２０２４年度公立はこだて未来大学
メタ学習センター活動報告

Future University Hakodate Center for Meta-Learning
Report 2024 - 2025

メタ学習センター
Center for Meta-Learning

Think reflectively. Act collaboratively. Design the future.

Contents

Note: Sections 2-1-1, 2-2-2, 2-3-1, 2-5 and 2-6 are translations from the Japanese report partly based on output from DeepL(https://www.deepl.com/translator).

Appendices

1. メタ学習センターについて

Basic Information of the Center for Meta-Learning

1-1. 設置目的/Aims of CML

※平成 20 年公立大学法人公立はこだて未来大学規程第 30 号「メタ学習センター規程」より

* Regulations of the Center for Meta-Learning at Future University Hakodate/Act No.30 of 2008

「目的（第 2 条）」/Aims of CML is to advance (Article 2)

センターは、情報技術分野の専門教育の基礎として、大学における学習方法の教育を主たる目的とし、特に総合的なコミュニケーションの能力および幅広い教養と多角的な視点から物事を判断する能力の養成を中心として、将来にわたり持続的に発展していく社会に資する人材を輩出するための活動を実施する。

Future University Hakodate's strategic education and learning within the professional and academic disciplines of Information Technology. Through educational programs, CML will foster students' communication ability and thinking through a wide range of Liberal Arts subjects offering multilateral points of view. Our goal is to develop human resources who will continually contribute to developing society in the future.

「業務（第 3 条）」/Initial Roles of CML (Article 3)

(1) リベラル・アーツ教育のカリキュラム開発および実施の企画

Supervising curriculum of Liberal Arts and Communication and feedback to faculty

(2) 新入生の導入教育の企画

Planning preparatory education

(3) FD（教育・研究・運営に関する人材育成および組織改革）の企画

Planning faculty development

(4) 教育研究、学習研究に関わること

Matters relating to research of teaching and learning

(5) 大学の教育活動を中心とした建学理念の教員や職員との共有化に関わること

Matters relating to sharing FUN educational philosophy with faculty and staff

(6) その他、未来大学における教育、学習活動に関わること

Miscellaneous matters relating to activities of teaching and learning at FUN

1-2. 沿革 /History

2007 年　CML 準備委員会発足/Preparatory committee for organizing CML started

2008 年　CML 設置（センター長 美馬のゆり教授）/CML started (Chair of CML Prof. Noyuri Mima)

2011 年　CML 専任教員の雇用開始/Employment of full-time faculty for CML started

2012 年度～2013 年度　センター長　片桐恭弘教授/Chair of CML Prof. Yasuhiro Katagiri

2014 年度～2015 年度　センター長　マイケル・ヴァランス教授/Chair of CML Prof. Michael Vallance

2016 年度～2017 年度　センター長　平田圭二教授/Chair of CML Prof. Keiji Hirata

2018 年度～2021 年度　センター長　冨永敦子教授/Chair of CML Prof. Atsuko Tominaga

2022 年度～2024 年度　センター長　宮本エジソン正教授/Chair of CML Prof. Edson T. Miyamoto

1-3. 2024 年度委員会メンバー/2024-2025 Steering Committee Members

所属(コース) Department (Course)	氏名 Name
センター長 Chair of CML 2022-25	宮本　エジソン　正教授 Edson T. Miyamoto（Professor）
メタ学習センター Center for Meta-Learning	冨永　敦子教授 Atsuko Tominaga (Professor）
	スミス　アダム准教授 Adam Smith (Associate Professor）
	辻　義人准教授 Yoshihito Tsuji (Associate Professor）
	平野　智紀准教授 Tomoki Hirano (Associate Professor）
	山田　浩准教授 Hiroshi Yamada (Associate Professor)
コミュニケーショングループ Communication Group	バゲンダ　ドミニク准教授 Dominic Bagenda (Associate Professor）
複雑系コース Complex Systems	加藤　譲准教授 Yuzuru Kato (Associate Professor）
	山田　康史准教授 Yasufumi Yamada (Associate Professor)
CML 委員会庶務 CML Committee Admin	事務局教務課 Education Affairs Section
CML コーディネーター CML Coordinator	内藤　萌 Moe Naito

2. 2024 年度 CML 活動報告

CML Activity Report on AY2024

2-1. Foundation for Meta-Learning

2-1-1. Meta-Learning Lab[1]

1. Program description

The Meta Learning Lab (MLL, hereon) is a learning support system outside of core courses that aims to improve the basic academic skills of the university's students, and their knowledge and behavior regarding study habits and learning strategies. In AY2024, the MLL had 15 peer tutors (6 of which were newly hired), including both undergraduate and graduate students, who supported independent learning, mainly in the core courses for first and second year students.

Since 2015 MLL has been accredited as an "International Tutor Training Program, Level 1" by CRLA (College Reading & Learning Association) certifying the quality of tutoring and encouraging tutors' self-development. MLL certifies tutors who meet the requirements for Level 1 of the CRLA/ITTPC. To date, CML has certified 17 tutors at Level 1 based on CRLA/ITTPC criteria. Furthermore, from the end of AY2023, MLL has initiated efforts to ensure tutor quality by replacing the CRLA/ITTPC with Open Badges. Open Badges is a service based on blockchain technology that allows users to, for example, issue certificates for knowledge and skills acquired. One of the reasons for introducing Open Badges is that the existing international tutor training program is mostly tailored for large-scale universities, making it increasingly difficult for MLL to operate flexibly. In AY2023, Open Badges were issued to 11 Proficient Tutors, 7 Expert Tutors, and 3 Leader Tutors. The university plans to utilize Open Badges to ensure the quality of our tutors and enhance their motivation.

2. Overview of AY2024 activity and Outcomes

(1) Implementation period and number of tutoring sessions

In AY2024, there were 123 tutoring sessions. By discipline, programming was the most frequent at 63.4% (78 sessions), followed by math at 30.0% (37 sessions). The number of tutoring sessions per academic term and number of peer tutors are shown in Table 1.

Table 1 Number of tutoring 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	15 April 2024- 25 July 2023	26 sessions/week	107	14 (M2: 5, B4: 4, B3: 4, B2: 1)
Second semester	7 October 2024- 21 January 2025	22 sessions/week	16	15 (M2: 5, B4: 4, B3: 4, B2: 5,B1:1)

(2) User satisfaction levels

Survey responses to 123 sessions and results are summarized in Table 2 (1 to 4 points, the higher the score, the higher the rating). All question items received a rating of 3.70 or higher. These results indicate a high level of user satisfaction.

Table 2 Survey Evaluation by Tutees

Questionnaire Items	average	*SD*
1. Did the tutor listen to your consultation and understand your problem?		
1-1. Confirmation of current understanding and clarification of the problem	3.92	0.31
1-2. Goal setting	3.93	0.28
2. Was your tutor approachable and easy to talk to?		
2-1. Distance	3.96	0.20
2-2. Reaction	3.94	0.24
2-3. Icebreaking	3.79	0.57
3. Was your tutor's explanation clear and informative to you?		
3-1. Interactivity	3.96	0.27
3-2. Attitude toward you	3.94	0.33
3-3. Leveraging resources and strategies	3.92	0.28
4. Did Tutoring solve your problem with this consultation?		
4-1. Post-tutoring comprehension	3.71	0.58
4-2. Achievement of goals	3.82	0.53
4-3. Future outlook	3.80	0.51
5. In both cases where you were able to solve the problem and where you were not able to solve the problem, did you get any hints or clues about how to study on your own in the future?		
5-1. Goal setting	3.92	0.31
5-2. Problem solving implementation	3.86	0.37
5-3. Reflection	3.92	0.26
6. Through tutoring, have you identified resources and materials that you could use yourself?		
6-1. Understanding and finding methods and resources that can be used to solve problems	3.83	0.42

(3) Implementation of in-person tutoring

In AY2024, face-to-face tutoring was conducted. As in AY2022-2023, only afternoon sessions (3rd to 5th periods) were offered with tutors stationed during all open hours.

The number of sessions conducted in the previous period was 107 in AY2024 compared to 178 in AY2023. The average utilization rate (number of sessions conducted/number of sessions available) was 33.7% in the first semester of AY2024, compared to 57.0% in the first semester of AY2023 (102/303). In terms of the number of slots, in the first semester of AY2023, 11 of the 14 slots had an occupancy rate of 50% or more, 2 slots had an occupancy rate of 20% to 50%, and 1 slot had an occupancy rate of less than 20%, while in the first semester of AY2024, of the 15 slots, 3 slots had an occupancy rate of 50% or more, 9 slots had an occupancy rate of 20% to 50%, and 3 slots had an occupancy rate of less than 20%.

