最終発表の日が訪れました。私たちは発表のために準備の時間があまりなかったので非常に緊張しました。しかし、私たちはこれまでの二週間で、先生方から事前に多くのコメントをもらっていたため、各グループとも発表の準備や最終発表で最善を尽くしました。各グループはヘルスケアと居住空間における新しいテクノロジーのアイデアを１５分間で発表しました。私たちは最終発表に集中して臨み、各グループの案とそれらの機能に感銘を受けました。勿論、それぞれの案には長所と短所があり、最終発表にいらしてくださった山口さんと兪先生も、それぞれのアイデアを評価しつつ、改善のための具体的な考えを提供してくださいました。また、事後教育においては、鈴木先生からも異なる視点から、今後の学習にも役立つフィードバックをいただきました。(Keith & ジアン)

Collabo-rativity

Before the main course of this GSP, we didn't know very much about each other's culture. Since the groups for the initial cultural presentation were made up of a mix of students from Chiba U. and MMU, we tried to come to mutual understanding and agreement among group members by using LINE and Skype. Before we actually met in Chiba, everyone worked on their own parts in their respective country. Then, after meeting we gathered at Chiba U., and discussed, face to face, the remaining details such as slide order and presentation delivery. Even though we completed our assigned parts individually, we still asked for each other's opinion and kept each other updated. In GSP, collaboration between participants is important. And each member's responsibility for their group makes their team stronger and improves the product outcome of the group. Also, healthy competitiveness came to exist between groups because everyone wanted to be the best! (Joanne & Risa)

The fieldwork was a big challenge for most of the students from Malaysia because they faced difficulties communicating well with local people in Chiba. This challenge facilitated cooperation between Chiba U. and MMU students. Chiba U. students played multiple roles in the field—one is as an interpreter for MMU students in order to interview local elderly people. We conducted fieldwork three times, and after each field research, we discussed the feedback obtained from local people and our instructors. Ideas generated from discussion actually set the direction and eventually formed our final idea. (Siang Hoe & Reina)

One of the best ways to succeed in many endeavors is through good communication. But, communication was the main hurdle that was faced during workshops. Without sufficient communication, it was difficult to come to an understanding among members. Sometimes, a translator and visual aids were needed so that the opposite parties could understand what was being shared. But, in spite of all the problems that were faced, we still managed to learn and create understanding among ourselves. The determination of understanding among the group members was so great that nothing could stop us, not even our different language or cultural backgrounds. That's why we feel that good communication is the key to all problems. (Edmund & Aruto)

今回は千葉大学が春休みに入った一方、MMU ではテスト期間が始まるという、文化紹介の事前準備をする上で打ち合わせが難しい状況になってしまいました。そのため、まずはそれぞれの担当箇所をメインプログラム前までに完成させ、千葉で会ってから、スライドの紹介や発表方法といった細部を詰めていきました。プログラムが開始してからプレゼンテーション当日まで時間があまりありませんでしたが、ギリギリまで良いものに仕上げようと互いに意見を出し合いました。GSP ではチーム内でのメンバー協力が必要ですが、個人の責任感がチームワークを強くし、アイディアをより良いものにすると言うことができます。はじめの課題である文化紹介での経験がベースとなり、メインプログラムの協働的な活動に繋がっていきます。(Joanne & 里彩)

今回の協働学習では、現地の人々や高齢者の方のニーズを理解することが必要とされるので、言語を通じて意思疎通が難しかった MMU の学生にとってはフィールドワークは大きな挑戦となりました。言語が異なる現地の人々とコミュニケーションをとるのは困難に感じていましたが、このような時こそ協働作業が必要となります。千葉大生は通訳の役割も担い、三度に渡りフイールドワークを行いました。自分自身の考えや注目した点をもとに現地の人へ質問し、それをもとにグループで議論を重ね、ついに実用化を目指したヘルスケア機器のアイデアをそれぞれのグループが導くことができました。これは協働学習あってこその成果だと思いました。(Siang Hoe & 礼奈)

