Expanding Access to Social Language Learning Through Maker Education

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This report describes a new service, Maker Conversation, introduced in the social learning space of the Self-Access Learning Center (SALC) at Kanda University of International Studies (KUIS) in Chiba, Japan. Drawing on the principles of Maker Education (Opperman, 2016), daily Maker Conversation sessions provide an opportunity for students to engage in casual conversation with a teacher-facilitator and other students while working on a hands-on project such as modelling, electronics, or arts and crafts. The service was introduced with the aim of increasing the variety of opportunities for authentic and situated use of English in the SALC, while also sparking students' curiosity and creativity and expanding access to students who might otherwise be uninterested or hesitant to use the space. This report explains the rationale for introducing Maker Conversation, looks at some initial feedback from students, and suggests future directions for improving the service based on our experience running it so far. This report may be helpful for others who are looking to expand the options for speaking practice and attract a greater range of users in their own self-access spaces.

Context

The Self-Access Learning Center at KUIS provides a variety of facilities and services to support students in their language learning and foster lifelong language learner autonomy. One of the aims of the SALC is to facilitate opportunities for students to interact with others in their target language. These opportunities include short, one-to-one conversation sessions with teachers from the English Language Institute (ELI) that can be reserved in advance, a language-exchange scheme with international students, student-led learning communities based around mutually-shared interests, and various workshops and events throughout the year. In addition to these, the English Lounge is an English-only social learning space that provides a relaxed environment for students to interact in English with their peers, international students, and teachers. With a philosophy that draws on social constructivist views of learning (Vygotsky, 1978), the English Lounge is a space where students can co-construct knowledge through interaction, learning collaboratively with and from each other. Some students come specifically for conversation practice with other students or with the ELI teachers on duty there, while other students come to meet and make friends, eat lunch, play boardgames, do homework assignments, and relax between classes. Conversations in the English Lounge are unstructured with no set topic, and students are free to come and go as

they please. Until the introduction of Maker Conversation, there were no regularly planned teacher-led activities in the lounge area that were not solely focused on conversation.

All facilities and services in the SALC are optional for students to use and are non-incentivised. While there are many students who actively take advantage of the opportunities mentioned above for language practice, there are also large portions of the student body who do not. Some students choose not to partake because the offerings do not meet their learning needs, goals, and interests, while others recognise the potential benefits but are hesitant to join. Previous research in the SALC (Mynard et al., 2020) has shown a variety of reasons for this hesitation, including students' worries that their language level is not high enough to participate, concerns about their ability to sustain a conversation and find topics to talk about, and anxiety about navigating social relationships with fellow interlocutors. With regards to the English Lounge, there is also a perception of the space being a closed community of regular users that is difficult for newcomers to enter. These are common challenges faced by social learning spaces (Bibby et al., 2016; Murray & Fujishima, 2016). In this context, the Maker Conversation service was introduced to offer an alternative style of language practice that takes advantage of the affordances of Maker Education to capture students' interest and ease access to the social learning space for otherwise-hesitant or uninterested students.

What is Maker Education?

Since the early 20th century, educational theorists such as Dewey, Montessori, and Froebel have highlighted the value of hands-on experiences as a central part of the learning process. Taking this concept even further, Harel and Papert's (1991) *constructionism* claimed that meaningful learning occurs through the construction of sharable objects. In the early 2000s, the proliferation of makerspaces (open-access areas containing various tools and materials) enabled educators to reconceptualise the integration of hands-on construction into the learning process. Educators quickly observed that learning took place felicitously in makerspaces as learners engaged in collaborative, iterative design projects. Makerspaces were in essence social constructivist learning environments (Alley, 2018), wherein learners could engage in the co-creation of knowledge.

