

Future University Hakodate
Center for Meta-Learning
AY2018-2019 Activity Report



メタ学習センター
Center for Meta-Learning

Think reflectively. Act collaboratively. Design the future.

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AY2018-2019 CML Committee Members

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	Masaaki Shirase (Associate professor)
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CML Committee Admin	Department of Education Affairs
CML Coordinator	Aiko Nakamura

AY2018-2019 CML Activity Report

1. Foundation for Meta-Learning

1-1. CML Orientation

Program description

University students are expected to take responsibility for their own learning and be able to make their own academic decisions. For FUN students, the first such opportunity comes at the end of their first year when they select their ‘course’. Because this is their academic major and shapes the rest of their academic career at FUN, it is important for them to choose the best-fit option. The CML orientation aims to get the first-year students started on the course-selection process. In this one-day orientation, students learn their course options and informational resources available to them. They also have an opportunity to gather firsthand information on their potential majors by attending each major’s informational session run by the faculty and senior students of the major. While hands-on collaborative activities are utilized as much as possible to facilitate students’ active participation and communication among peers, the pedagogical message consistent throughout the session is the importance of student autonomy in learning and decision-making. CML orientation staff strongly believes that helping students become aware of it is the first step toward their transition to college work where self-directed purposeful learning is the key to academic success.

This year, as an alternative to the ‘campus walk-around’ activity, we piloted a new activity in which students visited an informational session which each ‘course’ planned and organized in the way they like. This allowed each course to exhibit its unique strengths in a manner suitable for them and interacted with new students. We are planning on continuing this activity.

Overview

- Date: Friday, April 13, 2018, 10:40-16:10
- Place: Large lecture room (Kujira)
- Target students: 250 newly admitted first-year students (5 absentees)
- Orientation staff: Michiko Nakamura, Atsuko Tominaga, Yoshihito Tsuji, Aiko Nakamura
- Schedule:

10:40	Introduction (introduction of staff, goals, schedule, orientation materials)
11:00	Understanding FUN’s 5 courses (Students summarized course information on the worksheet and shared noteworthy points with peers)
11:45	Instructions on FUN 5 Informational Session (lunch break)
12:50	FUN 5 Course Informational Sessions (Students, divided into 5 groups, attended each of the five courses’ presentation sessions. Each course was able to decide on the content and the format of their session.) <ul style="list-style-type: none">• Session 1 (13:10-13:30) + 5 min. break• Session 2 (13:35-13:55) + 5 min. break• Session 3 (14:00-14:20) + 5 min. break• Session 4 (14:25-14:45) + 5 min. break• Session 5 (14:50-15:10) + 5 min. break
15:25	Personal reflection and planning for the first year (Self-reflection of today’s learning, goal-setting, plans for self-exploration) Sharing outcomes with group members
15:45	Attendance quiz and surveys

Outcomes

To better understand students’ perceptions toward their experience and learning from this orientation, a survey was conducted online at the end of the orientation. It consisted of ten 4-point-scale Likert questions (from 1 “disagree” to 4 “agree”) followed by five additional multiple-choice questions and one open-ended question.

A total of 250 students responded to the survey. Overall, students’ feedback was positive. 96% of students said they understood that they would have to make their own decisions when it comes to selecting a course (Q1.1). Similarly, a majority of students agreed that making their own decisions requires understanding the decision-making process (Q1.2; 95%) as well as knowing themselves (e.g., their own interests and strengths/weaknesses, Q1.8; 94%). Over 86% of students also reported that they were able to set their own goal for course selection a year ahead (Q1.9). The results of the Likert questions are shown in Table 1.

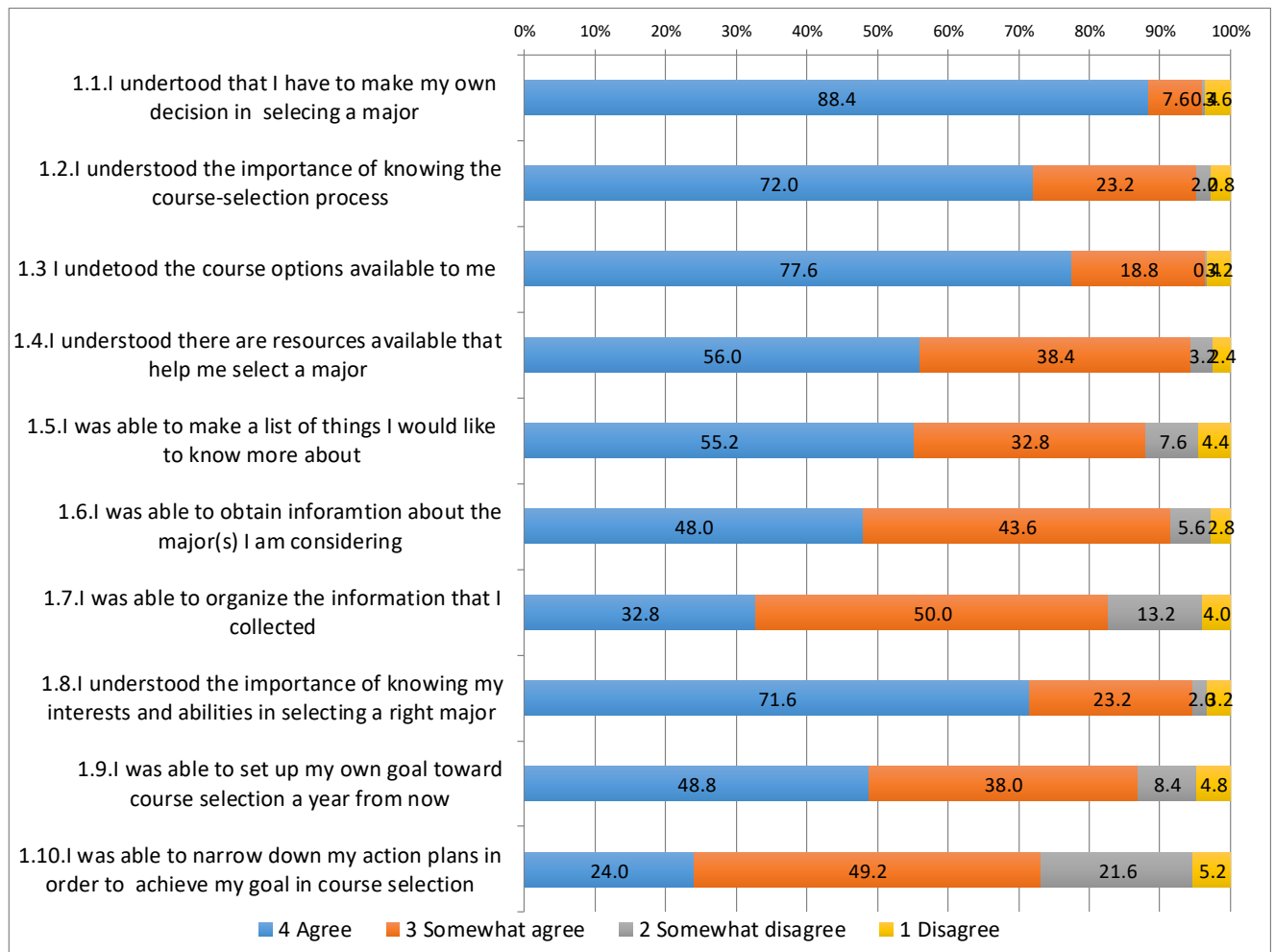


Figure 1 Result of answer

Staff

- Michiko Nakamura
- Atsuko Tominaga
- Yoshihito Tsuji
- Aiko Nakamura

1-2. Meta-Learning Lab

Program description

The Meta Learning Lab (hereafter, “the MLL”) is a learning support system outside of core courses that aims to raise the basic academic skills of the university’s students and to improve their knowledge and behavior regarding study habits and learning strategies. In academic year 2018, the MLL had 14 peer tutors, including both undergraduate and graduate students, who supported independent learning in basic subjects centered on the core courses taken in the first and second years.

