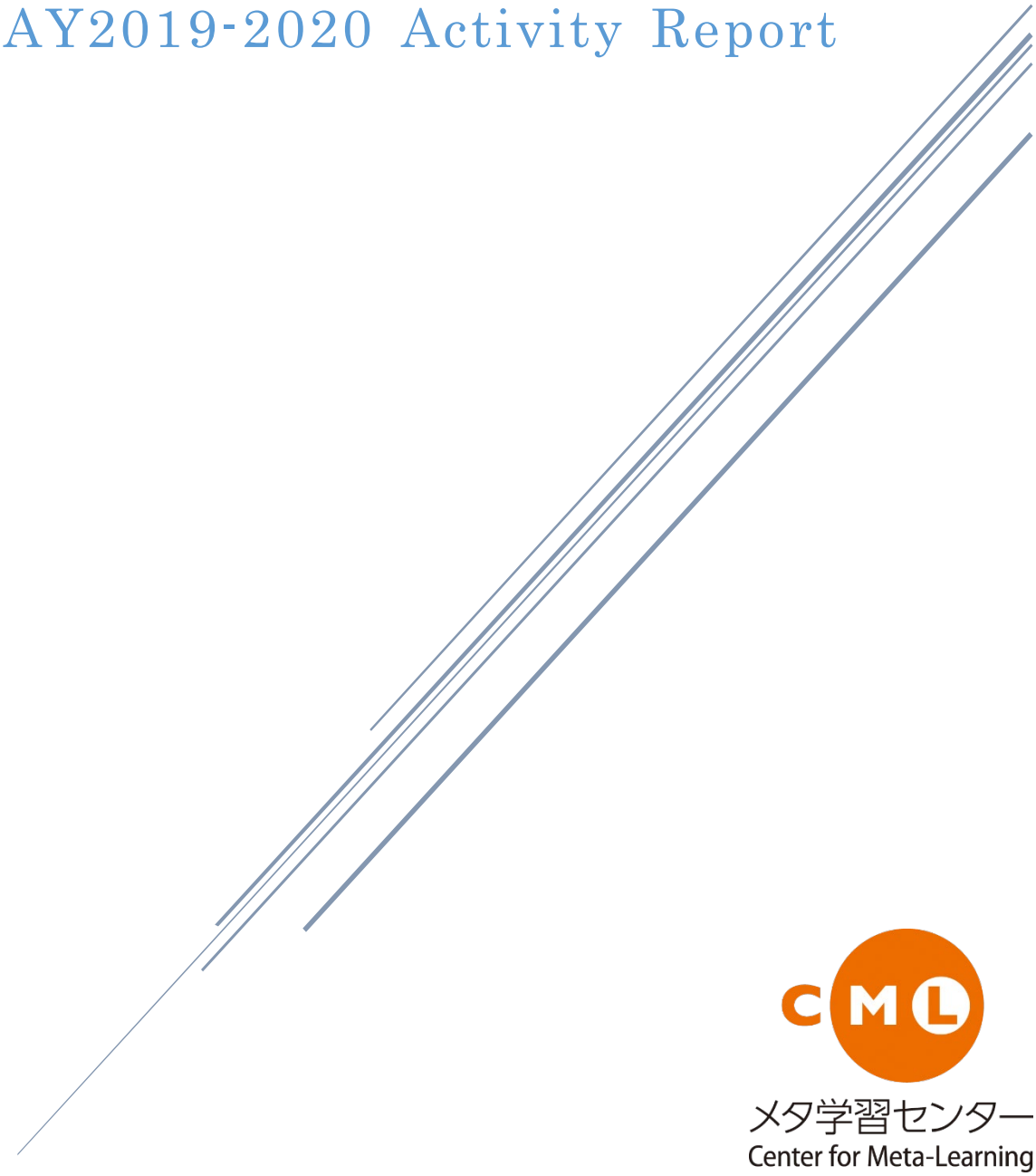
Future University Hakodate
Center for Meta-Learning
AY2019-2020 Activity Report



CML
メタ学習センター
Center for Meta-Learning

Think reflectively. Act collaboratively. Design the future.

Contents

AY2019-2020 Committee Members

Department (Course)	Name
Chair of CML 2018-19	Atsuko Tominaga（Professor）
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	Edson T. Miyamoto（Professor）
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CML Committee Admin	Department of Education Affairs
CML Coordinator	Noriko Watanabe

AY2019-2020 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, continuing from last year, we conducted a activity in which students visited an informational session which each 'course' planned and organized in the way they like. Additionally, we prepared a session by the president.

Overview

- Date: Friday, April 12, 2019, 10:40-16:10
- Place: Large lecture room (Kujira)
- Target students: 248 newly admitted first-year students
- Orientation staff: Michiko Nakamura, Atsuko Tominaga, Yoshihito Tsuji, Noriko Watanabe
- Schedule:

10:40	Introduction (introduction of staff, goals, schedule, orientation materials)
10:55	Understanding FUN's 5 courses (Students summarized course information on the worksheet and fill out the question sheet) Introduction of Course Informational Sessions by representative students of each course
11:50	Instructions on FUN 5 Courses Informational Sessions
12:00	(lunch break)
13:10	FUN 5 Courses Informational Sessions（Students attended each of the five courses' presentation sessions and a session by the president refer to the recommended moving route. Each course was able to decide on the content and the format of their session.） • 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 • Session 6 (15:15-15:35)
15:50	Instructions of assignments Personal reflection and planning for the first year (Self-reflection of today's learning, goal-setting, and plans) Answering 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 221 students responded to the survey. Overall, students' feedback was positive. 95% 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; 96%). Over 87% 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 Figure 1.