Based on these observations, practitioners such as Dougherty (2013) developed an educational model, Maker Education, that promotes student learning by completing collaborative, hands-on projects and using an iterative design process where students build, test, and refine their creations. These projects may range from simple to complex, and span

mediums from handcrafts to electronics and robotics. Maker Education frameworks such as *Maker Elements* (Maker Education Initiative, n.d.) and *Learning Dimensions of Making and Tinkering* (Bevan et al., 2018) emphasise the role of student agency, distributed experience, and the importance of process rather than an end product. Furthermore, collaboration and sharing are core parts of Maker Education, which "embraces the ability to share not only the projects, but the joyful process of making with videos, blogs, and pictures" (Martinez & Stager, 2019, p. 37). Researchers have found Maker Education to be a practical methodology for developing content area knowledge and soft skills such as critical thinking, problem-solving, and collaboration (see Martin, 2015).

Early in the development of Maker Education, practitioners quickly noticed that it could motivate English language learners who had difficulty participating and interacting with their peers in other educational settings (Murphy, 2018). Educators are also beginning to experiment with Maker Education to simultaneously teach content and language (Alley, 2018). Because the method is student-focused and motivating and eschews the high-pressure trappings of traditional testing, Maker Education is quite inclusive. The authors thereby felt that Maker Education had the potential to solve the problem of hesitancy in self-access learning while sparking their interest in STEAM (Science, Technology, Engineering, Art, Mathematics) topics and would be a natural extension to our SALC's social learning spaces.

Maker Education at KUIS

The Maker Conversation service was developed as an extension of the Maker Education Project at KUIS, which started in 2018 with the development of integrated classroom activities, modules, and an elective class. This project was initially funded through university grants and later by a grant from the Japan Society for the Promotion of Science. These funds have been used to purchase materials, conduct studies with participants, and further develop the curriculum.

The Maker Conversation service was trialled in the SALC in 2019 (Lege et al., 2021) and was fully introduced in spring 2022 after a Covid-related hiatus. 90-minute sessions are conducted once a day in one area of the English Lounge, with an average of 3-4 student participants each time, many of whom are regular attendees. The sessions are facilitated by ELI lecturers as part of their SALC duty requirements. A facilitator selects and prepares materials for the day's project(s), and students come and join freely throughout the period. There are a variety of activities available from technology-based projects like 3-D printing,

taking apart electronics, and working with circuits, to arts and crafts such as knitting, drawing, and stamp making. As an example, one of the facilitators brings a box of yarn, floss and tools that can be used for knitting, crochet or cross stitch, based on the inclination of different participants. See Appendix for more examples of activities. Facilitators aim to structure activities in a way that allows students to participate at their own pace and join or leave the activity at any point during the session. Facilitators play a dual role in both guiding the activity and ensuring the flow of the conversation among participants. They introduce activities, help students to choose what to do or how to do it, and provide encouragement. At the same time, they introduce new topics when the conversation lulls and try to include students who are more reticent to speak or too absorbed in their project by asking them easy-to-answer questions.

When setting up the service, we envisaged that several factors would make the program more accessible and attract students who wouldn't otherwise use the space for speaking practice. For students who might want to speak with other students but find the unstructured, open nature of the English Lounge intimidating, having a set task to focus on and build a conversation around could ease participation. In addition, the drop-in nature of the sessions may be good for busy students who want a break from studying without having to commit to an extended period of time or pre-book an appointment for the activity. Furthermore, all activities are related to STEAM subjects, which are often not offered as part of regular classes at a language-focused university. We felt that this could potentially attract students to explore new areas of interest. Students are also encouraged to make requests and give suggestions for activities, which can increase their agency in the program.