The number of sessions conducted in the second semester was 16 in AY2024, and the average occupancy rate was 6.9% in the second semester of AY2024, compared to 19.6% in the second semester of AY2023. In terms of the number of slots, in the second half of AY2023, 1 of the 15 slots had an occupancy rate of 50% or more, 7 had an occupancy rate of 20% to 50%, and 7 had an occupancy rate of less than 20%. 15 of the slots had no time slots with an occupancy rate of 50% or more. In addition, one slot had an occupancy rate of 20% or more; 14

slots had an occupancy rate of less than 20%. See Table 3 for a summary for the last four years.

Table 3 Utilization rate for AY2021 to AY2024

	Utilization rate (number of sessions conducted)		
	First semester	Second semester	Year
AY2021	27.8% (107)	2.8% (10)	15.5% (117)
AY2022	45.7% (131)	23.7% (59)	34.2% (190)
AY2023	57.0% (178)	19.6% (51)	39.8% (229)
AY2024	33.7% (107)	6.9% (16)	22.5% (123)

(4) Tutor-led activities

Tutors took the initiative by proposing and implementing various activities under the guidance of the MLL staff.

Firstly, tutor-led training sessions, which were started in AY2020, were also implemented in AY2023. The purpose of these sessions is for tutors to gain a deeper understanding of the training topics, and acquire teaching skills and methods by teaching in a variety of situations. Four tutor-led sessions were held, two in the first semester and two in the second semester. The sessions followed the CRLA standards, so that based on the CRLA training objectives, the tutors acquired the skills to design a two-part course on “understanding the theoretical concepts and applications of tutoring.” Improvements were observed regarding the quality of the activities used to translate the learned concepts into tutoring skills. As a result, the quality of training deliverables and discussions improved, as well as the acquisition of meta-perspectives and verbalization skills in tutoring. The sessions were particularly effective for the newly hired tutors.

Secondly, tutors proposed and started two research projects to be continued in the next academic year. The first compares in-person to on-line tutoring. The results of this survey and analysis were presented jointly by students and faculty members at the Japan Society for Educational Technology Research meeting in December 2024. The second investigates ways of improving tutoring evaluations and new rubrics have been created for tutors and tutees. Finally, three tutor-led learning support workshops were conducted in AY2024 (five in AY2023). The content was related to VEP and programming. The total number of participants was 37.

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[1] This is a translation from the Japanese report partly based on output from DeepL(https://www.deepl.com/translator).

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2-2. Preparatory Education

Preparatory Education for Students Selected through the Comprehensive and Recommendation Exams

2-2-1. Preparatory Education in English

1. Program description

The Preparatory Education program is offered to students who have successfully taken early entrance exams such as the Comprehensive Entrance Exam and the School Recommendation Entrance Exam. The primary aim of the English section is to help participants practice their English language skills in the three months preceding the start of the academic year.

This year's English section used the same timed-reading program (TRP, hereon; see Chang, 2010; Tran & Nation, 2014; and references therein for discussion and previous evaluations of such programs) as last year's with some modifications explained later in this report. TRPs use short texts to improve reading fluency by emphasizing reading speed rather than perfect comprehension. The goal is to practice physiological (*e.g.,* eye movements) and psycholinguistic (*e.g.,* lexical access) processes that can improve the overall reading experience in the target language (Nation, 2005, for discussion).

A secondary goal of the program was to encourage participants toward a more self-regulated style of learning. Participants controlled how often they wished to spend time in each activity setting priorities according to their personal needs. Frequent short sessions rather than sporadic long ones were recommended. To counterbalance the free format of the mathematics section, in which participants could access activities in any order, the TRP was structured sequentially with feedback at the end of each activity.

2. Overview and AY2024 activity

Of the 103 students accepted to the university through early entrance exams, 102 requested and were granted access to the Preparatory Education program from mid-December 2024. The TRP activities for the English section were made available in a Moodle course on the HOPE website and were accessible until April 1, 2025. The activities for the mathematics section were provided in a separate HOPE course.

A practice text with an accompanying quiz was followed by the six blocks of the TRP. Each block had 20 texts (117 from Millett, 2017; 3 from Spargo, 1998). Texts in a block had about the same number of words (300 to 550) from controlled vocabulary lists, as it is commonly recommended that the texts be easy to promote rapid reading. The blocks were shown in increasing level of difficulty according to their vocabulary lists. The texts in each block were also ordered in increasing level of difficulty based on the mean ratings collected during the AY2022 program.

Each text was followed by a quiz containing six questions randomly selected from the ten questions that accompanied the texts. That way, the quizzes were kept short decreasing their burden and reinforcing the focus on the overall comprehension of the texts rather than memorizing specific points to answer the questions. Moreover, random selection allowed for a slightly different set of questions to be shown if the participant chose to resubmit an attempt by re-reading the text and answering its quiz again. Feedback for each quiz included the participant's score and a suggestion on how to read the next text as follows (see Nation, 2005, for a related proposal): to read faster if the score was 80% or higher, to keep the current speed if the score was around 60 to 80%, and to read more slowly if the score was below 60%.

Weekly individual graphs were provided to emphasize the gamified nature of the feedback (see Figure 1 for an example). Reading times were log-transformed to decrease the impact of large data points.

Some students in previous years finished reading all the 120 texts in the TRP before the end of the program. Therefore, for this year, such students were offered a subscription paid by the university to access Xreading VL, *an online, virtual library with hundreds of graded readers supported by an easy-to-use learner management system* (https://www.xreading.com/theme/xreading/sitepages.php?tm=aboutxreading; Xreading hereon). They were free to read as many of the materials available.

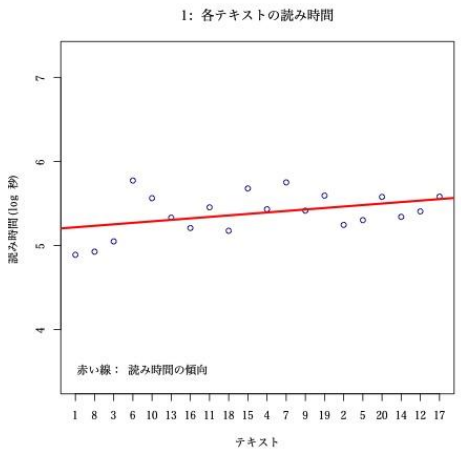

Figure 1. Feedback provided to a participant showing their log-transformed RTs for the 20 texts in Block 1 (the red line is the trendline).

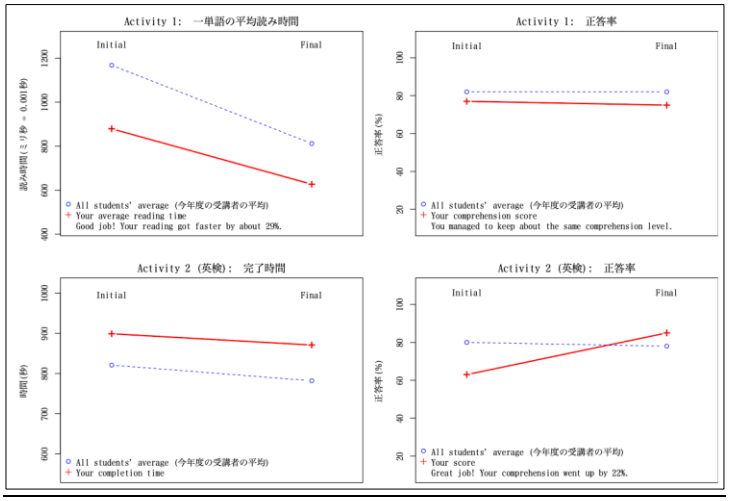

Figure 2. Feedback for the pre- and post-tests. (Top row: Task 1; bottom row: Task 2. Left: reading time; right: comprehension. Blue dashed lines: overall trends for all submissions; red solid lines: trends for one participant.)

3. Outcomes

Measuring the effectiveness of the TRP on reading fluency

Two tasks were used as pre- and post-tests to measure the effects of the TRP (see Figure 2 for an example of individual feedback provided to participants at the end of the program). For each task, each participant saw a different set of materials in each test session, with the order of the sets counter-balanced across participants. Results were comparable to those for the AY2023 participants.

In Task 1, a non-cumulative moving-window self-paced reading study conducted on PCIbex (Zehr & Schwarz, 2018) presented 40 sentences one word at a time as the participant pressed the spacebar of the computer keyboard. Each sentence was followed by a true/false comprehension question. Nine participants indicated that they could not submit this task because they did not have access to an internet-connected computer. For the 41 participants who submitted both sessions, there was no difference in the comprehension scores (pre 80.7%, post 81.5%; β =-.052, p=.585; mixed-effects logistic models, function *glmer* in the package *lme4*, Bates et al. 2015). Mean reading times per word in the post-test were 343 milliseconds faster than in the pre-test (pre 1155 ms, post 812 ms; mixed models: β =-254, p<.001; functions *lmer* and *step* in the package *lmerTest*, Kuznetsova et al., 2017, in R, R Core Team, 2022).

