



October 11, 2022
2022 Assessment Institute Indianapolis

Designing a Hybrid FYE Course: How Student Satisfaction and Learning Gains Vary by Course- Delivery Methods

Satoko Imaizumi, Takahiro Abe, Tetsuya Shiroishi,
Douglas Gloag, Katsumi Senyo, Takao Hashizume,
Koji Fujiwara

Email: imaizumis@cc.yamagata-u.ac.jp

Outline

- In 2022, we designed a hybrid FYE course, incorporating on-demand contents with smaller sized face-to-face class activities.
- Two kinds of assessment (direct/indirect) were conducted to evaluate the educational effectiveness.
- Assessments showed good results overall.

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1. Yamagata University & Higher Education in Japan



Where is Yamagata?

Yamagata prefecture

Yamagata city

Tokyo

山形大学
Yamagata University

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Yamagata University (YU)

- Type: National University
- Year Founded: 1878
- Undergraduate students: 7,322 (May 2022)
- First-year students: 1,695 (April 2022)

■ Campuses:	■ Faculties:
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- Humanities and Social Science (K)
- Education, Art and Science (K)
- Science (K)
- Medicine (I)
- Engineering (Y)
- Agriculture (T)

* All first-year students study at **Kojirakawa** campus.

山形大学
Yamagata University

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Key Characteristics of Higher Education in Japan

- Enrollment rate (University and Two-year colleges):
58.9% (MEXT, 2021)
- The academic year begins in April and ends in the following March
- Entrance Exams:
 - Standardized exam (Common Test for University Admission)
+ Faculty-specific exams
 - Recommendation-based admission
- Students generally decide their major when they apply for admission
 - Double or mixed majors are very rare
 - Can't change faculty easily after enrollment
 - Many compulsory courses in first year
- High expectation to graduate in four years

Characteristics of First-year Students in YU

- While PBL (Problem/Project Based Learning) classes in high schools are increasing, passing entrance exams is still prioritized.
- Lack of experience and teaching of presentations and discussions in high schools.
- There are not many opportunities to get to know the students of different faculties (especially for those who go to other campuses in second year).
- Most students are conscientious and attend most classes.

2. FYE Program at YU and 2022 modification



FYE Program at YU

■ Objective

Help and assist in smooth transition to university life for new first-year students

■ Mandatory for ALL first-year students

■ 2 semester credits (meet 15 times, 90 min./class)

■ Learning Outcomes

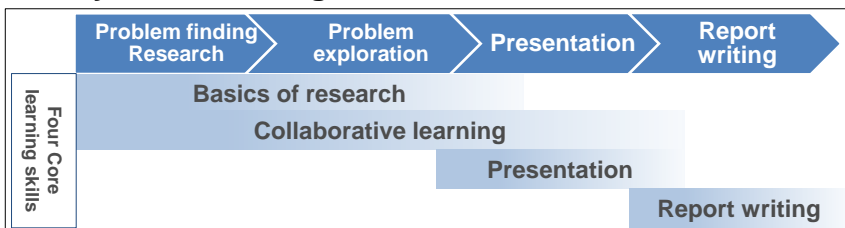
Students will develop **four core learning skills**:

1. **Basics of Research**
2. **Collaborative Learning**
3. **Presentation**
4. **Report Writing**

Course Outlines

- Two “cycles”
- Each cycle consists of learning and practicing the four core learning skills

The cycle of learning



- The second cycle reinforces what they have learnt and practiced using another topic

Course Schedule

Week	Topic
1	Introductions, Syllabus review
2	1 st Cycle_Basics of Research
3	1 st Cycle_Problem Finding/Exploration (1)
4	1 st Cycle_Problem Finding/Exploration (2)
5	1 st Cycle_Preparation for Presentation
6	1 st Cycle_Presentation Peer-review (1)
7	1 st Cycle_Presentation Peer-review (2)
8	1 st Cycle_Report Writing
9	2 nd Cycle_Problem Finding/Exploration (1)
10	2 nd Cycle_Problem Finding/Exploration (2)
11	2 nd Cycle_Preparation for Presentation
12	2 nd Cycle_Presentation Peer-review (1)
13	2 nd Cycle_Presentation Peer-review (2)
14	2 nd Cycle_Report Writing
Special lecture	Making Full Use of the Campus Libraries

Modification from 2019 to 2022

	Course delivery	Instructors	Number of Classes	Students per class
~2019	Face to face	~30	~70	25~30 / class
2020	On-demand	3	4	300~500 / class
2021	On-demand	4	4	300~500 / class
2022	Hybrid (On-demand + Face to face)	4	60	25~30 / class

Assessment Results of On-demand Course

- Two kinds of assessments were conducted continuously to evaluate the educational effectiveness.