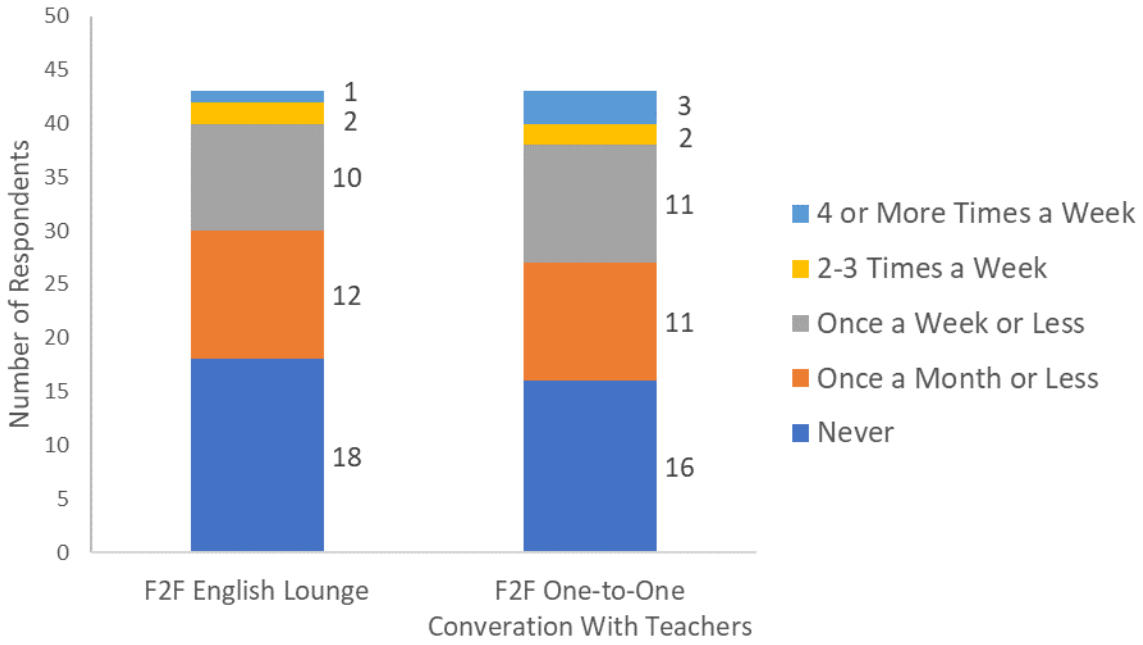
Initial Feedback From Students

The first data that showed whether the service had been successful in its aim of expanding participation came from the annual SALC student feedback survey (Nguyen & Mynard, 2023), conducted in July 2022. 43 of the 355 survey respondents stated that they had used the Maker Conversation service. Of these 43 service users, 18 responded that they never used the English Lounge, and 16 responded that they never used the one-to-one conversation appointment service with teachers (see Figure 1). Among these, 11 responded that they never used either. While not all users of the Maker Conversation service participated in the survey, it can still be understood from the results that the service had been successful in attracting a

number of students who did not use the two main other speaking practice services that were available in the SALC at that time.

Figure 1

Maker Conversation Service Users' Usage of Other Speaking Practice Services (N=43)



The general SALC survey did not collect detailed feedback on Maker Conversation, so while the data showed that a wider range of students were choosing to use the service, it didn't provide any insight into why this was the case. Beginning in September of 2022, we therefore started to gather specific feedback from Maker Conversation participants, consisting of an ongoing, optional post-session survey given as a QR code. All directions, questions, and answer choices are written in both Japanese and English. The survey gathers data to determine what sections of the student body are using the Maker Conversation service, what benefits, if any, the participants perceive they gain from it, and to what extent it fits into the range of services offered in the SALC. At the time of writing, 22 responses have been submitted. In addition to multiple choice questions regarding the respondents' year, department, and usage of other SALC services, two open-ended questions have yielded some useful insights:

1. What, if anything, do you enjoy about Maker Conversation?
2. Has Maker Conversation been useful for improving your English? If yes, in what