Overview

【Implementation period and number of consultation sessions】

In academic year 2018, there were 154 consultation sessions. Looking at the rate of usage by discipline, programming students took the highest proportion, 73% (112 sessions), followed by mathematics students at 19% (29 sessions).

Table 1 Number of consultation sessions per academic term and number of peer tutors

	Implementation period	No. of possible sessions per week	Total no. of sessions	Number of peer tutors
First semester	17 April 2018-26 July 2018	43 sessions/week	139	14 (M2: 3, M1: 3, B4: 2, B3: 3, B2: 3)
Second semester	2 October 2018-25 January 2019	39 sessions/week	15	13 (M2: 2, M1: 3, B4: 2, B3: 3, B2: 3)

【User satisfaction levels】

Questionnaires were not completed for seven consultations, but responses from the remaining 146 sessions were collated (Table 2). For all questionnaire items, at least 97% of the responses were either “agree” or “strongly agree,” implying a high rate of user satisfaction.

Table 2 Result of compilation of users’ questionnaire responses

	1. The tutor listened to what I said and understood my problems.	2. The tutor was approachable and easy to talk to.	3. The tutor’s explanations were easy to understand and useful to me.	4. The issue I sought to address through this consultation was resolved through tutoring.	5. I received tips and advice related to independent study.	6. Through tutoring, I found out about resources and teaching materials that I will be able to use on my own.	7. Overall, I was able to obtain the learning support that I required.
Strongly agree	131 (89%)	133 (90%)	128 (87%)	103 (70%)	118 (80%)	93 (63%)	121 (82%)
Agree	15 (10%)	14 (10%)	19 (13%)	39 (27%)	28 (19%)	53 (36%)	26 (18%)
Disagree	1 (1%)	0 (0%)	0 (0%)	5 (3%)	1 (1%)	1 (1%)	0 (0%)
Strongly disagree	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

【Implementation of peer tutor-led training】

In the past, peer tutors were trained by the MLL faculties. However, in academic year 2018, beyond training by faculty members, there were seven peer tutor-led training workshops. These were practical training sessions in which the peer tutors themselves sought strategies to resolve challenges that emerged during actual tutoring. In addition, a joint intensive training day was held on December 9, 2018, with peer tutors from the learning support team of the Faculty of Software and Information Science, Iwate Prefectural University. Peer tutors from each university delivered training that they had developed.

【External presentations】

On October 20, 2018, a Peer-Assisted Learning Symposium was held at Kanda University of International Studies (Chiba City, Chiba Prefecture), hosted by that university's Academic Success Center. At this event, Associate Professor Michiko Nakamura, a Future University Hakodate MLL faculties, gave the keynote lecture, and five MLL peer tutors spoke about their experience as tutors and what it had taught them.

On March 15, 2019, at a symposium hosted by The Japan Association for Developmental Education (subcommittees on education utilizing ICT and learning support) and the University e-Learning Association, Professor Atsuko Tominaga, an MLL faculty, spoke about the use of data in the implementation of practical peer tutor training.

Staff

Atsuko Tominaga

Michiko Nakamura

Yoshihito Tsuji

Aiko Nakamura

2. Preparatory Education

2-1. Preparatory Education in English

Program description

The Pre-enrolment English course is provided for students who have successfully taken the Admissions Office (AO) or Suisen entrance exam. Its primary aim is to help students maintain their English language skills in the four or five months between the exams and the start of lectures. Because it is an online course, it also enables students to experience e-learning, communicate with each other, and learn about the university. The course consists of a mixture of communicative and individual study activities. Rather than provide study material that students passively work through individually, we have attempted to create an environment in which students make their own content in self-introduction and other discussion forums. They interact with and learn from each other by reading or responding to forum posts.

Overview

The 2019 iteration of the course ran from January to March 2019. The following summarises the course's main components.

- A self-introduction discussion forum.
- A series of 11 topic-based sections, each containing
 - a discussion forum about the topic,
 - a single-question survey, and
 - a Weekly Text and quiz. These 1-page texts were about topics relating to goal setting and learning, the university's facilities, and life in Hakodate.
- An online exchange with some 2018 Communication 2 students, with the theme "How to be a successful FUN student". This was conducted during Week 3.
- Access to the English Foundations course, where students were instructed to study grammar each week.
- A link to the online component of the 2019 Pre-enrolment mathematics course.

Although discussion forum activity was in English, explanations and descriptions within the course were provided in both English and Japanese. Students were able to access the course until early April.

While it is an online course, there was an option for students to complete some activities offline. These consisted of the Weekly Texts and quizzes, which were printed and mailed to students in three stages. Information relating to the mailouts is shown below in Table 1.

During Orientation Week a brief event was held in which an overview of the course was given and students completed an online survey about their experience with the course.

Table 1 Mailing schedule for pre-enrolment English course offline component

Date	Number of recipients	Comments	Sent to:
4 January 2019	94	Texts 1 - 3 (with quizzes)	All students, with the online course's handbook
13 February 2019	25	Texts 4 - 6 (with quizzes)	Students who had returned Texts 1 - 3 Students who had not yet accessed the online course
18 March 2019	9	Texts 7 - 9 (with quizzes)	Students who had returned Texts 4 - 6.

Outcomes

The percentage of students who accessed the 2019 iteration of the course was lower than the previous year, and although there was a core of students who accessed the course twice a week or more and participated enthusiastically, on average the 2019 cohort was less active.

We conducted an end-of-course survey in April and will conduct student interviews during May.

Table 2 Summary of activity in the online course

	2019 (% of cohort)	2018 (% of cohort)
Total students	94	103
Students who accessed the online course at least once	81 (86%)	97 (94%)
Students who accessed the online course at least weekly	31 (33%)	41 (40%)
Students who completed at least one Weekly Text quiz	53 (56%)	n/a
Students who completed at least one English Foundations quiz	34 (36%)	71 (69%)

Staff

Adam Smith

Andrew Johnson

2-2. Preparatory Education in Math

a. Preparatory Education in Math for AO/Recommended Entrance Students

Program description

The basic skill of math is one of the fundamental abilities we require of students who wish to enter Future University Hakodate. Although we expect incoming students to have knowledge of high school math III (differentiation and integration), in connection with the study of math at the university, there are many students, even general entrance exam entrants, who did not have a strong enough understanding of math III. In AO and Recommendation entrants, there are students who did not have a strong enough understanding of the more fundamental math II, math B, and math III. The math ability of AO and Recommendation entrants tends to be lower than that of general entrance examination entrants at the point of admission. This is particularly notable for AO entrants. Preparatory education in math has been carried out for such AO and Recommendation entrants under the following objectives.

- Have students re-recognize the importance of high school math so that they can review fundamental math II, math B, and math III.
- Have students learn the basic learning attitude of not leaving a problem without clarifying it and to write out answers that are understandable for readers.
- Have students brace for studying at the university with a glimpse into university-level math and have them learn to study continuously and proactively.

Overview

Schedule and objectives of assignments

1) Assignment No. 1

- Schedule: Assignment No. 1 sent on December 20 was due on January 15 (Assignment No. 1 will be returned to students with Assignment No. 2)
- Content: Review math II and math B in high school
- Aim: Help students review fundamental math II and math B, especially contents required immediately after entering the university (complex numbers and equations, trigonometric functions, exponential functions and logarithmic functions, differentiation, integration, numerical sequences). By reviewing the contents of high-school math, students can overcome their lack of ability before they enter the university.

2) Assignment No. 2

- Schedule: Assignment No. 2 sent on February 1 was due on February 28 (Assignment No. 2 will be returned with Assignment No. 3)
- Content: Exercises of math III in high school
- Aim: Help students exercise fundamental math III, especially contents related to Analyses I and II, which are first-year courses (limits, numerical sequences), and required immediately after entering university (limits, numerical sequences, differentiation, integration). With these exercises, students who have not taken math III also become accustomed to its contents, which helps them to understand Analyses I and II.