In Task 2, participants had 15 minutes to answer 41 questions from the four lowest levels of a standardized English test (Eiken test; https://www.eiken.or.jp). A total of 39 participants had data for both sessions. Their mean time to complete the task was 39 seconds faster in the post-test (782 seconds) than in the pre-test (821 seconds; β =-43.26, p<.0001) while maintaining comparable scores (pre: 82.30%, post: 79.22%; β =.22, p=.47).

Extra activities

Eighteen participants read all 120 texts of the TRP compared to 22 participants in AY2023, suggesting that the offer of an Xreading subscription did not increase participants' motivation to finish reading all the TRP texts. Six of those participants requested and were provided with subscriptions to the Xreading page. Table 1 summarizes their reading activities.

Table 1 Six participants' activities in the Xreading homepage

Participant	Books read	Words Read	Average Book Level	Read Time (h:m:s)	Read Speed (Word/Min)
1	19	16,295	7	2:27:12	110.7
2	29	13,436	4	2:44:49	81.5
3	17	4,744	3	0:44:16	107.2
4	2	2,136	3	0:17:26	122.5
5	1	65	1	0:01:29	43.8
6	0	0	0	0:00:00	0

Measuring engagement in the online course

Figure 3 summarizes participants' activities in the course. Figure 4 restricts the counts to the activities related to reading the texts and answering the quizzes of the TRP. The dip in access in mid-March was due to the HOPE homepage being unavailable for a system update between March 14 and 16.

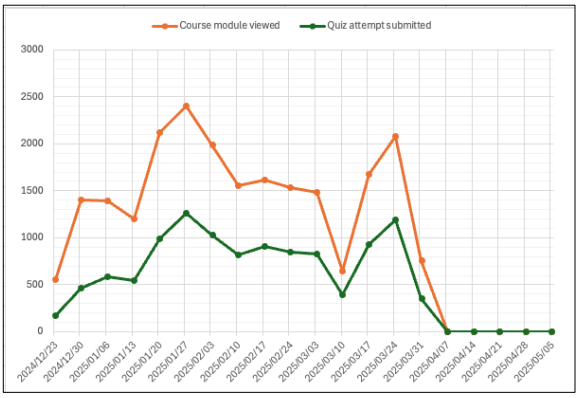

Figure 3 All activities

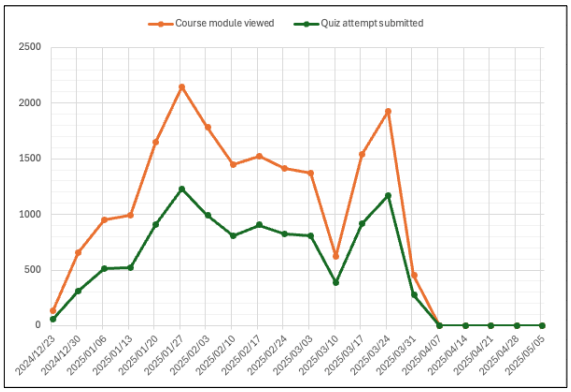

Figure 4 Activities related to TRP texts and quizzes

Of the 102 participants registered, four never accessed the course. From mid-December 2024 until the first week of April 2025, the remaining 98 participants viewed the course 71,962 times, an increase of more than 20% compared to the AY2022 (58,653) and AY2023 programs (51,999). Participants posted 61,077 times (which mostly included submitting activities such as reading texts and answering quizzes), an increase of over 30% from AY2022 (34,289) and AY2023 (45,194). The average total access time also increased to 22.6 hours (median 11.68) from 18.15 hours in AY2023 (median 7.03; Wilcoxon: W=3793, p=0.21; no comparable data was available for AY2022 because of HOPE's limitations). The TRP program was largely unchanged from AY2023, therefore these increases suggest that the students this year were more motivated than in previous years.

Survey

A survey was conducted in Japanese to collect participants' reflections at the end of the program. Participants provided ratings for the English section of the program (questions Q1 to Q8), their attitude toward English after attending the program (Q9 to Q12), and their activities in English outside the program (Q13 to Q18). See Table 2 for the results for 34 unique respondents (down from 46 in AY2023, when students were given two extra weeks until the middle of April to fill in the survey; translations of the questions were partly based on

https://www.deepl.com/translator).

Results were similar to those of previous years. Questions Q1 and Q2 indicate that participants have difficulty organizing their studies and completing tasks on a regular basis. The program may have helped draw their attention to the issue (see comments for Q19 later). Q3 suggests that the difficulty of the texts was close to ideal, not too difficult, not too easy. Questions Q4 to Q8 indicate that participants felt the program was appropriate. Questions Q9 to Q12 suggest that the program had a modest contribution to participants' motivation and interest in reading in English. Questions Q13 to Q17 reiterate the importance of offering this type of program as participants seem to do little study on their own.

Table 2 Preparatory Education Program (English) survey results

Questions	Median	Mean	SD	N
Q1. In this program, it was important to do the tasks regularly, rather than doing them all at once in one session. I was able to complete the tasks regularly every day.	3	3.06	1.41	34
Q2. It felt like a burden to do the tasks every day.	4	3.47	1.11	34
Q3. The texts became more difficult along the blocks. Was the difficulty level of each block appropriate?	3	3.44	0.70	34
Q4. The teaching materials were well-designed, and their explanations were easy to understand.	4	4.47	0.83	34
Q5. The program's methods were appropriate to help participants achieve learning objective 1 of the course. Objective 1: Practicing autonomy and independence to study.	5	5.06	0.74	34
Q6. The program's methods were appropriate to help participants achieve learning objective 2 of the course. Objective 2: Practice English reading.	5	5.21	0.73	34
Q7. After entering university, I would like to continue to practice English reading using a program like this one.	5	4.56	1.13	34
Q8. I would recommend this program to future university freshmen.	5	4.94	0.85	34
Q9. It has increased my motivation to read English.	4	4.15	1.02	34
Q10. It has increased my interest in reading English.	4	4.12	1.04	34
Q11. It has increased my confidence in reading English.	4	3.79	0.99	33
Q12. I enjoy reading English more.	4	3.97	1.14	34
Q13. I studied English outside of this program.	1	1.18	1.22	34
Q14. I watched films, dramas, and so on in English.	2	2.68	1.68	34
Q15. I read books, magazines, articles, and so on in English (including those on the internet).	3	2.68	1.49	34
Q16. I chatted in English using an app.	1	1.91	1.26	33
Q17. I had conversations in English (including phone calls, video chats, etc.)	1	1.59	1.13	34

※ Q3: 5-point scale （1: very easy ～ 5: very difficult）

Q1-Q2、Q4-Q17: 6-point scale （1: Not at all ～ 6: Very much）

For Questions 18 and 19, participants were free to type further comments (the following are translations based on https://www.deepl.com/translator).

Q18. Describe other activities using English, if any.

- *Programming (making function names with move xxx can get complicated, so vocabulary such as action, jump, attack, etc. is quite important).*
- *Watch EN's VTuber distribution*
- *I have often spoken with people from overseas on online games.*
- *English learning app*
- *I saw a youtube of a foreigner speaking English.*
- *Study abroad, homestay, conversation with ALT, exchange program –*

Q19. Other comments or suggestions regarding this program

- *Only Block 3 seemed extremely difficult.*
- *I think my reading speed of English sentences has become faster than before. Whenever I came across a word I didn't know, I voluntarily looked it up, so I think my vocabulary and knowledge increased.*
- *I have not had many opportunities to come into contact with English on a daily basis, so I felt that this program has helped me get into the habit of coming into contact with English a little more. I would like to take this opportunity to increase my exposure to English a little more.*
- *I will discuss this with you after enrollment.*
- *I was able to make my own plans and enjoy the learning process, and I really appreciated being able to see the progress of others on a weekly graph, which increased my motivation to learn.*
- *The amount of text increased dramatically around section 4, and the difficulty level was almost the same for sections 5 and 6, so I would have liked to see a more gradual change in difficulty and amount of text. I thought the flash leading, which took place only at the beginning and end of the course, was quite good, so I thought it could be done more often.*
- *I enjoyed the course very much. I hope this kind of program will continue in the future because I think it is good that English skills do not decline and those who are not good at English can increase their English skills. From my experience, I don't have many opportunities to come into contact with English during the first month after graduating from high school, so I highly recommend this program. It was fun!*
- *I am glad that I had this opportunity to read English before entering the school.*
- *I am not very good at English, but since many of the sentences were easy to understand, I feel that my sense of difficulty has eased a little. Thank you very much.*
- *I didn't realize that the assignments were continuing until I logged into hope, so I felt it would be easier to do if I could see the status of the assignments more easily. Also, I found it a little difficult to read a passage and then go back to it before proceeding to the quiz.*
- *I realized once again the importance of studying every day.*
- *Although I had time to read, I was too lazy to read all of them. I would like to read them systematically so that I will be able to accomplish this next time.*
- *Program 1 was fun to read because there were many old stories, but it was hard to understand the stories of foreign countries.*

Conclusion

The results of a timed reading program suggest that it can help improve participants' reading fluency. Compared to AY2023, there was an increase in participation with more submissions (i.e., posts) overall, and longer total access time. The offer of a subscription to the Xreading VL homepage provided an opportunity for the more dedicated participants to do further readings and its use should be expanded in the future.