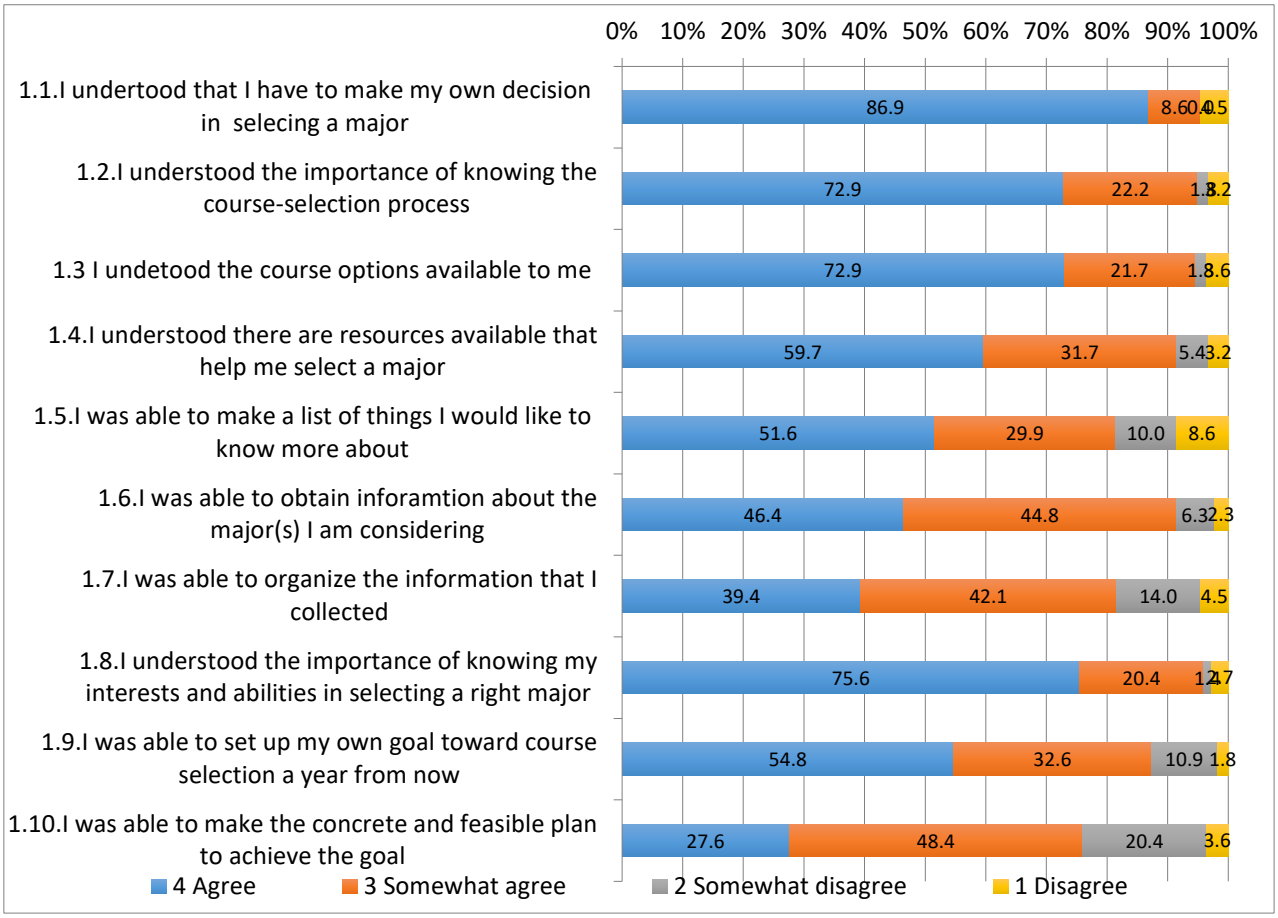


Figure 1 Result of answer

A total of 204 students responded to the free description “What did you get through this orientation?”. Analyzed the comments (234 comments) and classified it under the following categories; four categories contained in “information”, seven categories contained in “Awareness”.

《Information》
- Course information : “Understanding each course correctly”, “Specific contents of research concerning the course” etc.
- Difference between high school and university : “Studying at university is different from at high school's; study for own interests.” etc.
- Process of research : “Process to do a research in each course” etc.
- How to learn : “I re acknowledged how to learn about my interests.” etc.

《Awareness》
- Interest : “I became to be interested in a different field that I have no interest.”, “I realized the other course makes more satisfy my interests than the course I have thought.” etc.
- Guides for self-decision : “I would like to make my interests as sense of value a guide to decide things.”, “I learned how I decide my course.” etc.
- Importance of thinking : “Necessity of thinking deeply”, “I thought that I should think by myself.” etc.
- Motivation : “I obtained motivation of learning for belong to the course I would like to.”, “It became motivation of learning through communicate with seniors.” etc.
- Importance of taking actions : “Importance of searching on my own.” etc.
- Importance of decision : “With image for the future, necessity of tackling a course planning on my own initiative.” etc.
- Importance of expression : “Difficulty of summarizing writings”, ”Communication skills” etc.

In categories, Interest (15%) follows Course information (44%). Overall, Information was 47%, Awareness was 52%. The classification results are shown in Figure 2.

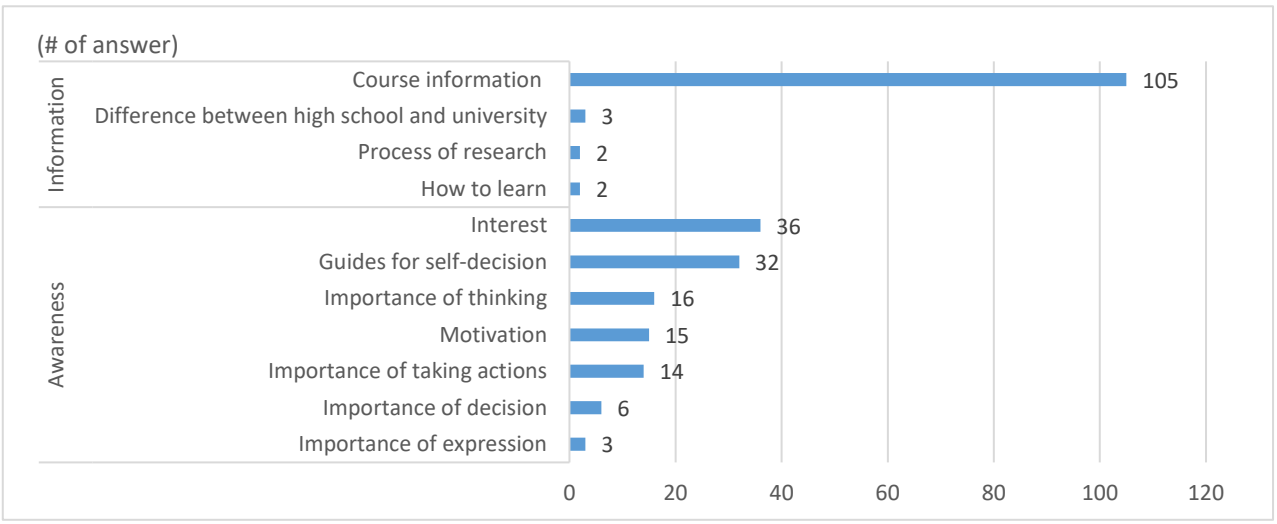


Figure 2　Result of classification

Staff: Michiko Nakamura, Atsuko Tominaga, Yoshihito Tsuji, Noriko Watanabe

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 2019, the MLL had 18 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.