3) Assignment No. 3

- Schedule: Assignment No. 3 was sent on March 12. ※ The answers of assignment No. 3 will be given out after the students enter the university.
- Content: Preparation for taking the class “Analysis I”
-

- Aim: By experiencing actual lecture contents from FUN, students realize that the contents of high-school math are connected with study at the university, and that fundamental math skills from high school are important. By bracing for studying at the university through a glimpse into the university-level math, they are expected to study conscientiously and subjectively so that they can avoid a situation wherein they cannot catch up with the math material after they have entered the university.

Outcomes

The content and schedule of the three assignments are almost the same as last year's. This year's assignments have additional fundamental high school math. We created tasks for fundamental math III, as well as reference materials for those who have not taken it. In addition, Moodle was used to provide example answers, result analysis, and distribution of reference materials. There were 103 registrants this year. The answer sheets for assignment No. 1 and No. 2 were submitted by all 103 registrants and 100/103 registrants, respectively.

b. Improvement for preparatory education environments for mathematics

Program description

Until FY2017, preparatory education for mathematics was administered through traditional methods, via postal mail. In FY2018, we improved the learning environment in order to incorporate interactive activities, referring to efforts in the preparatory education for English. In addition, a questionnaire survey was conducted. Through these efforts, it was expected that useful knowledge on preparatory education for mathematics would be obtained. The response period of the questionnaire was the same as second assignment sending (from Feb. 6 to Mar. 4).

Overview

- Publication of assignments and answers
- Publication of comments by instructor in charge
- Establishing interactive communication space (instructor to learners and learners to each other)
- Administration of questionnaire survey for preparatory education learners

Outcomes

The learning environment for mathematics was improved after using Moodle. Every learner was able to check assignments, answers, and feedback. However, voluntary interactive activities were not observed. It is necessary to consider the utilization of interactive communication. The questionnaire survey indicated that the difficulty of assignments was appropriate and met the expectations of learners for preparatory education. These results were valuable and useful for designing the learning environment. The response rate was 31.9% (30 answers out of 94). The response rate is expected to improve in the future.

Staff

Yuichi Katori
Masaaki Shirase
Yoshihito Tsuji

3. Supplementary Education

3-1. Supplementary Lecture for Math (Math II B, Math III)

a. The status of supplementary lectures for Analysis I and Analysis II

Program description

As supplementary lectures for Analysis I and Analysis II, which are compulsory subjects of 1st year students, we carried out exercise style lectures of math III and math II B. These lectures have been supplied to students in these several years.

Overview

1) MathIII supplementary lecture

Objective: Open for all students who take Analysis I & II

Period: 8 times from May to July, 7 times from October to November (one and a half hours per lecture)

Venue: R791

Attendees: Average of 125 students in Spring semester and 57 students in fall semester

Lecturer: Mr. Suzuki (teacher of Hakodate High School)

2) Basic information on MathIIB supplementary lecture

Objective: Registrants of Analysis I and II who are assigned by a faculty member. For spring semester, faculty members in charge of Analysis I conducted basic math II B exam. Based on the result of the exam, students who couldn't reach criteria had to attend the Math II B supplementary lecture. Depending on the grades of spring semester or the score of the basic scholastic exam, the attendees for fall semester were determined.

Period: 8 times from May to July, 7 times from October to November (one and a half hours per lecture)

Registrants: Spring semester - 46 students / fall semester - 44 students

(Some members were changed during spring semester.)

Lecturer: Mr. Konno (The former teacher of Kakodate Ryohoku High School)

<Activities>

- Prof. Katori coordinated the contents of each session with the lecture, adjusting to the students' progress in Analysis I & II.
- Students were informed that the attendance at math III supplementary lecture will affect their grades in Analysis I & II.
- At the beginning of the year, we purchased math III textbooks for math III supplementary lecture.
- Exams of math II B supplementary lecture were marked by students (self-assessment), and teacher did final check. Attendance management was done by Prof. Katori.
- For utilizing the result to other compulsory math subject, students' scores of supplementary lectures were shared every time with all faculty members in charge of math subjects.

Outcomes

- Though math II B supplementary lecture is only for designated students, the attendance rate was basically good except for students who didn't register math classes. It seems meaningful that the supplementary lecture was provided for those who didn't study math enough at high school.
- Since the math III supplementary lecture was basically open to all students, the attendance rate was very high. While 240 students registered for Analysis I and II, 125 students and 57 students attended Math III supplementary lecture during spring semester and fall semester respectively. It is meaningful to provide math III supplementary lecture for students not only with a low level but also with a middle level. This contributes to raising the standards of FUN students' math abilities

b. Examination for verification of the supplementary lecture

Program description

The supplementary lectures were conducted for the learners of the subjects “Analysis I” and “Analysis II” as a component of freshman education. Regarding verification of the learning effect, we should examine the status and the effects of the supplementary lectures. Furthermore, regarding verification of the preparatory education, the effects of the supplementary lectures should be considered from the viewpoint of the entrance examination. Therefore, we have considered the perspective of evaluation of the supplementary lectures.

Method of consideration

We conducted a survey to confirm the status of Analyses I and II classes. The instructors of the classes were asked how they managed and recorded each subject. Based on the survey, we examined the framework for verification of the supplementary lectures.

Outcomes

Based on the results of the survey, we proposed a framework to consider supplementary lectures as follows.

- 1) The number of learners in the supplementary lectures
Changes in the number of learners in the supplementary lectures should be continuously examined.
- 2) The comparison of examination scores between the learners in the supplementary lectures and the other students
The effects of the supplementary lectures should be objectively examined.
- 3) The comparison of scores based on the entrance examination framework
In addition to the evaluation of the effects of the supplementary lectures, the effects of preparatory education must be examined in order to appropriately design and manage the lectures.
- 4) The continuous examination of test scores
We must examine the effects of the supplementary lectures yearly. At the same time, the transitions of the effects of the supplementary lectures should be continuously considered.

Staff

Yuichi Katori
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Yoshihito Tsuji

3-2. Connections Café

Program description

The aims of Connections Cafe are to:

1. create a positive environment where students are able to speak in English without fear of making mistakes,
2. help students see the value of learning English as a communicative tool, and
3. offer students new perspectives of the world.

Connections Cafe offers three main activity types: small-group sessions, lunchtime events, and movie-watching sessions. Small-group sessions are led by a fluent English speaker and held 3 or 4 times daily during the semester (up to 17 times per week). Lasting 40 minutes each with an 8-student maximum limit, the sessions afford students opportunities to speak in English. Lunchtime events are typically offered 5 - 8 times per semester. They are often presentations by faculty, students or outside organizations, either in English or Japanese. Themes typically relate to travel or culture. Presentations in English are graded in level to match student abilities. The movie club typically offers six showings per semester. Movies from a variety of genres and themes are selected. There is a conversation before and after the showing, and students can complete a worksheet regarding the movie.

Overview

Table 1 gives an overview of the 2018 activities. Additionally, a system to allow students to collaboratively take group notes was implemented. An editable Google Doc was created for each week Connections Cafe was open.

Table 1 Overview of Connections Cafe Activities

	Spring 2018	Autumn 2018
Open	Weeks 2-15	Weeks 1-15
Course Page	https://vle.c.fun.ac.jp/moodle/course/view.php?id=549	https://vle.c.fun.ac.jp/moodle/course/view.php?id=563
# of small-group sessions	17x / week	17x / week
# of lunchtime events	5	9
# of movie club sessions	6	5
Student feedback	questionnaire	interviews

Outcomes

Table 2 and Table3 show 2018 attendance data for Connections Cafe. While the number of students attending Connections Cafe per semester has changed up to 16% over the past 5 years, the average number of sessions that students attended per semester has roughly doubled. This is also reflected in the increase in the number of students who attended 15 or more and 25 or more sessions.