References

Chang, A. C.-S. (2010). The effect of a timed reading activity on EFL learners: Speed, comprehension, and perceptions. *Reading in a Foreign Language*, *2*, 284-303.

Millett, S. (2017, accessed on May 10, 2022). *Speed Readings for ESL Learners*, No. 25-28. Also No. 24 (2007), 29 (2019). Available from: https://www.wgtn.ac.nz/lals/resources/paul-nations-resources/speed-reading-and-listening-fluency

Nation, P. (2005). Reading faster. *PASAA Journal*, *36*, 21-37.

Spargo, E. (1998). *Timed Reading Plus* (Book 3). Jamestown Publishers.

Tran, T. N. Y. & Nation, P. (2014). Reading speed improvement in a speed reading course and its effect on language memory span. *Electronic Journal of Foreign Language Teaching*, *11*, 5–20.

Zehr, J., & Schwarz, F. (2018). PennController for Internet Based Experiments (IBEX). https://doi.org/10.17605/OSF.IO/

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2-2-2. Preparatory Education in Math[1]

1. Program description

One of the fundamental abilities demanded of students enrolling in this university is a basic competence in mathematics. Students are expected to understand high-school mathematics such as Mathematics III, (differentiation/integration), which is directly related to the mathematics studied at the university. There is a tendency for students enrolling via the Comprehensive or the Recommendation exams (*early exams*, hereon) to have a lower level of competence in mathematics when compared to students enrolling via the General entrance exams. Although some students who enroll via the General First exam do not sufficiently understand the content of Mathematics III, among those selected via the early exams there are students without sufficient understanding of the even more basic contents in Mathematics II and Mathematics B, as well as Mathematics III. This tendency is especially pronounced for students enrolling through the Comprehensive exam. To address this concern, the university provides pre-enrollment education for those selected via the early exams, with the following purposes:

- To re-emphasize the importance of high-school mathematics, solidify the basics, and provide a review of Mathematics II, B, and III.
- To return to a stance toward studying in which elements that are not understood are not simply ignored, and that understood content is written in appropriate language.
- To steel oneself through engagement with university mathematics and get into the habit of studying continuously and independently.

2. Overview of AY2024 activity

(1) The distribution schedule and aims of the assignments

a. Assignment 1

- Schedule: Instructions were sent out around mid-December, returned when the Assignment 2 was sent out.
- Content: Review of high-school mathematics (Mathematics II, Mathematics B)
- The online distribution of lecture videos and materials for the special course in Mathematics II and B: For students who have not acquired the basics of Mathematics II and B, and for those who find it difficult to study on their own, recorded lecture videos and materials for the special lectures in Mathematics II and B were uploaded to the learning management system HOPE. In addition, students could only view the answers to the assignments after uploading a photo of their own answer.
- Aims: To review content that will be particularly needed immediately after enrollment from among the basic content of high-school mathematics (complex numbers and equations, trigonometric functions, exponential and logarithmic functions, differentiation, integration, and sequences). In doing so, areas where understanding is ambiguous or insufficient will be identified prior to enrollment, solidifying the fundamentals.

b. Assignment 2

- Schedule: Instructions were sent out in late January, returned when the Assignment 3 was sent out.
- Content: Review of high-school mathematics (Mathematics II, Mathematics B, and Mathematics III)
- The online distribution of lecture videos and materials for the special lectures in Mathematics III：For students who have not acquired the basics of Mathematics III, and for those who find it difficult to study on their own, recorded lecture videos and materials for the special lectures in Mathematics III were made available on HOPE. Students could only view the answers to the assignments after uploading a photo of their own answer.

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[1] This is a translation from the Japanese report partly based on output from DeepL(https://www.deepl.com/translator).

- Aims：To engage with content of high school mathematics (Mathematics III) centered on calculations (limits, sequences, differentiation, integration) highly relevant to Analysis I and Analysis II, which are compulsory courses in the first academic year. In doing so, students who have not covered this coursework in high school will become accustomed to the content of Mathematics III, which will assist them in understanding Analysis I and II.

c. Assignment 3

- Schedule: Instructions were sent out in mid-March. There was no required submission. Answers were distributed from HOPE after enrollment in early April.
- Content: Preparation for Analysis 1
- Aims: By taking ahead of university lectures, students will understand that the content of high school mathematics is deeply connected to the content of university mathematics and realize how important it is for students to have a solid foundation in high school mathematics. Another goal is to encourage students to see the mathematics they will learn at university and to develop a habit of continuous and independent study in order to prevent them from not being able to keep up with mathematics-related subjects after entering university.

(2) Leveraging ICT in interactive dialogues, feedback, and the construction of an environment for taking special classes in Mathematics II, B, and III.

We built an environment for pre-enrollment education using HOPE.

① Distributing comments (explanations of each question, advice, the rate of correct answers) from faculty members according to the status of the assignment
② Setting up a forum for dialogue between students, and also between faculty members and students
③ Carrying out a “Questionnaire regarding Pre-enrollment Education” targeted at students
④ Aggregation of detailed data on the responses to each question
⑤ Distributing lecture videos recorded in 2020 and materials for the special courses for Mathematics IIB and Mathematics III.
⑥ Reference books

3. Outcomes

The schedule for the three assignments was similar to that of the previous academic year. In AY2024, 102 students out of 103 prospective students in the Comprehensive and Recommendation type selections took the pre-entrance education course. 102 students submitted assignment 1 and 99 students submitted assignment 2.

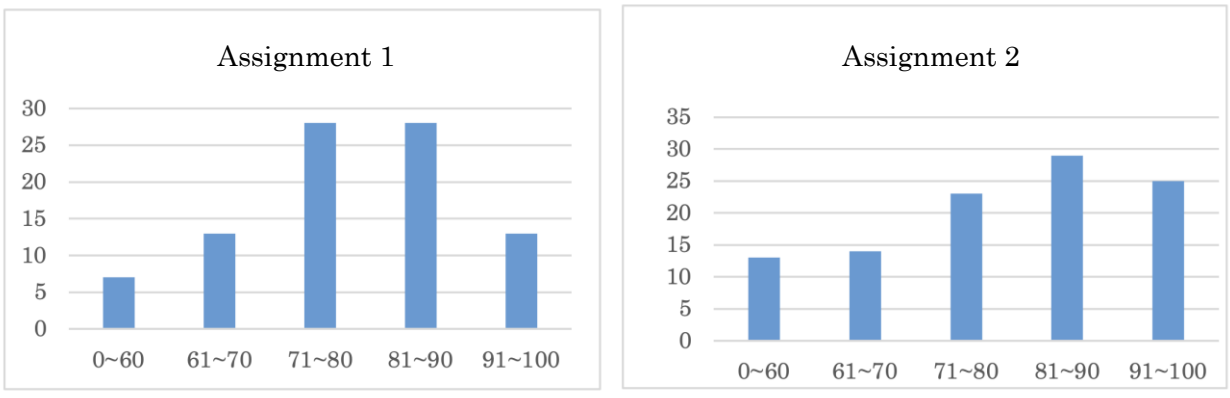

Figure 1 Distribution of the percentage of respondents scoring on Assignment 1 and 2
(vertical axis: number of respondents (persons); horizontal axis: percentage of respondents scoring (%))

The ICT-based learning environment is creating an environment for feedback from instructors, and for dialogue between instructors and students, and between students and each other. This year, assignments were downloadable from HOPE and distributed in paper form for convenience and facilitation of review of assignments. There was no spontaneous participated in the dialogue with faculty members or among students. Consideration of the use of the dialogue function is required.