私たちは十分な意思疎通を取ることが、ワークショップを成功させる最善の方法の一つだと思います。なぜならワークショップにおいて一番の課題となるのがやはり意思疎通の問題だからです。満足な意思疎通ができなければ、相互理解が出来ないことはもちろん、誤解が生まれることもあります。そうならないために、相手に自分の考えが十分に伝わってないときには、翻訳機を使ったり、絵を描いたりして、互いの考えをしっかりと共有しようとすることが重要です。私たちは、この2週間こうして、共に学び、互いを理解してきました。そのおかげで、互いの言語や文化など背景の違いを乗り越えて、ワークショップを行うことができました。語学力だけでなく、様々な手段を用いて互いに意思疎通を取ろうとすることが、GSP においての鍵になると思います。(Edmund & 有音)

Final Products

Team 1 (Jiaxin, Joanne, Mu, Takeshi, Yusuke)
Danran-no-ie Information Application (DIA)

An application that enables the user to search and compare for the house they desire to be used as day care center. Users also can decrease the trips to City Hall and center of *Danran* with the help of DIA. It also helps to attract more future-to-be *Danran* managers as the whole process is being shorten and simplify. Besides, users also can subscribe for services that allow them to receive a notification whenever the law, such as the Long Term Care Insurance Law, changes. In summary, DIA can help to make caregivers' life easier.

Team 2 (Gian, Hui Qi, Janet, Yoshitaka, Zi Guo)
Portable Human Detector (P.H.D)

After visiting *Danran*, we observed some issues faced by the management team of *Danran* such as accidents always happening when the elders are out of view. Thus, we came up with an idea named Portable Human Detector. With the implementation of a Kinect sensor, our system is capable of differentiating and interpreting different kinds of human actions. How can it be portable? Kinect sensor will be attached by a gripping or mounting mechanism that allows it to be installed at any desired location. Basically, P.H.D. has two functions: a monitoring purpose and an entertainment purpose such as human-robot interaction game.

Team 3 (Chihiro, Edmund, Satoshi, Siang Hoe, Takanatsu)
BMS-II (Badge Monitoring System - II)

The BMS acts as a badge monitoring device mainly for the elderly. This device will sense the acceleration that has been given out by the elderly; with this information we will be able to determine whether the elderly is standing, walking or falling down to avoid more serious accidents. Other than that, we can also customize the design on the cover of the badge to put, for example, a family picture or a picture of your favorite artist. In the future, we may add in more functions such as blood pressure checker, heart beat checker, GPS and many more.

Team 4 (Aruto, Eric, Flona, Reina, Shan)
Danchi's Response for Emergency Situation System

This system aims to resolve the issue of receiving assistance when we are unable to reach the S.O.S. button. The dangerous area we are focusing on is the bathroom. Falling down in the bathroom has become the most common in-house accident in *danchi*, and immediate assistance from outside may be needed for those elderly who live alone. Once our Pressure Sensing Floor Mat sensed the user fell down, it will trigger the SOS alarm and request help from outside. It will be very helpful to those who lost consciousness or mobility after falling down. It can be installed without any major renovation.

Team 5 (Benny, Keith, Omi, Soraya, Yukiko)
Solitary Death Monitoring System (SDMS)

This system is used to monitor the movement and to study the daily activities of the elderly in the *Danchi*. The monitoring system functions by detecting the motion of the elderly in the *Danchi* and if the elderly does not move for a certain period of time, an alarm will be triggered to warn close family and friends. This system uses motion sensors installed in each room to monitor elderly activity. The PIR motion sensor was selected because it has larger coverage and longer range. This system is integrated with an app, so that families of the elderly are able to monitor them by using a smart phone.

Team 6 (Chia Yee, Risa, Ryoto, Zheng You, Zhi Hao)
Walking Assistive Stair Climbing Trolley

From the field research, most of the old *Danchi* do not have elevator. It is difficult for the elderly to climb stairs while carrying heavy loads. Throughout the observation, we found that most of them use a trolley when shopping. In order to tackle these issues, a trolley which is able to climb stairs is proposed. This trolley uses a three wheel mechanism which enables the trolley to climb stairs smoothly. An electrical motor is attached to the wheel. By pushing the button on the handle, the motor is activated. Thus, it assists the elderly to pull the trolley up easily.

Participants

Aruto Hori
To tell the truth, I had a difficulty following MMU students because of their speed of speaking, but I did my best. What I found important is not to give up compromising.

Benny Wei Hang Wong
I very much enjoyed this two-week program although it was tiring and some of us became sick. I would like to join this program again if there is a chance.