Table 2 Total number of attendees

	Spring			Autumn		
	2018	% change from 2017	% change from 2013	2018	% change from 2017	% change from 2013
Total number of attendees of Small-Group Sessions	1,023	18%	81%	806	36%	134%
Total number of attendees of Lunchtime Events + Movie Club	131	-36%	27%	205	41%	114%

* The number of lunchtime events and movie clubs varied among semesters

Table 3 Attendance data

	Spring			Autumn		
	2018	% change from 2017	% change from 2013	2018	% change from 2017	% change from 2013
# Students	179	-16%	-11%	161	7%	1%
Average # of Sessions Attended / Student	6.4	29%	94%	6.3	28%	127%
# Students Attending 5+ Total Sessions	99	13%	154%	50	-11%	127%
# Students Attending 15+ Total Sessions	18	29%	200%	16	167%	1500%
# Students Attending 25+ Total Sessions	6	-14%	**	8	700%	700%






** No students attended more than 25 sessions in 2013

Spring Questionnaire and Autumn Interview Summaries

The purpose of this questionnaire was to gain a general sense of students' opinions of Connections Cafe, why they attended, and the types of activities they found effective. Of the 196 students that responded to the questionnaire at the end of the spring semester, 99 had been to Connections Cafe that semester. The survey was in Japanese. Table 4 summaries how students rate various aspects.

During the last half of the autumn semester, 20 students were interviewed about Connections Cafe. Interviews were conducted by a fourth-year student in Japanese, and typically lasted between 30 minutes and one hour.

Table 4 How students rate various aspects of the small-group sessions

Response						Total
The facilitators' English	1(1%)	1(1%)	6(6%)	20(20%)	71(72%)	99
The facilitators' personalities	1(1%)	1(1%)	2(2%)	14(14%)	81(82%)	99
The facilitators' teaching styles	1(1%)	2(2%)	4(4%)	27(27%)	65(66%)	99
The activities	1(1%)	3(3%)	3(3%)	24(24%)	68(69%)	99
The length of time (40 minutes)	4(4%)	5(5%)	13(13%)	27(27%)	50(51%)	99
The other students	1(1%)	2(2%)	7(7%)	30(30%)	59(60%)	99
The environment (chairs/ tables/ lighting/ etc)	1(1%)	3(3%)	9(9%)	23(23%)	63(64%)	99
The session schedule (17x / week)	1(1%)	5(5%)	21(21%)	24(24%)	48(48%)	99
Their effect on my English listening	0	3(3%)	9(9%)	36(36%)	51(52%)	99
Their effect on my English speaking	0	2(2%)	15(15%)	36(36%)	46(46%)	99
Their effect on my English communication skills	0	2(2%)	15(15%)	27(27%)	55(56%)	99
Their effect on my English vocabulary	0	7(7%)	19(19%)	31(31%)	42(42%)	99
Overall impression	1(1%)	2(2%)	2(2%)	28(28%)	66(67%)	99

Overall feedback is positive and various comments given by students have been taken into consideration for 2019.

Future Plan

Influenced by information learned through the questionnaire, interviews, and discussions with students and faculty, several changes are planned for 2019, namely:

- A. the creation of the Connections Cafe Circle as an official FUN circle,
- B. the addition of two new small-group session formats for academic and research focused discussions,
- C. the creation of a collaborative design project with Professor Harada which will focus on the effective use of the space at Connections Cafe (details not finalized), and
- D. the creation of an information pamphlet about Connections Cafe for faculty

Staff

Andrew Johnson

Adam Smith

4. Collaboration between courses and committees

Overview

This initiative aims to foster collaboration between courses, committees, and those responsible for various subjects in investigating the current state of learning and to improve learning environments, methods, etc. This academic year, we collaborated with the Education Affairs Committee on curriculum creation and syllabus improvement. Additionally, we collaborated with the programming subject team to investigate the learning of programming.

Implementation details and outcomes

(1) Curriculum map development

Both students and faculty members require a curriculum map that illustrates the relationship between subjects and clarifies the position of each subject. A software application to produce curriculum maps from existing syllabi was developed at Future University Hakodate in 2009, 2010, 2011, and 2017 academic years as special research,^[1-4] the outcome of which was published.^{[5][6]} This software registers data from syllabi for all subjects on the server, and when a user inputs a keyword, subjects related to that keyword are shown as a map. However, keywords are not written in a uniform fashion across all syllabi, which has been identified as an area for improvement.^[5]

Our project team also attempted to extract keyword candidates from the 2018 academic year syllabi using TF-IDF and other approaches. However, because keywords had not been input for all subjects, extraction was difficult. Thus, in collaboration with the Academic Affairs Committee, to encourage the input of keywords for all subjects, a “keyword input” column was added as a stand-alone item within the syllabus format for the 2019 academic year. Next academic year, curriculum visualization will be investigated using the 2019 academic year syllabi.

(2) Syllabus improvement

We cooperated with the Academic Affairs Committee to address issues with the syllabi in order to meet university accreditation requirements, and the syllabus format was improved as below.

- Feedback suggested that because a single “theme/target” item was included in the old syllabus format, the “theme” on its own was not included and that attainment targets were vague. The new syllabus format has two clearly distinct items, titled “teaching session overview” and “attainment target.”
- A new item titled “pre- and post-class learning” was introduced, and information is now provided on the learning that is required before and after each teaching session. By clearly showing the content of pre- and post-class learning, it is hoped that students will find it easier to plan their learning and that independent learning outside of class sessions will be encouraged.
- A new guide detailing the proper writing of syllabus items was produced and distributed to all faculty members, and input was encouraged. The syllabus-writing guide explains how to write proper attainment targets, with concrete examples. Clearer attainment targets facilitate the planning and design of teaching sessions. Additionally, instructions regarding grading state that assessment methods such as exams and reports, and their relative weight should be clearly stated, allowing students to be assessed against targets.

The above syllabus improvements allow faculty members to design class sessions in which attainment targets, class content, and assessment methods form an integrated whole. In addition, because students are aware of what they will learn in classes, how they will learn it, and what they are required to achieve, they can mentally and physically prepare for class sessions and better foster an independent learning mindset.

(3) Implementation of research on the learning of programming

A study on the learning of programming was conducted in cooperation with faculty members involved in the programming courses, “Introduction to Data Expression” (for first-year students) and “Data Processing Practice” (for second-year students). This study focused on students who enrolled at the university in the 2017 academic year. We asked them to respond to the new version of the programming learning benchmarks^[7] at three points (the end of the 2017 “Introduction to Data Expression” course and the beginning and end of the 2018 “Data Processing

Practice” course). The answers received were presented in a radar chart (Figure 1) and distributed back to all students. According to the radar chart, the students themselves are aware of their strengths and weaknesses in programming. For details on this initiative, please see “special research A9” (lead researcher: Yoshinari Takegawa).