MLL has been certified as a Public Assistance Administrator of "International Tutor Training Program Certification Level 1" running by CRLA since 2015 for guarantee the quality of tutoring and to encourage self-development of tutors. MLL certifies Level 1 of CRLA/ITTPC to tutors who meet the requirements.

10 tutors were certified as Level1 of CRLA/ITTPC in past years. In academic year 2019, a tutor was certified.

Overview

【Implementation period and number of consultation sessions】

In academic year 2019, there were 158 consultation sessions. Looking at the rate of usage by discipline, programming students took the highest proportion, 60% (95 sessions), followed by literacy students at 18% (28 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	9 April 2019- 30 July 2019	32 sessions/week	119	18 (M2: 3, M1: 2, B4: 3, B3: 6, B2: 4)
Second semester	1 October 2019- 10 February 2020	39 sessions/week	39	16 (M2: 3, M1: 1, B4: 2, B3: 6, B2: 4)

【User satisfaction levels】

Questionnaires were not completed for one consultation, but responses from the remaining 157 sessions were collated (Table 2). For all questionnaire items, at least 95% 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	143(91%)	147 (94%)	133(85%)	112 (71%)	130 (83%)	108 (69%)	129 (82%)
Agree	14 (9%)	10 (6%)	23 (15%)	37 (24%)	26 (17%)	46 (29%)	28 (18%)
Disagree	0 (0%)	0 (0%)	1 (0%)	8 (5%)	1 (0%)	3 (2%)	0 (0%)
Strongly disagree	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

【Implementation of peer tutor-led training】
Since academic year 2018, beyond training by faculty members, there were peer tutor-led training workshops. These were eight 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 October 27, 2019, 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.

【Conducted online tutorings for international students】
Once a week in second semester, conducted 9 tutorings on skype for an international student coming from Sri Lanka from academic year 2020. To reduce anxiety before studying abroad through understanding FUN, tutorings were performed by the same 2 tutors (a fourth-year student and a third-year student) every time.
On the first one or two times of tutorings, informed regarding lectures and how to work on Project-Based Learning in FUN. From the third time, contents of tutoring ware Math for first-year students. There was problem of internet connection, however tutorings were able to be conducted the same as face-to-face.

Staff: Michiko Nakamura, Atsuko Tominaga, Noriko Watanabe

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 providing 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 and responding to forum posts.

Overview

The 2020 iteration of the course, which used the Moodle learning management system, ran from the end of December 2019 to the end of April 2020. The following summarises its 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 one-page texts were about topics relating to goal setting and learning, the university's facilities, and life in Hakodate
- An opportunity to discuss university life in a forum with some current Future University students during Week 3
- Access to the English Foundations course, where students could improve their basic English grammar and vocabulary
- A link to the online component of the 2020 Pre-enrolment mathematics course

Although discussion forum activity was in English, explanations and descriptions within the course were provided in both English and Japanese. Due to the delayed start of the 2020 academic year, students were able to access the course until the end of April.

Based on the results of previous end-of-course surveys, it is likely that for a majority of the students, Future University's pre-enrolment program was their first e-learning experience. In order to accommodate those who preferred not to use the online environment, some activities were also provided in an offline format. They consisted of the weekly texts and quizzes, sets of which were printed and mailed to all students at the end of December, in early February and in the middle of March. As a result of coordination with the pre-enrolment mathematics course coordinators, students received and submitted their mathematics and English homework together.

Outcomes

The percentage of students who accessed the 2020 iteration of the course was slightly higher than the previous year. Although the number of students who accessed the course at least weekly until the end of March was lower than the previous year, on average the students were more active. This is reflected in an increase in the average number of English Foundations quizzes completed by each student.

Table 1 Summary of activity in the online course

	2020 (% of cohort)	2019 (% of cohort)
Number of students	92	94
Students who accessed the online course at least once	83 (90%)	81 (86%)
Students who accessed the online course at least weekly*	18 (20%)	31 (33%)
Students who completed at least one Weekly Text quiz **	83 (90%)	53 (56%)
Average number of Weekly Text quizzes completed *** (total = 10)	7	N/A
Students who completed at least one English Foundations quiz	66 (72%)	34 (36%)
Average number of English Foundations quizzes completed (total = 66)	17	11

* During the 13-week period from the beginning of January

** Online or offline

*** Due to COVID-19, students were not able to submit the third set of paper-based quizzes on campus as originally intended.

Staff: Adam Smith, Andrew Johnson, Peter Ruthven-Stuart

2-2. Preparatory Education in Math

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 4 was due on February 28 (Assignment No. 2 will be returned with Assignment No. 3)
    - Content: Exercises of math II, math B 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 13. ※The answers of assignment No. 3 was given out after the students enter the university (early April).
    - 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.

Constructing the environment of interactive activities/feedback using ICT.

We are promoting the learning environment of Preparatory Education using Moodle.

① Providing comments by instructor in proportion to the implementation status of assignments (explanations of each question, advice and the accuracy rate)

② Establishing interactive communication space (instructor to learners and learners to each other)

③ Administration of questionnaire survey for preparatory education learners

④ Collect the detailed answer data of each question

Outcomes

The content and schedule of the three assignments are almost the same as last year's. The number of this year's registrants is 91/92. The answer sheets for assignment No. 1 and No. 2 were submitted by 90/91 and 87/91 registrants respectively.

The environment providing feedback by instructor and as interactive communication space (instructor to learners and learners to each other) is improving by the environment using ICT. The answer and explanation of assignments provided online last year, for convenience and promotion of reviewing, they were provided in a paper medium this year. 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 low. It is expected to improve in the future. There are subjects in the future how to analyze and use the detailed answer data of each question.