Che Kok Teoh
It is very interesting to take part in this GSP in Japan. I very much appreciate all the hard work done by the SENSEI, especially for the manual and reading materials.

Chia Yee Kow
I'm glad to have had the chance to participate in GSP. Because of GSP, I enhanced my communication skills and made many new friends. It was an unforgettable experience!

Chihiro Tamakoshi
It is truly one of the best experiences ever. Even if time was short, I managed to communicate and have good relationships with other members. To all members, thank you!!

Edmund Sze Hwang Teh
An impressive way to learn, between two cultures in every aspect. The time may be short, but it is very informative. Thank you for this collaboration.

Eric Soon Chai Yap
It's my first time in Japan. The weather here is cold especially when it's raining, but my heart is warmed by the people here. For sure, I will come back again.

Flona Pei Tian Low
I have learned many things through this program that I could not have gained otherwise. It was a precious experience for me. I learned more about Japanese culture as well.

Giancarlos Zapata
For me, it was a great experience to join this program because I'm interested in not only healthcare situations, but also knowing more about different cultures.

Hui Qi Choo
I experienced the innovative and creative technology, which helps the care receiver and learned how to get along with Japanese students through teamwork.

Jiaxin Tan
Memories, good or bad, they're all memorable. The same reason that makes me refuse to stay makes me refuse to leave now. Goodbye teammates & convenience store!

Joanne Pei Xin Tan
GSP helps me to enhance my communication skills and overcome the language barrier. The interesting way of learning makes the whole course lively and joyful!

Janet Ai Lik Tan
It was a new experience to be exposed more to technology as the GSP topic is related to robotic. It is fun experience to deal with different people with different opinions.

Kazuomi Ogawa
There was a language gap, but we could make close friendships with MMU! I learned the importance of not hesitating to use English and to communicate proactively.

Keith Swee Han Koh
Thanks to GSP, I was fortunate to experience the importance of collaborative learning. Hectic schedule and falling sick didn't stop us from bringing out our best!

Reina Wakasa
I participated in GSP for the first time. These two weeks were a great time for me. I was able to have precious experiences. A special thanks to all the members.

Risa Imai
Don't think negatively though the theme is opposite from your field. There are always things only you can do. When you find them at last, you will fall in love with GSP.

Ryoto Tanabe
GSP is so exciting for me because there are a lot of new friends, viewpoints and discoveries. I'll study in Malaysia this year, I want to cherish this community!

Satoshi Matsumoto
I hadn't communicated with people from Malaysia in English before. I felt a small language barrier but I enjoyed communicating with them and discussing during these days.

Sudarshan Vijayan
It was a new experience, doing a project in a foreign country where there is a language barrier. Thankfully with good cooperation the program was a success.

Shiang Hoe Tan
It was a very good experience and I really learned a lot of things by participating in this program. Looking forward to seeing you guys again if there are any chances.

Soraya Shizumi
Every moment spent with MMU students has broadened my mind and GSP has provided me with a precious opportunity for "intercultuality" and a wonderful spring break!

Takanatsu Mori
This program became my third experience with GSP, and I think the hardest. I was eager to improve lots of my skills. Looking back, I did my best, and feel satisfied.

Takeshi Mochizuki
GSP program is a little hard but so exciting! In GSP, we can study one theme deeply. Thanks MMU students, teachers, and other people involved in this program!

Tinglin Mu
GSP offers a great opportunity to learn how to work collaboratively, in many ways. It was one of the best experiences of my university life.

Yoshitaka Matsumura
Sometimes it was difficult to tell my idea and translate but using images or writing things down made me understand better and it was a great experiences.

Yukiko Sato
I could experience interactions with not only people from a different country but also different generations during GSP. This memory inspired me to learn more things that I haven't seen yet.

Yusuke Matsue
I'm proud that we accomplished our final task by working hard with MMU students in the dormitory until the late night. I was so happy. I recommend other people to participate in GSP.

Zheng You Lim
I love this program as all the Chiba-U students are so kind and helpful throughout this program. I also learnt how to solve problems collaboratively.

Zhi Hao Lim
It's my pleasure to participate in this program at Chiba University, I already fell in love with Japan, and also with all of the GSP members!! I LOVE YOU ALL!!!

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Contact
web : http://cie.chiba-u.ac.jp/liberal_arts/gsp.html
E-mail : cireglobal@chiba-u.jp