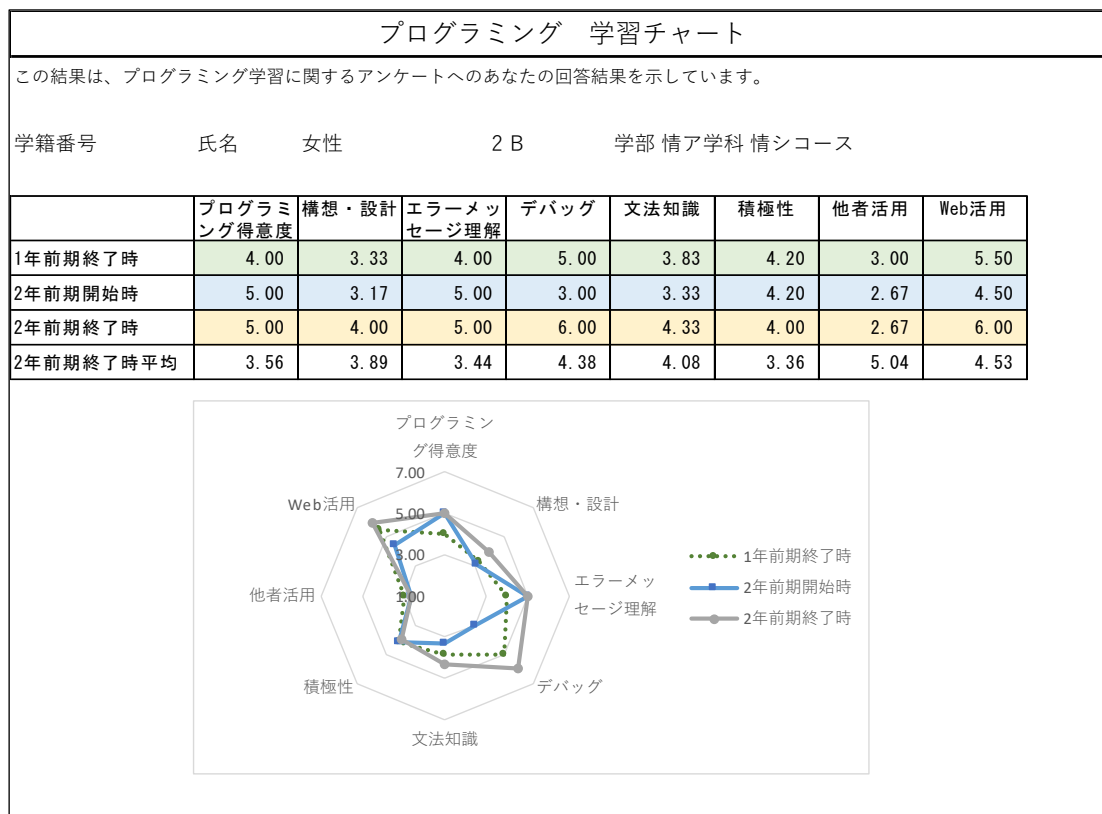


Figure 1 Example of a programming-learning chart

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Staff

Kei Ito
 Yuichi Katori
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 Atsuko Tominaga

5. Professional Development Group

Program description

The aim of the Professional Development Group (PD group hereon) is to devise concrete measures that can help improve the effectiveness of members of the university in their roles as teachers, researchers, administrators.

Overview

In June, the PD group focused on CML faculty members' research production by conducting a survey on their recent achievements. This was followed by a workshop and a survey on teaching practices as described below.

In July, a workshop was designed with the goal to promote greater accountability for classroom practices, thereby providing faculty members with an opportunity to reflect on how their practices are supported by available literature. A survey was created to help guide the discussion during the workshop, and was distributed in November, for CML members to reply by mid-January. The survey asked respondents to describe one course that they are teaching, in particular, *what* they are teaching (i.e., content), *how* they are teaching it (methodologies), and *why* they are teaching it (justifications for the content and methodologies adopted).

The workshop took place on January 30, and nine CML members participated. The participants were divided into two groups of four and five members each with the instructions of using their survey answers as a starting point to discuss practices in the classroom. This gave all members a chance to expand on their answers to the survey. A general discussion followed in order for the two groups to provide overall summaries.

Outcomes

The workshop conducted in January led to proposals such as the following. First, it would be desirable for similar campus-wide workshops to be organized so that more diverse points of view can be exchanged. Second, one of the groups will seek further discussions on the feasibility of flipping compulsory programming classes. See appendices.

Staff

Damian Rivers

Edson T. Miyamoto

Michael Vallance

Michiko Nakamura

6. Special Research

Cognitive and Social Antecedents of Academic Success

Program description

Center for Meta-Learning, it is apparent that no systematic research initiative has yet been undertaken in an attempt to acquire and disentangle valuable theoretical and practical knowledge concerning the predictors of academic success across the curriculum. This 2018 project aims to change this situation and answers questions such as:

- 1) Why do certain students achieve a higher level of academic achievement than others at FUN?
- 2) What factors can be sighted as reliable causal predictors of academic success across various classes, subjects and programs?
- 3) Are antecedents of academic success in one class or subject also observable within another class or subject?
- 4) How can this knowledge be used to improve the standard of education and support services at FUN?

Considering a plethora of cognitive and social antecedents, the project departs from educational psychology and provides answers to the aforementioned questions, while further offering scholarly insight and a data-backed understanding of the diverse learning experiences and variable outcomes of students. The multiple outcomes emergent from the proposed project will also provide a statistically theorized rationale for the future development of appropriate student support services (e.g., the Meta-Learning Lab) in addition to providing guidance for the construction of more theory-laden pedagogical approaches to planning, teaching and learning (i.e., curriculum and syllabus content). Taken more holistically, the outcomes will raise the integrity of teaching and supporting initiatives (e.g., CML activities) through highlighting the need to tailor student services toward those individual differences shown to impact on the academic successes and failures of the student population.

Overview

- April, 2018: Construction of data collection instrument and selection of basic latent variables draw from previous studies and context specific considerations.
- June, 2018-August, 2018: Data Collection.
- September, 2018-November, 2018: Data processing and analysis begins. Models are tested and a full-length research paper for the journal "Educational Psychology" written.
- December, 2018-April, 2019: Consideration and reflection on how the project outcomes can be applied to the improvement of education at FUN.

Outcomes

See Special Research Report.

Staff

Damian Rivers

Appendices

TOMINAGA, Atsuko

Course name & target school year : Basic Strategies to The Network Economy (First-Fourth years)

1. What are you teaching in this course? (i.e. subject matter, content)

“IT industry theory” is a foundational liberal arts subject common to all courses (second semester, elective subject). 150–200 students, most of whom are in their first year, take the course to acquire basic knowledge about computers and programming. They study “information device outline” and “introduction to information expression” in the first semester, but they have little awareness about the relation between society and information and communication technology (ICT) (such as how ICT is used in society and what problems it attempts to solve). In this class, students gain basic knowledge relating to the IT industry such as changes in information policy in Japan, the digitization of education, agriculture, tourism, and other fields, business trends (such as IoT and big data), customer needs, and developing IT human resources. I expect that this knowledge will assist students in gaining specialized knowledge in their second and later years, while being aware of its relevance to society.

2. How are you teaching this course? (e.g. materials, tools, typical teaching methods, assessment)

Each lesson discusses one topic and proceeds as follows:

- 1) Review of the previous lesson (15 minutes): feedback on individual work (It is not possible to give feedback to all students, so I mention a few items and explain them to the whole class), and distribution of marks for quizzes
- 2) Presentation of the learning objective for the current lesson / lecture (20 minutes)
- 3) Individual work 1 (15 minutes): Referring to the contents of the lecture, students search for concrete examples from the indicated literature and websites they have found themselves to extract the necessary information, organize it, and input it into worksheets on Manaba.
- 4) Group work (15 minutes): Students explain the contents of their individual work 1 to each other and cooperate to perform the assigned task to deepen their understanding of the subject. They input the contents of the group work into worksheets.
- 5) Intergroup presentations (5 minutes): Two groups present their work to each other and ask each other questions.
- 6) Individual work 2 (10 minutes): Referring to the group work and intergroup presentations, students reconsider the contents of their work, input it into their worksheets, and submit the worksheets.
- 7) Quiz (5 minutes): Multiple choice questions are posed on Manaba, and students are marked out of 10. Immediate feedback is provided.

Assessment for the course is through the worksheets (20%), quizzes (40%), and final exam (40%). The final exam is a revised version of questions from the quizzes (for example, multiple choice questions are changed into short answer questions) or a combination of questions from different lessons.

3. Why are you teaching the content described in (1) using the activities, format, techniques described in (2)? (In other words, what is the overall philosophical and academic rationale for this course? Feel free to use graphs, figures, schematics, etc.)

Why perform a variety of learning activities in a short time?

This class is informed by the micro-format style (Kōgo, 2014). The micro-format style involves aggregating various learning activities into one unit, and is based on the “90/20/8 rule” (PIKE, 2003). It is reported that repeating 30-minute units: “Lecture (15 minutes) → Group discussion (10 minutes) → Whole class sharing (5 minutes) → Question cards” three times in a 90-minute class maintains student concentration (Taki, et al., 2016). However, first-year students at the Future University cannot absorb enough knowledge to engage in group discussions from just a 15-minute lecture. For this reason, we incorporated “Individual work 1,” in which students research and organize their thoughts by themselves after the lecture. To give students another opportunity to think on their own after externalizing their own thoughts in the group work, presentations, and learning about others’ differing ideas, we included “Individual work 2.” The quiz at the end of the class lets them ascertain their level of understanding. Relearning the areas they failed in the quiz enables students to solidify their knowledge.