According to a survey answered by 66 students out of 103, 29% were accepted to the university through the Comprehensive exam and the remaining 71% through the Recommendation exam. The percentage of students who took high-school math courses was as follows: 100% for Math 1, 100% for Math A, 100% for Math II, 95% for Math B, and 48% for Math 3. Ratings for high-school math aptitude on a 5-point scale (1: extremely inept; 5: extremely skillful) had a mean of 3.3. Ratings for whether they had a good understanding of high school math for their college studies on a 5-point scale (1: not at all; 5: very much so) had a mean of 2.9.

In addition, lecture videos and materials recorded in the Math IIB and Math III special course aids were distributed via HOPE. The aim was to provide learning support to those students who have not grasped the basics of Mathematics II, Mathematics B, and Mathematics III as well as those who find independent learning difficult. And we also added a setting that requires the user to upload his or her own answers in order to view the answers to the exercise printouts. Regarding the viewing of videos, we believe that we were able to provide learning support to some students. Detailed answer data for each question of each assignment has been compiled (see the Pre-Enrollment English Field Report for a tentative summary), but how to analyze and utilize this data in the future is an issue to be considered.

Staff: Yuzuru Kato, Yasufumi Yamada

2-3. Supplementary Education

2-3-1. Supplementary Math Lectures (Math ⅡB, MathⅢ)[1]

1. Program description

The Supplementary Math Lectures have been made available to students taking “Analysis I” and “Analysis II”, which are compulsory subjects for 1st year students. The exercise-style special lectures cover high-school level topics from Mathematics III and Mathematics IIB (Math III and Math IIB, hereafter). These lectures continue to be conducted every year.

2. Overview of AY2024 activity

The Supplementary Math Lectures from AY2020 to AY2021 were conducted online, however from AY2022 onward, the previous face-to-face method was reinstated.

(1) Math IIB supplementary lecture

Target: In “Analysis I”, a basic scholastic exam is administered immediately after the first semester begins. Based on the results of it, faculty in charge of each class required students who were judged to have not reached a certain level of understanding of high school mathematics to take the supplementary lectures in Math IIB. For the second semester “Analysis II”, the attendees were determined based on the grades in the first semester and the score of the basic scholastic exam.
Period: 8 sessions in the first semester from May to July, 7 sessions from October to November (one and a half hour per lecture)
Place: Room791
Number of participants: 39 in the first semester and 43 in the second semester.
Lecturer: Mr. Junichi Tanifuji (teacher at Hakodate Shirayuri High School)

(2) Math III supplementary lecture

Target: open to all interested students attending “Analysis I” and “Analysis II”
Period: 8 times from May to July, 7 times from October to November (one and a half hour per lecture)
Place: auditorium
Number of participants: First semester average 66, Second semester average 49
Lecturer: Mr. Takayuki Hatazawa (teacher at Hakodate Municipal High School)

<Activities>

- The lecturer and the faculty in charge (A/Prof. Kato and A/Prof. Yamada) coordinated the contents of each session, adjusting to the students’ progress in Analysis I & II.
- The exercises of the Math IIB supplementary course were graded by TAs (self-assessment), and the instructor in charge of the course conducted a final check. In addition, attendance management (e.g., notes to absent students) for the Math IIB Special Course was conducted by the person in charge of implementing the course.
- Students were informed that the attendance in the Math III supplementary course would affect their grades in Analysis I & II.
- At the beginning of the year, we purchased in bulk Math III textbooks for Math III supplementary course.
- The exercises of the Math III supplementary course were graded by the students (self-assessment). Model answers were explained in the course, and PDF files were made available using HOPE, the learning management system (LMS) at FUN. In the second semester, attendance management was done by a TA.
- We shared the attendance status and graded results of each class for the Math IIB course, and the attendance

status for the Math III course with the faculty in charge of Analysis I and II.

3. Outcomes

(1) The effect of supplementary lecture (Math IIB)

Data collection for special math courses (Math IIB courses) has been ongoing since AY 2018 to verify learning effectiveness.

- The format of the special course in mathematics (Math IIB course) is as follows.
  AY 2018 Face-to-Face
  AY 2019 Face-to-face
  AY 2020 Online
  AY 2021 Online
  AY 2022 Face-to-face
  AY 2023 Face-to-face
  AY 2024 Face-to -face

- Students enrolled in the special course in mathematics (Math IIB courses) are those who were instructed to take the course by their respective class instructors in the university's required course “Analysis I and II” In the case of the academic year AY2024, there were 39 students in the first semester and 43 students in the second semester.

- The “grade point average” (the standard score for the final evaluation, such as S, A, B, etc.) for each class in each year was used as an index for verifying of learning effectiveness. The grade point values were converted to standardized scores based on each year and class. For ease of reading the obtained indicators, the standardized scores were converted into academic deviation scores (mean = 50 points, standard deviation = 10).

- A three-factor analysis of variance was used to examine the effectiveness of a special course in mathematics (Math IIB courses). The year factor (2018-2024), the start of the course factor (first or second semester), and the course subject factor (participants or non-participants) were then established. Both were between subjects factors.

- The results of the three-factor analysis of variance are presented below. (Table.1, Fig.1)
  - No main effect was found for the year factor (n.s.).
  - A main effect was observed for the semester factor (first semester > second semester, $p<.01$).
  - A main effect was observed for the subject factor (non-participants > participants, $p<.01$).
  - There was no interaction between the year factor and the semester factor (n.s.).
  - There was no interaction between the year factor and the subject factor (n.s.).
  - Interaction was observed between the timing of the course and the subject factor.（$p<.01$）Simple main effect test results indicated that in both years, only students who received course instructions showed a decrease in academic deviation（$p<.05$）. However, no change in academic deviation was observed for students who did not receive course instructions.
  - There was no quadratic interaction between the year factor, the semester factor, and the subject factor.

Table.1 Academic deviations in each semester (2018-2024)

数IIB講習	指標	2018前	2018後	2019前	2019後	2020前	2020後	2021前	2021後	2022前	2022後	2023前	2023後	2024前	2024後
Subject	平均値	43.50	41.00	41.69	38.82	44.14	37.39	43.01	37.20	39.89	37.72	45.44	39.61	42.70	36.00
	標準偏差	7.76	8.32	9.68	12.26	11.77	11.21	10.48	12.24	9.80	8.68	10.99	9.49	9.63	11.67
	データ数	42	35	43	40	45	33	39	26	32	40	37	36	39	39
Non-Subject	平均値	51.39	51.54	51.90	52.34	51.39	52.70	51.34	51.57	51.55	52.48	51.09	51.80	51.35	52.71
	標準偏差	9.92	9.48	9.11	7.67	9.05	8.15	9.35	8.54	9.13	8.28	9.58	8.98	9.52	6.99
	データ数	197	204	188	191	189	201	202	213	209	198	210	208	211	202

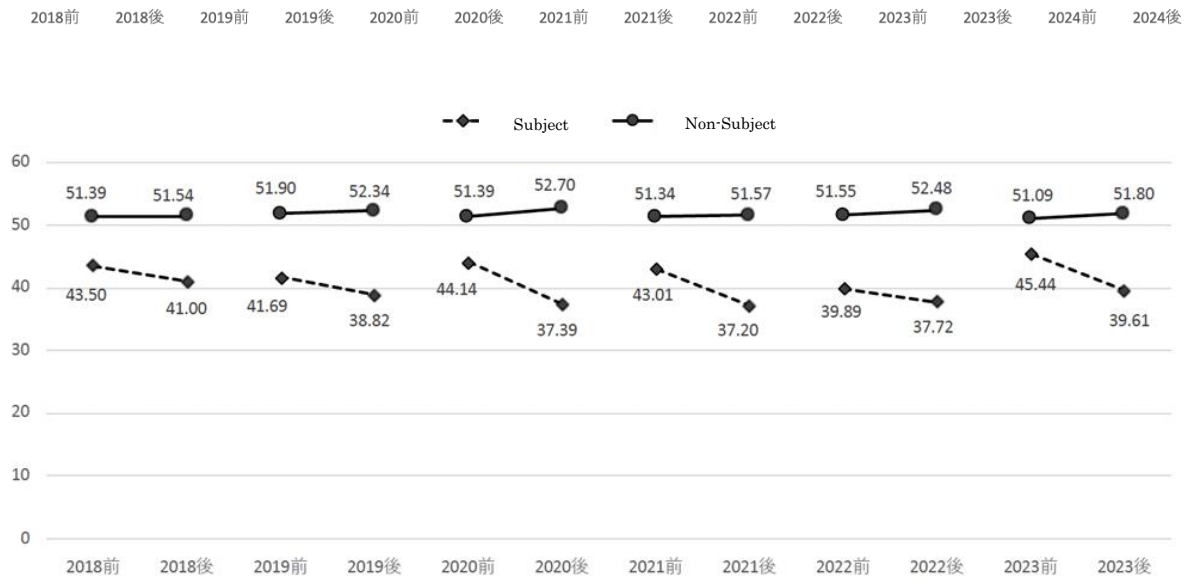

Figure 1. Academic deviations in each semester (2018-1024)

- The results of the analysis showed that the difference in academic deviation between the subjects and non-subjects in the first semester became larger in the second semester. This result is similar to the trend in previous years. This result indicates the need for continued research and consideration of how to provide learning support throughout the year.