Staff: Yuichi Katori, Masaaki Shirase, Yoshihito Tsuji

3. Supplementary Education

3-1. Supplementary Lecture for Math (MathⅡB, MathⅢ)

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 IIB. These lectures have been supplied to students in these several years.

Overview

1) Math III 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 111 students in spring semester and 73 students in fall semester
Lecturer: Mr. Suzuki (teacher of Hakodate High School)

2) Basic information on Math IIB 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 IIB exam. Based on the result of the exam, students who couldn't reach criteria had to attend the Math IIB 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 – 45 students / fall semester – 44 students (Some members were changed during spring semester)
Lecturer: Mr. Konno (The former teacher of Hakodate Ryohoku High School)

<Activities>

- Prof. Shirase 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.
- Exam of math IIB supplementary lecture were marked by students (self-assessment), and teacher did final check. Attendance management was done by Prof. Shirase.
- For utilizing the result to other compulsory math subject, students' scores of supplementary lecture were shared every time with all faculty members in charge of math subjects.

Outcomes

In order to examine the effect of supplementary lecture (math IIB and math III), the total number of attendees and the correlation with the results of Analysis I & II were compiled. The subjects were 242 in Analysis I and 241 in Analysis II.

(1) Attendance status

In Analysis I, we calculated the attendance status. As a result, 36 students (14.9%) took both math IIB and math III lectures, 8 students (3.3%) took only math IIB lecture, 75 students (31.0%) took only math III lecture, and 123 students (50.8%) did not take either.

(2) Attendance status and grade

In Analysis I, we examined the correlation between attendance status and grade. In particular, focusing on good grades (grade A or higher), math IIB attendees were 11.4%. On the other hand, non-attendees were 53.0%. Next, focusing on poor grades (grade F), math IIB attendees were 27.3%. On the other hand, non-attendees were 3.5%. In this course, math IIB supplementary lecture attendees were assigned to attend supplementary lecture by faculty member in charge of math subjects. From these results, it can be said that support is provided for students who need assistance in studying Analysis.

(3) Attendance status and transition of score

In Analysis I, we focused on transition of comprehension test score (deviation value) between lecture attendees and non-attendees. At the opening of this course (April), math IIB supplementary attendees' deviation value was 33.2, and non-attendees' deviation value was 53.6. The difference between attendees and non-attendees was 20.4. While the difference of deviation value at the end of this course (August) was 9.8. This result indicates that the degree of understanding of math IIB attendees were improved, and the difference became smaller (Figure 1).

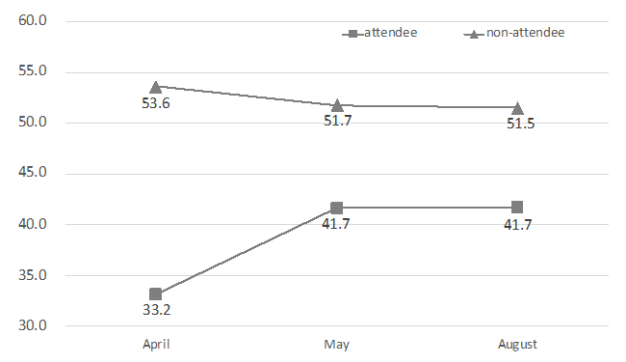


Figure 1. Transition of Analysis I comprehension test score

(4) Number of attendance and evaluation

In Analysis II, we examined the relationship between number of supplementary lecture attendance and evaluation. The result of math IIB lecture was excluded from consideration because almost attendees attended all lectures. In math III lecture, weak positive correlation was observed between number of attendance and final evaluation score (r=.229). This result suggests that understanding of Analysis may have been promoted through attending supplementary lectures.

Staff: Masaaki Shirase, Yuichi Katori, 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 offered two main activities in 2019: small-group sessions and lunchtime events. 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.

Overview

Table 1 gives an overview of the 2019 activities. Students were introduced to Connections Cafe during the VEP Orientation. Connections Cafe was open every week during the semester except orientation week and final exam periods. Information and attendance records for students was provided on the course page for each semester. Three lunchtime events were held in the spring semester and eight in the autumn semester.

Table 1: Overview of Connections Cafe Activities

	Spring 2019	**Autumn 2019**
Open	Weeks 2-15	Weeks 1-15
Course Page	https://vle.c.fun.ac.jp/moodle/course/view.php?id=573	https://vle.c.fun.ac.jp/moodle/course/view.php?id=585
# of small-group sessions	17x / week	17x / week
# of lunchtime events	3	8

Outcomes

Table 2 shows the 2019 attendance data for Connections Cafe. A total of 2510 small-group session seats were filled in 2019, the highest recorded to date. It was the second year in a row that attendance at small-group sessions during the spring semester exceeded 1000 and the first time to achieve this milestone in the autumn semester. Interestingly, compared with 2018, there were less students attending small-group sessions in 2019 but the average number of sessions attended per student more than doubled in both semesters. For the spring and autumn semesters, six and five students attended 50 or more sessions respectively. Some students attended more than 100 sessions.

In summary, attendance of small-group sessions has continued to increase from previous years and a stronger sense of community among the student participants has been observed.

Table 2: 2019 Attendance data

	Spring			Autumn		
	2019	**% change from 2018**	**% change from 2013**	**2019**	**% change from 2018**	**% change from 2013**
Small-Group Sessions Attendance	1504	47%	166%	1006	25%	192%
Lunchtime Event Sessions Attendance*	111	-25%	-73%	69	-66%	-28%
Total Session Attendance	1615	40%	141%	1075	6%	144%
# Students	132	-26%	-34%	78	-52%	-51%
Avg. # Sessions Attended/ Student	13.3	109%	274%	18.0	159%	636%
Avg. # Students / Small-Group Session	6.4	47%	171%	4.0	25%	195%
Max # Sessions Attended by a Student	156	164%	721%	129	111%	291%
# Students Attending 5+ Total Sessions	78	-21%	100%	37	-26%	68%
# Students Attending 15+ Total Sessions	18	0%	200%	16	0%	1500%
# Students Attending 25+ Total Sessions	11	83%	**	12	50%	1100%
# Students Attending 50+ Total Sessions	6	500%	**	5	67%	**

* The number of lunchtime events varied among semesters

** No students attended more than 25 sessions in 2013

Staff: Andrew Johnson, Adam Smith

3-3. International Study Support

Program description

The goal is to provide support to FUN students interested in going abroad as well as to foreign students currently at FUN.