MIYAMOTO, Edson T

Course name & target school year : Media Studies (First-Fourth years)

1. What are you teaching in this course? (i.e. subject matter, content)

The first part covers (a) ways in which 3D cues have been incorporated into 2D media along history; (b) techniques used in movies; (c) the relation between (a, b) and the human visual system. This is the basis for discussions in the second part about new technologies (e.g. AR, VR), and the use of media to spread new knowledge and to advocate for/against social changes.

2. How are you teaching this course? (e.g. materials, tools, typical teaching methods, assessment)

I ask students to shoot short movies inspired by scenes in old films (e.g. stairs scene in *Battleship Potemkin*; crane shot in *Gone with the Wind*), to make them aware of the technical difficulties and how their solutions have emotional impact. Unchecked, I lecture endlessly, so instead I have been trying to use SketchUp to make students create storyboards for their movies, and simulate 3D effects. I also review material covered previously in at least two, sometimes three or more follow-ups.

3. Why are you teaching the content described in (1) using the activities, format, techniques described in (2)? (In other words, what is the overall philosophical and academic rationale for this course? Feel free to use graphs, figures, schematics, etc.)

Other than making students understand the point I am trying to put across, my concern is whether they will remember it and will be able to incorporate it into whatever they happen to do in the future. Extensive literature suggests that there are independent brain pathways for storing new stuff into *procedural memory* (how to do stuff, or “muscle” memory for solving puzzles like *Tower of Hanoi*) and into *declarative memory* (memory for facts). So, making students shoot movies and create SketchUp models are obvious ways of putting procedural memory to use.

But there is the concern of overusing hands-on time. First, because it seems so effective in the classroom (i.e., in the short term). Second, because students obviously enjoy it so much more. There is neat evidence that, at least for some aspects of learning, there is only gain with pain. Or rather, that the unpleasant extra effort that learners try to shun in class is what leads to better performance later, in real life situations (Bjork & Schmidt, 1992, who provide striking parallels between motor and verbal learning). In my class, specifically, because we all by now grew up watching movies and take their techniques for granted, students can shoot movies intuitively without thinking about, say, the *Kuleshov effect*. But this kind of do-as-you-go approach will only take them so far when faced with new challenges.

In upcoming brave new worlds, the students will need to be conscious of what they did in the past, so that they can more easily extrapolate. Understanding why something worked in the past may give them a leg-up figuring out what will work in the future. That is why I believe that lectures are important and should still be a largish part of a hands-on course like this one. But in the hopes of prolonging the half-life of what I discuss, I go over the same material repeatedly across successive lectures (see Carey, 2015, for a great summary and lots of pointers for experimental results on the best timing for reviews and other factors affecting learning).

SMITH, Adam

Course name & target school year : Communication 2 (First year)

1. What are you teaching in this course? (i.e. subject matter, content)

In this course, students were taught the research process, some persuasion strategies, and ways of collecting, describing and interpreting data, with the overall aim of developing their academic communication skills as well as strengthening their personal communication skills.

2. How are you teaching this course? (e.g. materials, tools, typical teaching methods, assessment)

The course mainly used Moodle, however Google Docs was used for some whole class brainstorming activities. I used presentations in class and uploaded the slides to the course. While all course material and assignments were in English I used Japanese in class about 70% of the time. I typically explained the main concepts to students at the start of the class, then gave them time to complete activities for the remainder. Artifacts created for three projects, participation in an online exchange, and completion of reflective activities were assessed.

3. Why are you teaching the content described in (1) using the activities, format, techniques described in (2)? (In other words, what is the overall philosophical and academic rationale for this course? Feel free to use graphs, figures, schematics, etc.)

The "why" of this course has been influenced by a range of philosophical and practical considerations.

Although not specifically taught to students, Bloom's taxonomy guided the progression of activities and the creation of learning outcomes for the course. Through engaging in "higher-order" activities such as creating artifacts (e.g. posters) and reviewing drafts, students were able to achieve and demonstrate a deeper level of learning than if they had taken comprehension tests.

Social constructivism also contributed to the course design. Students often worked in randomly chosen groups, and their collaborative efforts to understand a problem and create a solution not only deepened their understanding of the concepts being taught, but also improved a range of 21st Century Skills which are considered necessary for them to succeed in life.

Students are more likely to be interested in and respond positively to authentic learning situations, resulting in better learning outcomes. In this course, they participated in an international online exchange (from which questionnaire data was also obtained), and created a persuasive poster for pre-enrolment students (with whom they communicated online).

RIVERS, J. Damian

Course name & target school year : Communication 4 (Second year)

1. What are you teaching in this course? (i.e. subject matter, content)

The course is focused on supporting the development of **holistic communication competencies** using language (English and Japanese) various forms of data, digital technologies, abstract imagination and visual design to support students in realizing their own potential and progress in relation to **future study, projects, work, interests, and abilities**. The course embodies a liberal arts approach to value in education.

2. How are you teaching this course? (e.g. materials, tools, typical teaching methods, assessment)

The course uses a teacher-created textbook evolved over many years with materials situated around five incremental projects. Each project is followed by a meta-learning reflective activity in which students critically deconstruct behaviors and outcomes. The broadly defined competencies/skills students are expected to develop and demonstrate include:

- **Understand** different types of learning theory and how they work in practice
- **Collect** and **analyze** simple data showing how data can represent ideas
- Visually **present** data in Excel showing how generalizations can be made
- **Summarize** simple data in English and **write** a critically reflective interpretation
- **Think** about global challenges of the future and your position in the world after graduation
- Visually **design and map** problems and solutions as dictated by the United Nations
- **Design** an infographic visual resume for the future workplace
- **Reflect** on personal skills and abilities in relation to your future work environment
- **Learn** to promote yourself in English and **communicate** your personal qualities clearly
- **Create and narrate** a detailed problem-solution video presentation
- **Work effectively** with a partner to give an academic spoken presentation to an audience
- **Develop** professional communication skills in English which can be used in the future

The five individual assessment points are each based around different “cognitive process dimensions” of learning as described in the well-known Bloom et al taxonomy. This is simple enough for students to understand. Each project centralizes either **creativity, evaluative ability, analytical ability, practical application, or understanding development in relation to global issues or local topical problems**. English language proficiency is not a focus of assessment. Students with high and low levels of English proficiency can both be successful communicators. All projects require skills beyond proficiency in English (i.e. students also need more meta-focused skills such as being organized, cooperative and open to experience).

3. Why are you teaching the content described in (1) using the activities, format, techniques described in (2)? (In other words, what is the overall philosophical and academic rationale for this course? Feel free to use graphs, figures, schematics, etc.)

The rationale for the approach taken is to **promote and provide experiential learning opportunities** (i.e. Kolb, 1985) for the students. Why this approach is taken primarily concerns practical considerations. In a course so conceptually open as Communication, and considering the academic limitations of the students, in addition to the emphasis placed on project-learning by the wider university, I believe that the **experiential project-based classroom** is the most appropriate for context despite a series of trade-offs. This approach promotes responsibility through freedom and students are taught to be interdependent on each other for meeting deadlines and expectations. Practical meta-skills such as time and workload management, planning and implementation and thematic idea development are encouraged leading students toward **discovering and owning their own learning experience and shaping it in a way that is most relevant to their own life**. While micro-flexibility within a macro-structure is a feature of the course approach taken, standardized testing is entirely avoided as Communication is not a subject well-suited to such restrictions and reductions. There are no final exams, and given the importance of active participation, there are also no make-up options for failing students.