(2) The effect of supplementary lecture (Math III)

- Special courses in mathematics (Math III supplementary lecture) are offered only to those who apply for them; in AY2023, the courses were offered in a face-to-face format. 8 courses were offered in the first semester and 7 in the second semester.

- A tally was made of the number of times each participant attended Math III supplementary lecture in AY2024. The results showed that the number of times each participant attended throughout the year was as follows.

- In the first semester of AY2024, a total of 121 people attended. In addition, a total of 74 attended the second semester. Of all attendees in the first semester, 27 (22.3%) attended all sessions. Of all participants in the second semester, 24 (32.4%) attended all sessions.

Number of Attendances	1	2	3	4	5	6	7	8 (1st semester only)
First Semester	25	14	11	12	12	11	9	27
Second Semester	11	7	4	10	6	12	24	

(Percentage of all participants in the first semester=22.3%: Percentage of all participants in the second semester=32.4%)

Figure 2. The attendance rate in the supplementary lecture (Math III)

- In AY2024, 121 of the 250 students eligible for the first semester participated in the Math III supplementary lecture. Of the 241 students eligible for the second semester, 74 participated. This result indicates that approximately half of the participants in the first semester attended the special course for Math III, and about one-third of the participants in the second semester attended the special courses in mathematics. The Math III in supplementary lecture was offered to participants who felt the need to take it themselves. Since about one-third to one-half of the participants took the course voluntarily, it is considered necessary to continue offering the course in the future.

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[1] This is a translation from the Japanese report partly based on output from DeepL(https://www.deepl.com/translator).

Staff**:** Yuzuru Kato, Yasufumi Yamada, Yoshihito Tsuji

2-3-2. Connections Café

1. Program description

Connections Café offers students opportunities to practice speaking and listening to English. The aims of Connections Café 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 communication tool, and
3. offer students new perspectives of the world.

The main activity conducted is called "small-group sessions." These sessions are led by a part-time English-speaking facilitator and held 3 or 4 times most days during the semester (up to 17 times per week). Each face-to-face session lasts 40 minutes with a maximum of eight students. Supplemental activities are also conducted by FUN faculty to provide additional support and communication opportunities.

2. Overview of AY2024 activity

Table 1 gives an overview of the 2024 sessions. In addition to small-group sessions, the following summarizes the activities done:

Preparatory

- The 2024 Connections Café course page was created on HOPE. Students could use the course to access Connections Café information and attendance records.
- The facilitator documentation for managing small-group sessions was updated.
- The annual facilitator orientation was held.

Special Session (Spring)

- 4 lunchtime presentation sessions (3 by A/Prof. Johnson, 1 by Prof Frank)
- 2 study abroad sessions (A/Prof. Johnson)
- 5 'Skills and Resources' sessions (A/Prof. Johnson)
- 9 TOEIC preparation sessions (A/Prof. Ruthven-Stuart)
- 10 miscellaneous sessions ('YouTube', 'Speaking Training', 'Games') (A/Prof. Johnson)

Special Session (Autumn)

- 2 lunchtime presentation sessions (1 by A/Prof. Johnson, and 1 by students)
- 9 TOEIC preparation sessions (A/Prof. Ruthven-Stuart)
- 5 miscellaneous sessions ('YouTube', 'Speaking Training', 'Games') (A/Prof. Johnson)

Information Sharing

- Introduced Connections Cafe during first- and second-year VEP Orientations
- Sending emails to all students at beginning of semesters and before special sessions
- Sending messages on the 1st- and 2nd-year VEP course announcement forums
- Using Connections Cafe LINE group (approximately 60 members in February 2025)

Table 1. Overview of Connections Café sessions

	Spring 2024	Autumn 2024
Open	Weeks 2-15	Weeks 1-15
# of small-group sessions	234 (~17x / week)	252 (~17x / week)
# of special sessions	30	16
Small-group session capacity	8 students	8 students

3. Outcomes

Table 2 shows the AY2024 spring and autumn attendance data for Connections Café. For small-group sessions, AY2024 attendance was 1230 for 486 sessions, for an average of 2.5 students per session. With the 46 special sessions included, the total attendance was 1432, resulting in an increase in total attendance of 10% over AY2023. Regarding the TOEIC Sessions, total attendance was 54 for 9 sessions (average: 6.0) in the spring semester, but only 7 for 9 sessions (average: 0.8) in the autumn semester.

Table 2. 2024 Attendance Data

	Attendance (All | Small-Group Sessions | Special)	# Unique Students Attended (All | Small-Group Sessions | Special)	Avg. # Sessions Attended / Student (All | Small-Group Sessions | Special)	Avg. # Students per Session (All | Small-Group Sessions | Special)	Max # Sessions Attended by a Student (All | Small-Group Sessions)	# Students Attending [5+ | 15+ | 25+] Sessions (All)
Spring	942 | 769 | 173	166 | 147 | 55	5.7 | 5.2 | 3.1	3.6 | 3.3 | 5.8	42 | 41	52 | 15 | 7
Autumn	490 | 461 | 29	101 | 98 | 19	4.9 | 4.7 | 1.5	1.8 | 1.8 | 1.8	56 | 52	25 | 5 | 3

Staff: Dominic Bagenda, Adam Smith

2-4. First-Year Education (English)

1. Program description

The primary goal of the program is to help students improve their English language ability—specifically, their speaking, listening, reading, and writing skills, as well as their grammar skills and vocabulary knowledge. This group's efforts are chiefly focused on the first-year Communication courses (Communication 1 and 2) and the two-year Virtual English Program (VEP1 - VEP4).

(1) Communication 1 and 2

Both courses focused on listening and speaking skills. Students used a single textbook for the whole year: one from Oxford University Press' Q: Skills for Success series which targeted the CEFR A2 level. In the courses, textbook activities were supplemented with participation in an online international exchange as well as goal setting and reflection activities.

The four instructors used a single Moodle course for presenting information, giving assignments and online tests, and collating grades. The same set of assessment items was required of all students, and each assignment was graded using a single rubric.

(2) VEP1 - VEP4

The Virtual English Program is a set of four online courses taken by first- and second-year students. The program is supervised by A/P Ruthven-Stuart, A/P Johnson and A/P Smith. In addition to some required units and activities, students are able to choose from a selection of topics and activity types. This freedom means that students need to take responsibility for when, where, what and how they study.

2. Overview of AY2024 activity

(1) Communication 1 and 2

In order to identify changes in their English communication skills, students were asked to complete a skills assessment at the start and near the end of each course.

For both courses, the skills assessment consisted of two parts: Part A, and B. Part A was a 45-minute online test taken during the second lesson (pretest) and again during the final lesson (posttest). The tests were created by Oxford University Press (OUP) and covered eight textbook topics taught during the course: listening, vocabulary, note-taking skills, listening skills, pronunciation skills, vocabulary skills, speaking skills and grammar. All questions were multiple-choice and submissions were automatically graded. The posttest was worth 2.5% of the final grade.

Part B was a speaking test. To complete it, students recorded an up-to 60-second response to a question that was related to one of the topics in the textbook. Students were instructed to complete it in their own time between lessons 2 and 4 (pretest) and again between lessons 23 and 25 (posttest). After the posttest deadline, the Communication 1 and 2 instructors assessed all submissions using a grading rubric that was based on the grading rubrics used for the courses' speaking assignments. The voice recordings were downloaded, then anonymised and randomised. Each instructor was randomly allocated an equal number of students, and they assessed both submissions for each student. They were not informed whether a submission was a pretest recording or a posttest recording. The posttest was worth 2.5% of the final grade.

(2) VEP1

The VEP courses do not include skills assessments similar to those described above, however the TOEIC Bridge test is a required assessment item of VEP1. This online test was taken under supervised conditions in a classroom during the afternoon of Monday 8 July, 2024.