Overview

Regular meetings were held to raise FUN students' awareness of opportunities to study abroad, providing help tailored to their individual needs so that they could make plans and preparations towards their goals. Foreign students were invited to the meetings to facilitate their integration on campus and to provide FUN students with the opportunity to interact with them in English.

Outcomes

There were nine meetings from June 2019 to January 2020, with a total of 54 non-unique participants. The following is a summary of the types of attendees.

- Some of the meetings were attended by foreign students and Japanese students who had been abroad. They provided concrete advice and gave presentations about their experiences abroad or while living in Japan as foreigners.
- Some students attended several meetings along the year to report on their progress in making plans. The steps they followed included deciding on the best time to take time off from FUN, choosing potential host universities abroad based on their interests, looking for suitable financial aid and so on.
- Other students attended several meetings to seek advice on upcoming trips. The discussion included how to best obtain information about classes (course credit, schedules) and other academic issues, but also practical suggestions about health issues (insurance, vaccination), banking, communication (cellular phones, sim cards), visas.

One difficulty was to maintain attendance levels as the semester progressed and students got busier. One partial solution adopted to address this problem was to hold frequent meetings early in the semester, but in retrospect more meetings should have been held sooner. Although meetings were held at lunch time, some students later explained that they had been unable to attend because they needed extra time to finish homework or some other academic activity.

Because of the on-going COVID-19 pandemic, there are currently no plans to hold any activities during the 2020 academic year.

Staff: Edson T. Miyamoto, Andrew Johnson, Noriko Watanabe

4. Collaboration between courses and committees

Self-evaluation for learning achievement

Program description

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 conducted "Self-evaluation for learning achievement" for first to fourth-year students. The aim is that students to evaluate by themselves regarding learning goals in diploma policy and curriculum policy of FUN and be able to make a plan to achieve their own goal.

Overview

We conducted survey twice. The first survey was for first to fourth-year students at duration of course registration in second semester, and the second survey was for graduates after they submitted their thesis. We created the following survey items based on diploma policy and curriculum policy of FUN. The response method was a 7-point scale which is "1. Not achieved at all" to "7. Well achieved".

1. Superior professional ability regarding Systems Information Science (Common to all courses)
   Superior professional ability regarding Systems Information Science (Courses Expertise): for over second-year students
   Superior professional ability regarding Systems Information Science (Graduation Study): for only fourth-year students
2. Inquisitiveness and Imagination to support healthy research attitudes
3. Expressiveness to support collaborative creativity and teamwork
4. Meta-cognitive ability to foster autonomous and continuous learning
5. Humane professionalism

For the first survey, based on the above self-evaluation, asked their own goal and plan to achieve of this semester by comments. For the second survey for graduates, while at college, asked what they achieved or growth, what they left undone, their plans for the future and requests for FUN by comments.

1. Superior professional ability regarding Systems Information Science
・Students acquire computational thinking, mathematical thinking, and design thinking. Reading comprehension, vocabulary acquisition, and writing skills both in Japanese and English are necessary to learn in a professional manner in all courses. 【1st year compulsory subject】
・Students are encourage to be aware that they are a member of society, and are expected to acquire expertise for autonomously conducting activities for the future. The Core Curriculum offers a wide-ranging education that becomes the basis for the understanding of things, making assumptions, and generating decisions. 【Core Curriculum】
・Being able to perform creative communication activities using various media in the context of science, engineering, and design. 【Communication Subjects】
・Project Learning offered in the 3rd year teaches students how to locate a problem in society or the local or global community and then solve the problem as a team.【Systems Information Science training （Project Learning）】

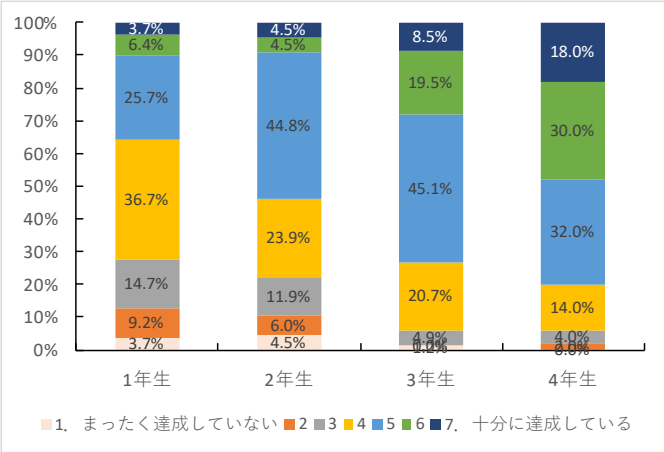
1 Not achieved at all
2
3
4
5
6
7 Well achieved

Manaba screen

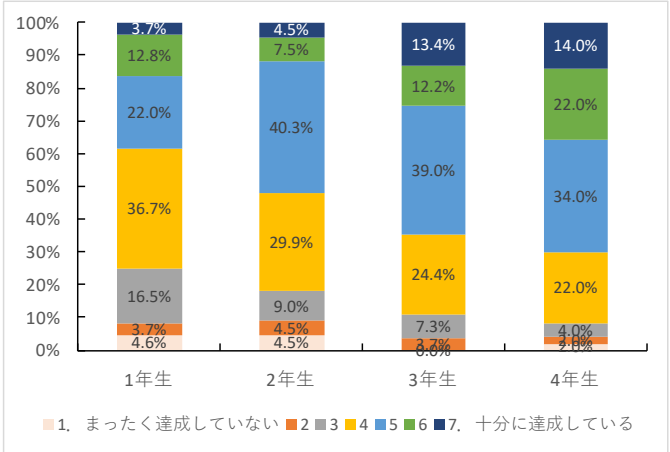
Outcomes

(1) The survey result for first to fourth-year students

There were 308 respondents (109 first-year students, 67 second-year students, 82 third-year students, 50 fourth-year students). The response rate was 29% (308 respondents / 1060 Manaba registants). The response data was totaled up by grade. The percentage of "Achieved" has increased with grades in all of survey items when centered 4 on the 7-point scale choices of achievement levels, under 3 is as "Not achieved at all", over 5 is as "Achieved".