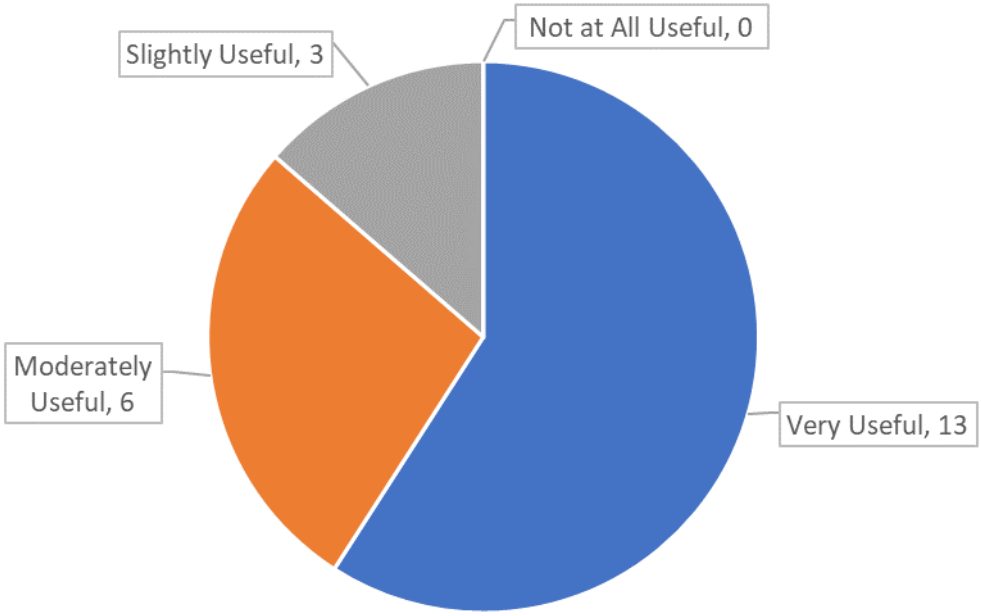
ways? If no, why not?

Of 16 responses to the open-ended question “What, if anything, do you enjoy about Maker Conversation?”, eight mentioned the hands-on project, and eight commented on the opportunity to converse in English. Examples of such comments include the following: “何か作業をしながら英語が話せて、英語で話すだけでなく他の体験もできて新しい発見ができること” [I could talk while working on something, and it wasn’t just speaking English but also having other experiences and discovering new things]; “作業しながら自然な流れで話をできるのが楽しかった” [I enjoyed having a conversation that flowed naturally while working on something]. One response mentioned that the participant particularly enjoyed having a topic for discussion. Four responses pointed out that the participants enjoyed the opportunity to speak with other students, including those from outside their own department. Three participants commented that they enjoyed interacting with teachers.

In response to the question “Has Maker Conversation been useful for improving your English?”, 13 participants responded “Very useful”, six responded “Moderately useful”, and three responded “Slightly useful” (see Figure 2).

Figure 2

Responses to the Question, "Has Maker Conversation been useful for improving your English?" (N=22)



When asked in what ways Maker Conversation was useful, students not only expressed appreciation for the opportunity to get used to natural conversation and learn useful phrases for interacting, but also mentioned several advantages that could be gained specifically from Maker Conversation and not from other SAC services and conversation activities. Responses included the following: "クラス外で先生とお話して、また作りながら話せるので、話題がつきないので英語をしゃべり続ける機会を得られました" [I could talk to the teacher outside class, and because we could talk while making something, we didn't get stuck for topics, so I had the chance to keep talking in English]; "クラフトをしないと使わない英語を知ることができたし、手を動かしながらお話できたから。でもクラフトに夢中になって話せない時があったのは少し残念です" [I learned some English that I wouldn't have used if I hadn't done crafts, and I could have a conversation while working with my hands. However, sometimes I got so absorbed in the craft that I couldn't speak, which was a bit of a shame]. According to these responses, the service provided a venue for natural English conversations and opportunities for students to learn English while working on a hands-on project, although occasionally making was so

engrossing that students had trouble simultaneously producing the target language due to cognitive load.

These survey results show that Maker Conversation is specifically beneficial for students seeking additional opportunities to converse in English while learning new skills or participating in novel activities. Participants were able to engage with content and language that was situated in a relevant, meaningful context which not only offered a situated learning environment but also seemed to create an informal, inviting social learning space where students could interact with their peers and the facilitator. Framing the service around the creation of a hands-on project rather than as a language practice session seemed to reduce barriers and encourage students to participate who may not have made use of other SAC services. However, these assumptions are based on a small dataset, so the survey will continue to be made available to Maker Conversation participants with the aim of gathering additional information on the efficacy of the service and further improving student experiences.