NAKAMURA, Michiko

Course name & target school year : Communication 4 (Second year)

1. What are you teaching in this course? (i.e. subject matter, content)

My Comm4 course is structured around one writing assignment and two major projects. The writing assignment is a reflective and analytical essay about a personal learning experience. The two projects, one proposing a solution to a real-world problem (group project) and one researching their academic field (solo project), provide students with opportunities to experience general problem-solving/research processes and learn the importance of communication during those processes. Additional small assignments are required in tandem with their projects. In keeping with the goal of preparing students for their 3rd and 4th year studies at FUN, my course focus highlights the role of communication as an integral part of academic and professional activities: reasoning, organizing, summarizing, comparing, sharing, reviewing, presenting, and collaborating.

2. How are you teaching this course? (e.g. materials, tools, typical teaching methods, assessment)

This course utilizes Moodle as an LMS where students can view and access their lesson materials and current grades. This assists them with managing their own progress and learning. While a majority of the assessments are summative in nature, the focus of the course is on process in which students are guided in a structured step-by-step manner. For example, in the 'real-world problem & solution' group project, students identify an issue, research it (with attention to facts and data), analyze the cause(s) of the problem, research and analyze pre-existing solutions, and then plan more plausible solutions. To help them focus on key elements while organizing ideas, they are introduced to the use of various organizational tools such as concept mapping, KJ Method, fishbone diagram, and the GROW Model. Opportunities for peer/instructor feedback are also available during the process, which allows them to review the learning process, reflect upon their work, and make improvements before the end of the project.

3. Why are you teaching the content described in (1) using the activities, format, techniques described in (2)? (In other words, what is the overall philosophical and academic rationale for this course? Feel free to use graphs, figures, schematics, etc.)

The rationale for my 'what' and 'how' is based on three elements: (1) my personal observations of FUN students, which informs and defines the institutional reality and feasibility, (2) key competencies desired for future engineers and learners in general (e.g., NAE, 2004, 2005; CCR, 2015, AAC&U, 2011; OECD, 2005), which informs and determines goals and directions, and (3) pedagogy informed by traditional learning models and instructional design principles, which provides options for instructional tools and methodologies. For example, there has been a strong need for integrating reflection and metacognition into engineering education (along with other 'transferable' skills such as communication and collaboration) so that future engineers continue to be life-long learners and productive problem-solvers (NAE, 2008). While the impact of reflection and metacognition on student learning has received empirical support in the literature (e.g., the level of student's learning depends on the use of self-regulatory processes; Zimmerman, 2002), these processes are not something every learner acquires naturally, suggesting the need for some sort of structured instructional intervention. Adopting relevant instructional design principles (e.g., Gagne, et al., 2005) and taking into consideration the abilities of FUN students, I chose one of the standard reflection cycles (Gibbs, 1988) and introduced it in such a way that students learn the process one step at a time while reflecting upon their own learning experiences. I believe that my role as an instructor is to provide a structure (i.e., logically ordered learning steps with clear objectives) and practical learning support (e.g., scaffolds, learning resources, feedback) while students are engaged as much as possible in authentic problems.

TSUJI, Yoshihito

Course name & target school year : Human Development and Learning (First-Forth year)

1. What are you teaching in this course? (i.e. subject matter, content)

People “develop” and “learn” throughout their lives. This subject presents knowledge obtained mainly in the fields of developmental psychology and educational psychology. I present psychology-based methods for understanding humans and representative research examples so that students may focus on and think carefully about relationships between themselves and others.

2. How are you teaching this course? (e.g. materials, tools, typical teaching methods, assessment)

In each lesson we review the previous lesson and have a test. I also give feedback on the mini-report task from the previous lesson. After that, we work on the lecture topic for the lesson. I include experiential activities (experiments, etc.) wherever possible. I have the students discuss the lecture topic in groups. The students submit the results of the exchange of opinions in a mini-report format (about 150-200 words) for each lesson.

3. Why are you teaching the content described in (1) using the activities, format, techniques described in (2)? (In other words, what is the overall philosophical and academic rationale for this course? Feel free to use graphs, figures, schematics, etc.)

In this subject, I place importance on discussions between students, and the mini-reports submitted based on the results of the discussion.

The reason for this lies in the characteristics of the subject’s contents. The contents that this subject deals with often involve topics about human understanding (e.g., the establishment of identity, the nature of intelligence, the necessity of tests, etc.). It is foreseeable that students would have had some kind of experience about these subjects, and thus holding discussions in class can make them aware of themselves and their relationship with the content they are learning. Keller (1983) proposes the ARCS (Attention, Relevance, Confidence, Satisfaction) model for improving student motivation. In this subject, I intend to emphasize the Relevance of the lesson’s contents to the students under the ARCS model, and thereby improve their motivation with regard to the lesson’s contents. I also choose interesting opinions and impressions from the mini-reports and present them in class to share new perspectives (Attention). I wish to focus on Confidence in these learning activities and on Satisfaction in learning activities in future lessons.

JOHNSON, Andrew

Course name & target school year : Communication 2 – 2018

1. What are you teaching in this course? (i.e. subject matter, content)

2018 Communication 2 focused on three units: the research process, data, and persuasion. In groups, students created surveys aimed at answering a research question, collected and analyzed data, and persuaded an audience to take an action related to their findings.

2. How are you teaching this course? (e.g. materials, tools, typical teaching methods, assessment)

A combination of a booklet, lesson slides, and a Moodle course were used to present content to students. Google Suite (Docs, Slides, Sheets, etc.) was used for students to collectively take notes and for some in-class tasks, as well as for collaborative work on projects. In-class activities alternated between teacher-led explanations of the content and student-centered activities. Unit assessment was based on a combination of end-of-unit projects, reflections and an open-book/open-internet unit quiz.

3. Why are you teaching the content described in (1) using the activities, format, techniques described in (2)? (In other words, what is the overall philosophical and academic rationale for this course? Feel free to use graphs, figures, schematics, etc.)

I believe that an important role of university educators is to help students develop the higher order thinking skills of Bloom's taxonomy. Up until high school, most students are focused on the bottom two tiers of 'remembering' and 'understanding'. I've designed the activities in the course to build upon these two tiers and provide students opportunities to develop the next levels of Bloom's taxonomy: 'applying' and 'analyzing'. Constructivism has been influential in the design of course activities. Students are encouraged to be actively engaged in the learning process and collaboration is an important element of the course. Each unit begins with a series of content-focused lessons. In this phase, after an explanation of a chunk of content, a collaborative exercise is given for the students to actively engage with it before moving on to the next chunk of content. Considering that I only use English in the classroom and the level of English of the students, dividing lessons into manageable chunks helps reduce the chances of cognitive overload. Units finish with a group project for students to apply their understanding of the content, analyze relevant data, and create an artifact. Projects are assessed mainly on their accomplishment of the project objectives, with an emphasis on how well they communicate with their target audience. Students are also assessed on individual reflections on what they have learned doing the project. The open-book/open-internet unit tests are viewed as comprehension checks to help students become more familiar with the content and successfully accomplish the projects. In order to create continuity between the three units and to encourage metacognitive thinking, the themes for the three unit projects were constant through the semester and related to elements of the class (online collaborative notes, reflections, international forum exchange, use of translation tools, etc.). These projects allow the students to learn through interaction and experience, and deepen their understanding of the learning process.

VALLANCE, Michael

Course name & target school year : Communication 4 (Second year)

1. What are you teaching in this course? (i.e. subject matter, content)

Course aim. Design your future: at the end of this course you will be able to communicate your ideas about the future.

- [1] constructively consider, create and present new ideas.
- [2] experience teamwork, independent responsibility, project planning, presenting, e-learning, designing, and report writing for a real audience in English.
- [3] use your technology hardware and software skills for effective communication.

The course topics are Information, Creativity and Futures. Information is contextualized by facts, opinions and data. Creativity is contextualized by 3D design using SketchUp. Futures is contextualized by designing a future concept (e.g. Classroom of the Future) supported by a portfolio of related facts, opinions and data. There are 5 units: Introduction to Communication; Meta-learning; SketchUp design; Information; Futures project.