1. Superior professional ability regarding Systems Information Science (Common to all courses)



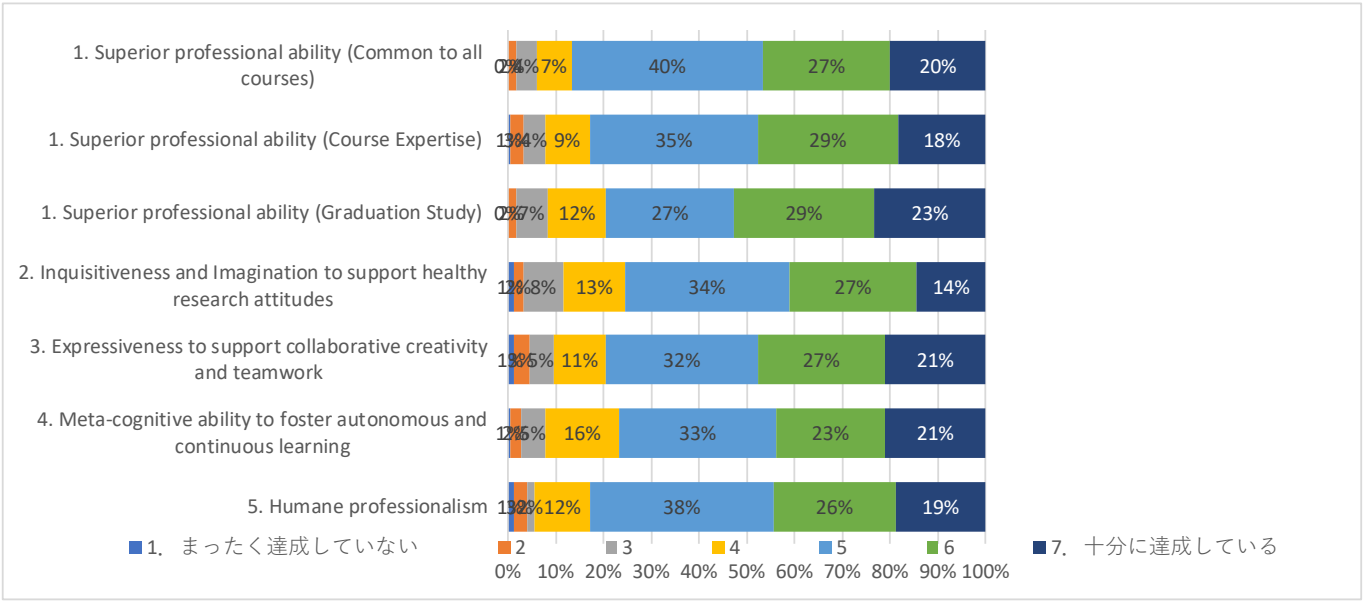
4. Meta-cognitive ability to foster autonomous and continuous learning

It was found that following inclinations regarding the goals or plans to achieve of this semester.

- From first-year students, there were many descriptions regarding course assignment, credit earning and GPA.
- From second-year students, there were descriptions reflected their learning state or were conscious of professional ability, more than the survey results of first-year students.
- From third-year students, there were many specific descriptions regarding Project-based Learning. It was also shown that regarding assigning graduation study, going to graduate school and employment.
- For fourth-year students, there were many descriptions regarding graduation study.
- Goals or plans that was in few words and lack concreteness occupied 30 to 40% of all.
- Only few students reflected diploma policy and curriculum policy to their own goal.

(2) The survey result for graduates

There were 180 respondents. The response rate was 89% (203 graduates). The percentage of over 5 “Achieved” in the 7-point scale was 76% in every survey item.



The survey result for graduates

Staff: Atsuko Tominaga, Kei Ito, Yuichi Katori, Toshio Kawashima, Yoh Shiraishi

5. Professional Development Activity

Program description

Professional development in Higher Education is considered important as its purpose is to assist Faculty with knowledge and competencies to help them become more effective and creative academics. Consequently, Future University Hakodate (FUN) generously supports the development of its academics as professionals in two capacities: research and education. Faculty at FUN are provided funding to conduct research in their specialism which, in turn, sustains the development of the university curricula, its students and its image. In addition, education at FUN is informed through CML and its education activities. To progress in an informed way in both research and education, Faculty are required to evolve as professionals. This is termed Professional Development. In CML, a Professional Development Working Group was initiated in AY2018 to formalize Professional Development at FUN. To gain an understanding of the status of Faculty, a pilot study of CML members was undertaken by requesting a list of academic publications. The purpose was to determine how the Professional Development Working Group could assist each individual Faculty member. The response in AY2018 was not as forthcoming as anticipated though, and some CML members did not volunteer information. Upon investigation it was found that some Faculty appeared to have limited, or even zero, peer-reviewed academic outputs such as journal publications. It was never the intention to compare Faculty, but simply to gain an understanding of what could be done, or needed to be done, to help individuals develop independently as professionals in Higher Education. A workshop to bring together CML Faculty to discuss these issues was undertaken, but attendance was low.

Overview

In AY 2019 the Professional Development Working Group's strategy was to attempt to engage Faculty with an external expert in Professional Development: Dr. Phillip Towndrow of the National Institute of Education, Singapore. A lecture/ workshop was provided by Dr. Towndrow in October 2019 and confidential one-to-one consultations provided. Again, the uptake was disappointingly low; even Faculty previously engaged in CML Professional Development prior to AY2018 did not attend. The funding for Dr. Towndrow was provided by Prof. Vallance's General Research funds plus support from CML education funding. This highlights the commitment of the Professional Development Working Group. However, with a lack of engagement by all CML Faculty, Professional Development at FUN will continue to be a challenge. It is therefore hoped that management at FUN can promote Professional Development, particularly to those who are deficient in academic research and education.

Outcomes

A 90-minute lecture/workshop by Dr. Towndrow was held on October 21, 2019.
A total of 10 staff participated in the lecture/workshop; 8 CML members and 2 non-CML Faculty members.
One-to-one consultations (30 minutes per person) were arranged with Dr. Towndrow on October 23, 2019. 7 CML members took advantage of the opportunity.

Staff: Michael Vallance, Damian Rivers, Michiko Nakamura

6. Hokkaido District FD/SD Forum

Program description

(Through Hokkaido District FD/SD Forum) While all teachers share awareness of faculty development, actively utilize class evaluation and continue to improve the quality of education through mutual evaluation training and publicity activities.