Suggestions for the Future of the Program

After reflecting on our usage figures and initial student feedback, we have identified areas where improvements could be made to our Maker Conversation program, primarily aimed at improving access to the service and attracting more students. A significant limiting factor is the current lack of accessibility and inclusivity caused by constraints in time and space. Students only have access to a small set of materials when a facilitator is scheduled, which restricts the number of students who can participate to an average of 4-5, depending on the activity, and limits the variety of projects that can be completed. To address this, an open-access, dedicated Makerspace would be ideal for allowing more students to join without the need for a facilitator. Alternatively, creating a moveable storage cart with a selection of materials could provide more agency for students in choosing their projects and allow Maker Conversation to reach more students.

A further issue is related to the burden on facilitators for planning and organising activities. Therefore, creating a ready-made menu of possible activities would make the project easier for facilitators to manage, thereby allowing for additional sessions and leveraging facilitators' interests and skills. Additionally, this menu could also be used by students to give them more autonomy in selecting the activities that best suit their interests. It

would also make it easier for students to try leading sessions themselves. With some training and support from teachers, this could give them an opportunity to develop leadership skills.

Another challenge with Maker Conversation is access to materials. Through funding, our project has been able to purchase 3-D printing equipment and a variety of other supplies. However, it is important to find less expensive ways to expand the diversity of materials to reach a wider range of students. One approach is to collect donations of old technology, magazines, stationery, clothes, and other materials that can be repurposed. Additionally, there are many free resources available online such as makeprojects.com, pinterest.com, and youtube.com that can be used to inspire and design activities.

Finally, we want to expand the reach of our program and access a wider range of students. Our survey indicated that the majority of participants became aware of Maker Conversation because they saw sessions in progress, meaning that they were already in the SALC. In the next year, we will be looking at advertising more widely around the campus through campus news media to attract a more diverse range of students who might not be regularly in the SALC.

Conclusion

Maker Education is a promising framework for social language learning spaces with a focus on collaboration, learner agency, and process rather than the end product. When we introduced the service, we hoped that it would not only provide an alternative speaking practice opportunity for existing SALC users but also make it easier for hesitant users to access the space and engage students who otherwise had no interest in using the SALC. Initial feedback suggests that we can celebrate some success in attracting new users, with students expressing appreciation both for the opportunity to try out a novel activity and for the way those activities help facilitate conversation. Moreover, by providing opportunities for students to engage with content from the STEAM disciplines through Maker Education projects, the service allows students to draw on their past experiences, make connections, and engage with the content and their peers in their target language. Despite the apparent benefits of Maker Conversation as an alternative social learning space, there remains work to be done so that the service can reach more students and address their diverse needs. Looking forward now to the next year of offering the service, we intend to continue to try to increase accessibility in order to reach as wide a range of students as possible, while simultaneously

working to ensure that the service provides a rich, engaging language practice environment for participants.

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Appendix

List of Some Possible Maker Conversation Activities

Crafts	● Making simple projects using everyday materials ● Paper crafts (origami, paper making, decoupage) ● Fibre arts (knitting, weaving, embroidery) ● Stamp making
Arts	● Making collages ● Sculptures ● Painting ● Drawing
Design thinking activities	● Responding to a problem or a challenge by building something, ○ e.g., building a bridge or a tower with a set of limited materials such as spaghetti and marshmallows
Using maker technologies	● Making simple Arduino projects (https://www.arduino.cc/) ● Little Bits (https://www.littlebits-jp.com/) ● Makey Makey (https://makeymakey.com/) ● Designing 3D models and printing them with 3D printers ● Using applications such as Scratch (https://scratch.mit.edu/) to create games/applications
Tinkering	● Repairing/taking apart electronics ● Demonstrating how a product works
Freeform creation	● Building using Lego, Play-Doh or other materials ● Upcycling materials into new creations