3. Outcomes

(1) Communication 1

For both the listening and speaking parts the mean posttest scores were higher than the mean pretest scores. A paired samples t-test was performed to compare the pretest and posttest results for each part. There was a significant difference in mean grade between the listening pretest ($M = 62.0$, $SD = 19.1$) and posttest ($M = 68.6$, $SD = 20.2$); $t(230) = 5.21$, $p < 0.001$, and between the speaking pretest ($M = 49.6$, $SD = 20.0$) and posttest ($M = 61.0$, $SD = 20.0$); $t(156) = 6.48$, $p < 0.001$.

(2) Communication 2

In the second semester, for both listening and speaking parts the mean posttest scores exceeded the mean pretest scores. A paired samples t-test compared the pretest and posttest results. There was a significant difference in mean grade between the listening pretest ($M = 59.5$, $SD = 19.6$) and posttest ($M = 69.3$, $SD = 18.8$); $t(226) = 8.11$, $p = < 0.001$, and between the speaking pretest ($M = 55.6$, $SD = 17.9$) and posttest ($M = 61.5$, $SD = 20.4$); $t(160) = 3.2$, $p = 0.002$.

The above analyses indicate that AY2024 first-year students' English skills improved during the Communication 1 and 2 courses, and provide evidence of the success of Future University's first-year English program.

(3) VEP

First-year FUN students have taken the TOEIC Bridge test since 2006; since 2011 as part of the VEP1 course. From 2020, however, the TOEIC Bridge test was fundamentally changed, and it is difficult to reliably compare the results of the two versions. For this reason, only the results from the previous five years are shown below in Table 1.

Table 1 Results of the TOEIC Bridge test for first-year FUN students 2020 – 2024

Year	n	Listening[1]	Reading[1]	Total[2]
2020	204	31.7	40.9	72.6
2021	221	33.3	41.0	74.3
2022	200	32.5	41.1	73.6
2023	232	31.4	38.9	70.3
2024	250	32.3	37.9	70.2

Notes: [1] min = 15, max = 50. [2] min = 30, max = 100

Although there is some variation in the results, they consistently indicate that the students' listening and

reading levels are within the A2 level of the Common European Framework of Reference for Language (CEFR). This suggests that the level of the Communication 1 and 2 textbook is appropriate.

(4) Changes to the VEP courses

The VEP supervisors (A/Ps Ruthven-Stuart, Johnson and Smith) completed their comprehensive review of the four VEP courses. The new courses use Reading and Writing versions of the textbook currently used in the Communication 1 and 2 courses, and include integrated pretests and posttests as well as measures to support struggling students.

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

2-5. Professional Development Activity[1]

1. Program description

In AY2024, the PD/Hokkaido FD/SD/CCH Group (hereafter referred to as the PD Group) held an activity related to the current status of first-year education at the university, with the aim of promoting PD (Professional Development) activities at the university.

2. Overview of AY2024 activity

- Hokkaido FD/SD Council

The Future University Hakodate completed its term as the Council's Executive Committee member in AY2023. The person in charge attended the Hokkaido FDSD Council General Meeting (June 6, 2024) and the Extraordinary General Meeting (December 25, 2024). The general meeting was attended by representatives from higher education institutions in Hokkaido to confirm annual activity policies and budgets. This meeting was held online (Zoom).

Moreover, the Hokkaido FD/SD Council usually holds the Hokkaido FD/SD Forum on the first weekend of September. This year, A/P Johnson gave a presentation on the activities of the Connections Café at the university.

3. Outcomes

● Hokkaido FD/SD Council

The faculty member in charge attended the Hokkaido FD/SD Council General Meeting (June 6) and the Extraordinary General Meeting (December 25).

At the Hokkaido FD/SD Forum 2024 (Friday, September 6, 2024), organized by the Hokkaido FD/SD Council, a faculty member of the university (A/P Johnson) gave an individual presentation on the activities of the Connections Café. The title of the presentation was “Using the BEVI to Measure Student Changes at a Language Learning Space”. The URLs of the materials related to the individual presentations are shown in the Appendix.

● Dissemination of information on FD/SD training sessions/seminar

Dissemination of the FD/SD training sessions organized by the Hokkaido FD/SD Council was conducted among university faculty and staff. The university-wide dissemination was conducted by the CML coordinator via e-mail to the faculty/staff mailing list (faculty-ml) or the mailing list of the Center for Meta-Learning (cml-ml).
In AY2024, 19 dissemination activities were conducted (4/8, 4/11, 5/7, 5/8, 6/10, 7/4, 7/10, 8/1, 8/8, 8/14, 8/20, 8/27, 10/10, 10/30, 11/12, 11/14, 12/16, 12/25, 1/8).

Appendix

The official URL and abstract for individual presentations at the Hokkaido FDSD Forum are posted below. (accessed. 2025/05/14, https://ctl.high.hokudai.ac.jp/seminar/fdsdforum2024/)

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[1] This is a translation from the Japanese report partly based on output from DeepL(https://www.deepl.com/translator).

Staff: Tomonori Hirano (Advisor: Yoshihito Tsuji)

2-6. Self-Evaluation for Learning Achievement

1. Program description

Future University Hakodate launched its "Self-evaluation for learning achievement" surveys from the latter half of academic year (AY) 2019. This system was adopted at the behest of the National Institution for Academic Degrees and Quality Enhancement of Higher Education in its University Institution Certification Evaluation report for AY 2018. Students evaluate their progress toward achieving the learning goals presented in the University's Diploma Policy and Curriculum Policy. The purpose of the self-evaluation is to assist students in setting goals and creating plans for full achievement. By making continuous and successive plans from their first year through to graduation, students can get a sense of their own growth and continue their learning based on concrete goals.

There are seven assessment survey items, listed below, which were created on the basis of the Diploma Policy. Detailed explanations, based on the Curriculum Policy, are provided for each item. Students are to read the detailed items and then respond using the provided seven-point scale, which ranges from **"1. Not achieved at all" to "7. Well achieved."** Then, considering the results of their responses, each student may respond freely, writing about their goals and plans for the current academic term.

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-learning ability to foster autonomous and continuous learning
5. Humane professionalism

Survey responses are collected from all students twice a year, at the beginning of each school term that a student is registered. Students take an additional survey just before they graduate to enable reflection on their learning achievements during their university years.

2. Overview of AY2024 activity

The "Self-evaluation for learning achievement" survey was performed using the learning management system HOPE. Respondents were as follows: in the first semester, 396 students (174 first-year students, 125 second-year students, 65 third-year students, and 32 fourth-year students); in the second semester, 260 students (112 first-year students, 70 second-year students, 35 third-year students, and 43 fourth-year students). Furthermore, the survey was filled in by 191 graduates at the time of their graduation.

In addition, by using the "Automatic generation system of self-evaluation graphs for learning achievement" developed by the Kei Ito laboratory, each graduate's "Self-evaluation for learning achievement transition graph" was created and fed back to each student. This allowed each student to visually grasp the transition of learning achievement across the academic years.

3. Outcomes

Table 1 shows the mean values of each question item for each grade. Values in parentheses are mean values for AY2023. The trend is generally the same as in AY2023.

Table 1a. Aggregate results

	1. Superior professional ability (Common to all courses)			1. Superior professional ability (Courses Expertise)			1. Superior professional ability (Graduation Study)		
	First half	Second half	At graduation	First half	Second half	At graduation	First half	Second half	At graduation
1st-year students	3.1(1.7)	4.5(4.3)	—	—	—	—	—	—	—
2nd-year students	4.4(4.3)	4.6(4.6)	—	4.0(3.7)	4.6(4.4)	—	—	—	—
3rd-year students	4.7(4.5)	5.1(5.2)	—	4.8(4.5)	5.2(5.2)	—	—	—	—
4th-year students	5.7(5.4)	5.6(5.3)	5.8(5.6)	5.4(4.9)	5.5(5.1)	5.7(5.5)	4.6(4.7)	5.3(5.2)	5.8(5.6)

Table 1b. Aggregate results

	2. Inquisitiveness and Imagination to support healthy research attitudes			3. Expressiveness to support collaborative creativity and teamwork			4. Meta-learning ability to foster autonomous and continuous learning			5. Humane professionalism		
	First half	Second half	At graduation	First half	Second half	At graduation	First half	Second half	At graduation	First half	Second half	At graduation
1st-year students	3.3 (3.0)	4.2 (4.2)	—	3.4 (3.1)	4.3 (4.3)	—	3.5 (3.2)	4.3 (4.3)	—	3.6 (3.4)	4.5 (4.3)	—
2nd-year students	4.3 (4.0)	4.4 (4.2)	—	4.4 (4.0)	4.7 (4.5)	—	4.4 (4.2)	4.5 (4.2)	—	4.5 (4.2)	4.6 (4.4)	—
3rd-year students	4.6 (4.2)	4.7 (4.9)	—	4.5 (4.2)	5.0 (5.2)	—	4.5 (4.4)	4.5 (5.1)	—	4.6 (4.8)	4.7 (5.4)	—
4th-year students	5.1 (4.8)	5.3 (5.0)	5.6 (5.6)	5.0 (5.3)	5.0 (5.3)	5.6 (5.5)	5.2 (4.8)	5.3 (5.1)	5.6 (5.4)	5.5 (4.8)	5.4 (5.3)	5.7 (5.5)

Figure 1 shows the mean values of each question item from the second semester of the first year to the time of graduation for students who enrolled in AY2021 and graduated in AY2024. In the first year, the mean values for all items were about 2.6 to 3.1, however they improved to about 5.6 to 5.8 at the time of graduation.