Overview

The Hokkaido FDSD Forum was held at Hokkaido University on September 6-7. The purpose of this forum was sharing information about Faculty Development and Staff Development activities such as improving lectures and various works of academic faculty. This forum was held for faculty and staff members nationwide. Many examples of research and class practice ware reported. The Hokkaido FDSD Forum was hosted by Hokkaido FD/SD council and Center for Teaching and Learning, Hokkaido University.

In 2019, Future University Hakodate was the university of charge. The person in charge participated in the forum's steering committee several times. The forum's steering committee was held regularly from February to September. And the person in charge informed faculty and staff about the outline of the forum and called for participation. The person in charge took the role of the moderator of the individual presentation and gave a presentation about Active Learning.

After the forum was held, the committee discussed about issues for next year. The forum to be held on the first weekend of September every year. The following section show the activities of 2019 forum.

Outcomes

The participants for the Hokkaido FDSD Forum were about 300 person who are related to higher education. The forum featured (1) Keynote speech and Open discussion, (2) Oral presentation and (3) Breakout session. Each activity is shown below.

(1) Keynote speech and Open discussion

In the keynote speech and open discussion, visualization of learning outcomes was discussed. The title and speakers are as follows.

Keynote speech 'Visualization of learning outcomes and issues'
ISHII, Kazuya (Utsunomiya University)

Open discussion 'Visualization of learning outcomes'
MATSUOKA, Shinji (Hokkaido Bunkyo University)
YAMAKITA, Takanori (Hokkaido Information University)
TAKAMURA, Koji (National Institute of Technology, Asahikawa College)

(2) Oral presentation

In oral presentation session, activities at 21 higher education institutions were reported. Some of the reported themes were below.

First Year Education, Foreign Language Education, Class Observation for Faculty, Relation between High school and University, STEM Education, Active Learning, Questionnaire for Graduates, Skill Development Program for Staff

(3) Breakout session

In Breakout session, total 16 participants reported in 6 sections. The themes of each section are listed below. In addition, the person of charge made an oral presentation "Development and Practice of AL Learning Environments in a College of Information Studies" at section F 'Active Learning'.

Section A ‘Third-term Institutional Certified Evaluation and Accreditation’
Section B ‘Project-Based Learning of Region’
Section C ‘Diversity of students, faculty and staff’
Section D ‘University Integration’
Section E ‘Relation between High School and University/examination’
Section F ‘Active Learning’

The activities and material of AY 2019 Hokkaido FDSD Forum can be found at the following URL.

Hokkaido FDSD Forum 2019
https://ctl.high.hokudai.ac.jp/20190906fdsdforum/

Hokkaido FDSD Forum 2019(publicity material)
https://ctl.high.hokudai.ac.jp/sys/wp-content/uploads/2019/07/HokkaidoFDSDForum2019.pdf

Staff: Yoshihito Tsuji

7. Special Research

7-1. Expectancy-Value Orientation and Meta-Learning Strategies: Predicting Virtual English Program (VEP) Achievement at FUN

Aim

This research identifies the predictors of VEP achievement drawn in relation to expectancy-value orientations and meta-learning strategies and asks: How do variations in student motivation (expectancy-value) and self-regulation (meta-learning strategies) impact academic achievement outcomes on the Virtual English Program (VEP)?

Method

Quantitative data was collected from 198 second-year FUN students for descriptive, factorial, correlational and regressional analyses. Motivation (expectancy-value) was predominantly assessed through the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich et al., 1993). Approaches to Learning were measured using the 52-item Revised Approaches to Studying Inventory (RASI) developed by (Entwistle & Ramsden, 1983). The measure uses a five-point scale to assess the tendencies of students to use deep, strategic and surface approaches to learning. While the 52-items can be used to reflect these three macro-level constructs (deep, strategic, and surface), there also exist several composite scales within each approach. VEP achievement was assessed through grades awarded within VEP by the program administrators across the first and second year of VEP study (i.e., VEP 1 and 2 in addition to VEP 3 and 4).

Results

It is apparent that VEP outcomes are significantly impacted upon by differences in student motivation (expectancy-value) and self-regulation (meta-learning strategies). These differences experience further shifts between the first and second year of VEP study. From the perspective of FUN student motivation, the most successful VEP students are those who adopt an ability-approach motivational profile. Rather than finding intrinsic enjoyment or satisfaction within the materials and tasks, these students are motivated by receiving favorable judgments of their competence by significant others such as teachers. Success is defined in relation to the feedback provided by significant others rather than being understood in self-referential terms. However, while significant in the first year of VEP study, the motivational impact of positive feedback declines into insignificance during the second year of VEP study. Questions should therefore be raised concerning the format and frequency of teacher feedback. After the first year of VEP study the positive feedback provided by teachers is ineffective to motivate students. In terms of self-regulation (meta-learning strategies) from the perspective of approaches to learning, consistent patterns were observable across the first and second year. During the first year of VEP study, the adoption of a deep approach to learning was a significant negative predictor of VEP achievement while a strategic approach was found to be a positive significant predictor VEP achievement. These outcomes suggest that the optimal approach to VEP study is more concerned with logistical rather than academic knowledge related aspects, with alertness to assessment being the dominant predictor of success. With the high-volume of tasks and deadlines given to students, adopting a deep approach to learning is prohibited thus explaining why outcomes reflect knowledge tested on a superficial or strategic level. A well-organized student who follows guidelines and instructions, but perhaps does not really understand the material is more likely to be successful within such an environment. VEP should consider teaching students the importance of those meta-learning strategies required for success (ideally in Japanese and informed by actual data) in addition to the English-language focused content. Overall, from this study several implications for VEP improvement can be drawn out and translated into positive and more robust educational practice.

See Special Research Report.

Staff: Damian Rivers

7-2. Development of a Logical Thinking Training System

Introduction

It is said that writing classes started to be offered at universities from the beginning of the 1990s[1]. Currently, many universities hold classes in which one can learn how to write reports and papers[2]. However, information not being classified and organized at the outset, there being duplications, omissions, and gaps in the development of arguments. The absence of logical thinking skills like these are pointed out as problems that come before issues of writing skills.