2. How are you teaching this course? (e.g. materials, tools, typical teaching methods, assessment)

The format of my teaching is guided by TKF: an interpretation of MIT's Creativity Spiral (Resnick, 2017). I attempt this cycle every lesson. Create (Tsukutte) is the construction of a virtual artifact such as a designed 3D model or a mini presentation or an infographic. The subsequent artifact creation process and/or product can be the context for sharing (Katatte) and reflecting (Furikaeru). Sharing is the opportunity to discuss, present and/or write. Reflecting (Furikaeru) is an attempt for students to enhance their previous understandings. Reflection is not only looking back at prior actions and learning but, more importantly, is about looking forward. The students write their reflections after each unit. I provide my Coursebook, and use Moodle for additional activities and students' work.

The classes are active with students engaged in teamwork, using the technologies in C&D 494. Assessment consists of 5 individual assignments (2 written, 2 presentations, 1 learning map) and 1 team project (design and portfolio).



Figure 1. TKF: Tsukutte つくって Create; Katatte かたって Share; Furikaeru ふりかえる Reflect

3. Why are you teaching the content described in (1) using the activities, format, techniques described in (2)? (In other words, what is the overall philosophical and academic rationale for this course? Feel free to use graphs, figures, schematics, etc.)

My academic philosophy is biased towards Constructionism and influenced by the research of the MIT Media Lab where students are the active producers of their own learning (Harel & Papert, 1993). I use a design-based learning approach to broaden learner competencies: e.g. decision making, explaining, problem solving, creating, reflecting. These in turn lead to students' development of declarative (i.e. recall), procedural (i.e. apply and analyze) and meta-cognitive (i.e. understand) knowledge. I believe learning is an extremely complex process that occurs within the learner, is unobserved, occurs in random and chaotic ways, and is a response to a personal need and, often, occurs to resolve some ambiguity. It is associated with making new links in the brain involving ideas, emotions, and experience that lead to new understandings about self or the world. Therefore, I want to create an environment where students are active producers of their own learning, and aim to promote communication for creative and interpretive meaning making, analysis and reflective judgment. In addition, FUN's motto is Design your Future. In Communication 4 the experiential and interdisciplinary learning attempts to involve design, media, programming and communication so that students are prepared to control their futures. These may be grand goals at FUN but we all need a target: else what is the point of teaching and learning?

Harel, I. and Papert, S. (1993). Constructionism. USA: Ablex publishing.
Resnick, M. (2017). Lifelong Kindergarten. Boston, USA: MIT Press.

RUTHVEN-STUART, Peter

Course name & target school year : Communication 3 (Second year)

1. What are you teaching in this course? (i.e. subject matter, content)

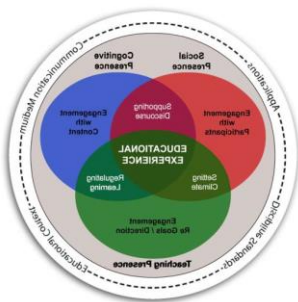
The goal of this course is to further inculcate students with the idea that communication is a multifarious activity, and that successful communication depends on the acquisition and subsequent deployment of various linguistic and technical skills. The four topics (projects) covered in the course are intended to provide students with opportunities to experience, acquire and practice these skills. The four topics are: 1) Introductions (Communication 1 & 2 reflection, Communication 3 goals, Future plans), 2) Online exchange with Colombian students, 3) English Learning Strategies, and 4) Predictions for the year 2038.

2. How are you teaching this course? (e.g. materials, tools, typical teaching methods, assessment)

Most of the material and activities for this course are on FUN Moodle, a learning management system designed to facilitate a social constructionist pedagogy. For activities that require the collaborative synchronous creation of artefacts students use the tools in Google Drive. Each project follows a similar trajectory: introduction of a 'problem' and the final goal (predominantly teacher led), discussion of possible solutions including the method of final artefact creation (student centred), self and peer assessment of draft artefacts (student centred), and finally a group or individual creation of an artefact (student centred and teacher assessed). In each lesson, students work on their own and in groups on scaffolding tasks, and the creation of draft or final artefacts. Assessment of activities and tasks is both formative (with an emphasis on encouraging revision) and summative.

3. Why are you teaching the content described in (1) using the activities, format, techniques described in (2)? (In other words, what is the overall philosophical and academic rationale for this course? Feel free to use graphs, figures, schematics, etc.)

Any attempt to harness an overall philosophical and academic rationale has to yield to the exigencies of immediate circumstances, in particular students' attitudes to the course and their readiness to learn. Thus, as circumstances require, pragmatic considerations must take precedence over conceptual rigour. However, the structure of the course, choice and delivery of content, and the design of activities are guided by the Community of Inquiry (CoI) theoretical framework (Garrison, Anderson and Archer, 2000) which comprises the three essential dimensions of an educational experience: cognitive, social and teaching presence. Cognitive presence is a process of collaborative inquiry and construction of meaning which has as its genesis Dewey's reflective thinking model. Social presence refers to the degree of connectedness between participants in the process of inquiry. The development of trust between students engenders a level of social presence that is more conducive to learning. Teaching presence is the impact that the teacher has on a course and is manifested in the course material, guidance and design of activities. Within this CoI framework, the role of the teacher is therefore to create educational experiences by designing course goals, content and activities that facilitate students' engagement with both the content and their peers. The hope is that this engagement will afford students the opportunity to share ideas and experiences with their peers so that they arrive at a greater understanding of an issue than they would have otherwise done on their own. Although originally developed as an instructional design model for eLearning, the CoI framework is also applicable to blended learning environments.



The Community of Inquiry framework <http://www.thecommunityofinquiry.org/coi>

SHIRAISHI, Yoh

Course name & target school year : Introduction to Information System (First year)

1. What are you teaching in this course? (i.e. subject matter, content)

We aim to give lectures that do not stop at enabling the acquisition of information, an understanding of internal university systems, and the provision of a basic knowledge in information technology (computers, networks, security, digital data), but also provide attitudes and points of view for learning information technology. Future University Hakodate and make students aware of the relationships between subjects and technology.

2. How are you teaching this course? (e.g. materials, tools, typical teaching methods, assessment)

- Using lecture site (HOPE)
- Sharing lecture slides, utilizing videos, receiving feedback from students
- Conducting practical exercises during lectures (submitting to web directories, acquiring IP addresses, etc.)
- Assigning 3–4 report tasks (email tasks, webpage creation tasks, etc.)

3. Why are you teaching the content described in (1) using the activities, format, techniques described in (2)? (In other words, what is the overall philosophical and academic rationale for this course? Feel free to use graphs, figures, schematics, etc.)

- Each of the three teachers is in charge of their own class, however, lectures are planned together and common teaching materials are used to advance the classes (lecture slides, videos, tasks). We review the lectures each year, add topics and reconfigure the lecture slides.
- To help students become better informed, we attempt to reinforce the knowledge in their minds by having them submit reports, rather than merely listen to the explanatory lecture slides. For example, on the topic of email writing, students have to write an email to their teacher introducing themselves. They have to redo the task until it satisfactorily meets the standard. Students also work on the task of creating a webpage using HTML. On completion, the students themselves vote on each other's projects.
- Appropriate practical exercises are included during lectures related to basic techniques. For example, in the lecture relating to the Internet, we have students obtain IP addresses with their own computers. (Using the command prompt is unexpectedly popular.)
- To raise students' awareness of the significance of learning at the Future University and of the relationships between subjects (topics), we first outline basic technology, and then introduce leading-edge technology (AI, IoT, big data, autonomous vehicles, etc.). When presenting leading-edge technology, we proactively use video content when we can. Making it visually appealing increases student interest and prevents boredom. In addition to presenting information about the technology, we also mention social issues. For example, when we talk about autonomous vehicles, we introduce the issue of moral dilemmas such as the trolley problem.
- At the end of the lesson, students fill out a brief survey they provide feedback of their impressions in a few words. At the start of the next lesson we discuss majority opinions and impressions that the teachers consider beneficial. We believe that this increases the response rate.



メタ学習センター
Center for Meta-Learning

Meaning of CML logo: Double circles represent the relation of “Learning)
Meta-Learning”. Shape of a face or a cup is the images of an open plaza.

Created by Future University Hakodate Center for Meta-Learning
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