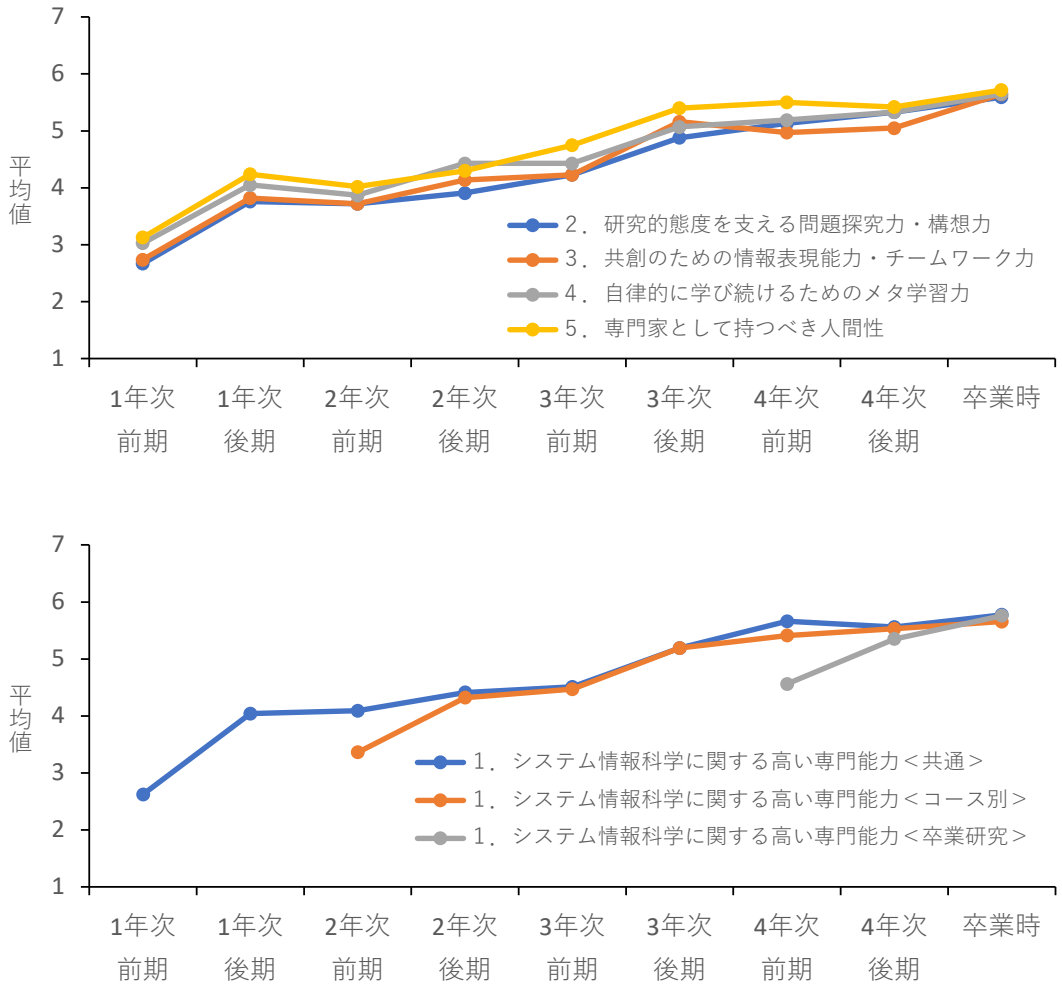

Figure 1. "Self-evaluation for learning achievement transition graph" of students enrolled in AY202 1

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[1] This is a translation from the Japanese report partly based on output from DeepL(https://www.deepl.com/translator).

Staff: Atsuko Tominaga, Tomonori Hirano

付録
Appendices

付録1

公立はこだて未来大学メタ学習センター規程

（平成２０年公立大学法人公立はこだて未来大学規程第３０号）

（趣旨）

第１条　この規程は，公立はこだて未来大学学則（平成２０年公立大学法人公立はこだて未来大学規程第１号）第７条第２項の規定に基づき，公立はこだて未来大学メタ学習センター（以下「センター」という。）について必要な事項を定めるものとする。

（目的）

第２条　センターは，情報技術分野の専門教育の基礎として，大学における学習方法の教育を主たる目的とし，特に，総合的なコミュニケーションの能力および幅広い教養と多角的な視点から物事を判断する能力の養成を中心として，将来にわたり持続的に発展していく社会に資する人材を輩出するための活動を実施する。

（業務）

第３条　センターは，次に掲げる業務を行う。

(1) 専門教育を受け入れる素地をつくる基礎教育のカリキュラム開発および実施の企画に関すること。

(2) 新入生の導入教育の企画に関すること。

(3) ファカルティ・ディベロプメント（教育・研究・運営に関する人材育成および組織改革）の企画に関すること。

(4) 教育研究および学習研究に関すること。

(5) 大学の教育活動を中心とした建学理念の共有化に関すること。

(6) その他公立はこだて未来大学における教育および学習活動に関すること。

（事務職員）

第４条　センターに事務職員を置く。

２　事務職員については，公立大学法人公立はこだて未来大学の事務組織に関する規程（平成２０年公立大学法人公立はこだて未来大学規程第２３号）の定めるところによる。

（審議）

第５条　センターの運営方針に関する事項について審議するため，メタ学習センター運営委員会（以下「委員会」という。）を置く。

２　委員会に関し必要な事項については，別に定める。

（補則）

第６条　この規程によるもののほか，必要な事項は，メタ学習センター長が別に定める。

附　則

この規程は，平成２０年４月１日から施行する。

附　則（平成２２年３月１５日規程第２８号）

この規程は，平成２２年４月１日から施行する。

付録２

公立はこだて未来大学メタ学習センター運営委員会規程

（平成２０年公立大学法人公立はこだて未来大学規程第３１号）

（趣旨）

第１条　この規程は，公立はこだて未来大学メタ学習センター規程（平成２０年公立大学法人公立はこだて未来大学規程３０号）第５条第２項の規定に基づき，公立はこだて未来大学メタ学習センター運営委員会（以下「委員会」という。）について必要な事項を定めるものとする。

（所掌事項）

第２条　委員会は，次に掲げる事項を審議する。

(1) 公立はこだて未来大学メタ学習センター（以下「センター」という。）の運営方針に関すること。

(2) センターが実施する事業の企画，立案等に関すること。

(3) その他センターの運営に関すること。

（組織）

第３条　委員会は，次に掲げる者を委員として組織する。

(1) メタ学習センター長

(2) 公立はこだて未来大学の専任の教授，准教授，講師および助教のうちから学長が指名する者

（委員の任期）

第４条　委員の任期は，２年とし，再任を妨げない。ただし，欠員により新たに委員となった者の任期は，前任者の残任期間とする。

（委員長）

第５条　委員会に委員長を置き，メタ学習センター長をもってこれに充てる。

（会議）

第６条　委員長は，委員会の会議を招集し，その議長となる。

２　委員長に事故があるときは，あらかじめ委員長が指名した委員がその職務を代理する。

３　委員会の会議は，委員の過半数の出席がなければ開くことができない。

４　委員会の会議の議事は，出席委員の過半数によって決定し，可否同数のときは，議長の決するところによる。

（委員以外の者の出席）

第７条　委員会が必要と認める場合は，委員会の会議に委員以外の者の出席を求め，その意見を聴くことができる。

（庶務）

第８条　委員会の庶務は，事務局教務課において処理する。

（補則）

第９条　この規程に定めるもののほか，必要な事項は，委員長が別に定める。

附　則

この規程は，平成２０年４月１日から施行する。

附　則（平成２２年４月１日規程第６１号）

この規程は，平成２２年４月１日から施行する。

メタ学習センター
Center for Meta-Learning

CML ロゴマーク：二重の円は、「Learning ） Meta-Learning」の関係を表現。顔あるいはカップの見立ては、人が集まる場をイメージしたもの。
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.

作成：公立はこだて未来大学メタ学習センター
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(March 2025)