Selective drills using a computer are a type of training that develops logical thinking ability. Tominaga and Jin[3] developed an argument training system based on the argument model proposed by the philosopher Toulmin, which comprises claims, data, and warrants (Figure 1). The claim is the writer's idea, and data are facts that constitute evidence for the claim. A warrant plays the role of logically connecting the claim and data, and shows why that claim is supported by that data. This argument training is a multiple-choice system whereby the most appropriate warrant that matches the claim and data presented on the display is selected. In the case of an incorrect answer, the reason is immediately provided as feedback, and one does not proceed to the next question until the correct answer. An evaluation of the essays written by the experiment participants before and after training showed that they could form more appropriate arguments after training than before. This indicates the possibility of training the logical thinking capacity necessary for writing sentences, such as organizing and classifying information, by using the multiple-choice drill teaching material.

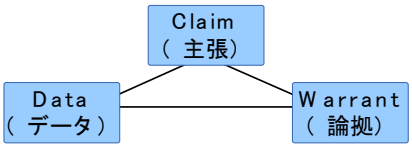


Figure 1 Triangle logic model

The purpose of this study is to develop a multiple-choice drill type training system with the learning management system Moodle in order to develop logical thinking capacity. The study duration is scheduled to be four years. In the first year, we will 1) conduct trial tests and verify the test problems, and 2) build the computer system environment.

Method

The tests were conducted in April 2019 using manaba's quiz feature. The respondents were 260 students who took the first-year compulsory course "Science and Technology Literacy." The test questions consisted of four sections: vocabulary, conjunctive relations, paragraph coherence, and arguments.

The first section, vocabulary, contained questions in which the meaning of the presented word was selected from several options. The words were extracted from the textbooks for "Analysis," "Introduction to Information Presentation," and "Science and Technology Literacy," which are compulsory classes for the first year, and the options were created based on a thesaurus. There were 20 questions. The second section, conjunctive relations, contained questions in which one had to select which of the following the presented sentence represents: addition, selection, paraphrase, exemplification, condition, concession condition, reason, or result. The questions were extracted from "4-1 Various Conjunctive Relations" of Shigeki Noya's "Japanese Seminar for Adults". There were 10 questions. The third section, paragraph coherence, contained questions in which one had to select the sentences in a paragraph that were not related to the topic sentence. The paragraphs were extracted from "Chapter 3 Assembling Paragraphs" of Keiichi Abe and Atsuko Tominaga's "Communicative Japanese" Exercise Book. There were three questions. The fourth section, arguments, contained questions based on Toulmin's argument model. Questions in which one had to show the claim and data and select an appropriate warrant from the options were used. The questions were from Tominaga and Kami [6]. There were 12 questions.

In these questions, conjunctive relation, paragraph coherence, and argument are related to logical thinking capacity. Vocabulary is not logical thinking capacity, but a significant lack of vocabulary may impede logical thinking. Vocabulary is positioned as a basic aptitude that supports logical thinking.

Results

(1) Examination of test score results and reliability of questions

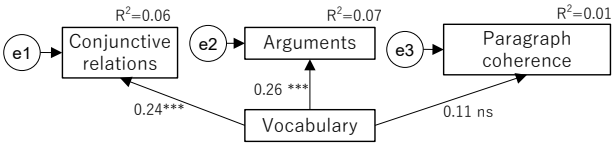
The test was taken by 252 of the 260 people who completed "Science and Technology Literacy." The answer data was scored as 1 point for each question according to manaba's automatic scoring, with a perfect score of 45 points. Students retaking the course sat the same test in the previous year; hence, they were excluded from analysis, and the answer data of 243 first graders were analyzed.

In order to confirm the reliability of the test questions, we first conducted a GP analysis. The results showed that there was no significant difference between the upper and lower groups of a total of eight questions: four vocabulary questions, one conjunctive relation question, one paragraph coherence question, and two argument questions.

In addition, Cronbach's α coefficient was calculated for each section. The α coefficient for all 45 questions was 0.595, but the α coefficient for 37 questions excluding the above 8 was 0.608.

(2) Relationship between sections

Since the α coefficient was improved, we analyzed the association of the sections vocabulary, conjunctive relations, paragraph coherence, and arguments using a structural equation model targeting the 37 questions. IBM AMOS 25 was used for the analysis. The model in Figure 2 was created because vocabulary is a basic aptitude that supports logical thinking, with the total score for each section as the observation variable. The analysis results showed that the path from vocabulary to paragraph coherence was not significant. The goodness-of-fit indexes were GFI = 0.973, AGFI = 0.909, CFI = 0.751, RMSEA = 0.119, and AIC = 26.499.

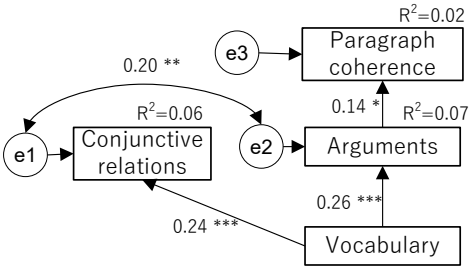


$X^2(3) = 12.499$, GFI = 0.973, AGFI = 0.909, CFI = 0.751, RMSEA = 0.119, AIC = 26.499

Figure 2 Initial model

Then, as a result of modifying the model according to the AMOS modification instruction as shown in Figure 3, the goodness-of-fit index was improved to GFI = 0.997, AGFI = 0.984, CFI = 1.000, RMSEA = 0.000 and AIC = 17.435. As a result of checking against the indices of Toyota [4], Figure 3 was regarded to conform and was selected as the final model.

In the model of Figure 3, a significant positive path was drawn from the vocabulary to conjunctive relations and argument, and a significant positive path from argument to paragraph coherence. In addition, there was a significant positive correlation between conjunctive relations and argument.



$\chi^2(2) = 1.435$, GFI = 0.997, AGFI = 0.984, CFI = 1.000, RMSEA = 0.000, AIC = 17.435

Figure 3 Final model

A significant positive path was drawn from vocabulary to conjunctive relations and argument, suggesting that vocabulary influences the ability to consider conjunctive relations and reasoning. Moreover, the significant positive correlation with the conjunctive relations questions that consider reasons and consequences may have been because the reasoning "why is this claim established from this data" is considered in the argument questions.

Staff: Atsuko Tominaga, Kei Ito

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
Contact: cml-coordinator@fun.ac.jp

(March 2020)