1. Student survey (Indirect assessment)

⇔ students' self-evaluation / satisfaction

2. Comprehension test (Direct assessment)

⇔ students' learning gains

■ Results of On-demand Course (2021) in brief*

	Student Survey	Comprehension Test
Basics of Research		↑
Report Writing		↑
Collaborative Learning	↓	
Presentation	↓	

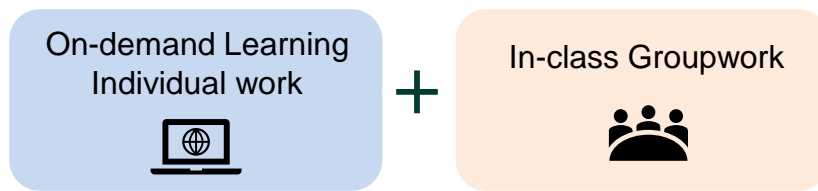
*Details in Abe et al (2021)

Missions for 2022

- Providing students with opportunities to practice groupwork and oral presentations
- Maintaining improvement on Basics of research / Report writing in on-demand course
- Keeping the number of instructors to a small size



Redesigned a **Hybrid FYE Course**



Hybrid Course in 2022

- 7 on-demand classes + 8 face to face classes / 15 weeks
- The first cycle:

Week	Agenda/Topic	Course delivery
1	Introductions, Syllabus Review	On-demand
2	1 st Cycle_Basics of Research	On-demand
3	1 st Cycle_Problem Finding/Exploration (1)	Face to face
4	1 st Cycle_Problem Finding/Exploration (2)	Face to face
5	1 st Cycle_Preparation for Presentation	On-demand
6	1 st Cycle_Presentation Peer-review (1)	Face to face
7	1 st Cycle_Presentation Peer-review (2)	Face to face
8	1 st Cycle_Report Writing	On-demand

- In F2F classes, lectures by the section manager are delivered to 15 classrooms simultaneously by Zoom, with the help of student assistance (SA) and a few faculty members.

Assessment Plan 1 & Assessment Results (Student Survey)



FYE Student Survey

- FYE student survey : Two assessments were conducted in FYE (**direct** & **indirect**)
- Indirect assessment (Since 2018)
- Survey conducted on “four core learning skills”
- The test was not designed for online class. Questions need to be revised.
- In 2020, Basics of research question wasn't asked because some questions were changed due to the response to the Covid pandemic.

Methods

1. Web-based survey after the lecture
2. On the last class day, answer the questions voluntarily
3. Questions about the four skills and Human relations
4. Number of valid responses:

2018: 1504/1705 (88.2%)

2019: 1505/1703 (88.3%)

2021: 1085/1676 (64.7%)

2022: 1388/1668 (83.2%)

この授業によって人前での口頭発表（プレゼンテーション）に慣れることができましたか？

Question

1. はい

2. まあそうである

3. どちらとも書えない

4. あまりそうは書えない

5. いいえ

Select own ideas

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終了

Survey screen

Questions about the Four Skills and Human Relations

The Four Skills

1. Basics of Research

Did this class deepen your understanding of research and information gathering methods?

2. Collaborative Learning

Did this class help you get used to group discussions and collaborative work?

3. Report writing

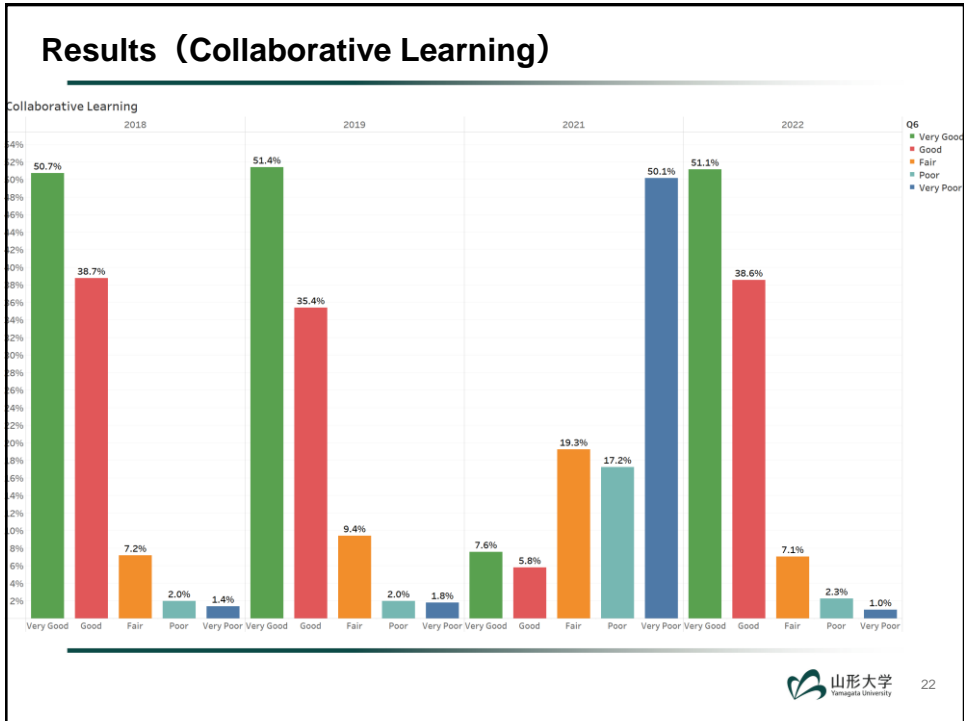
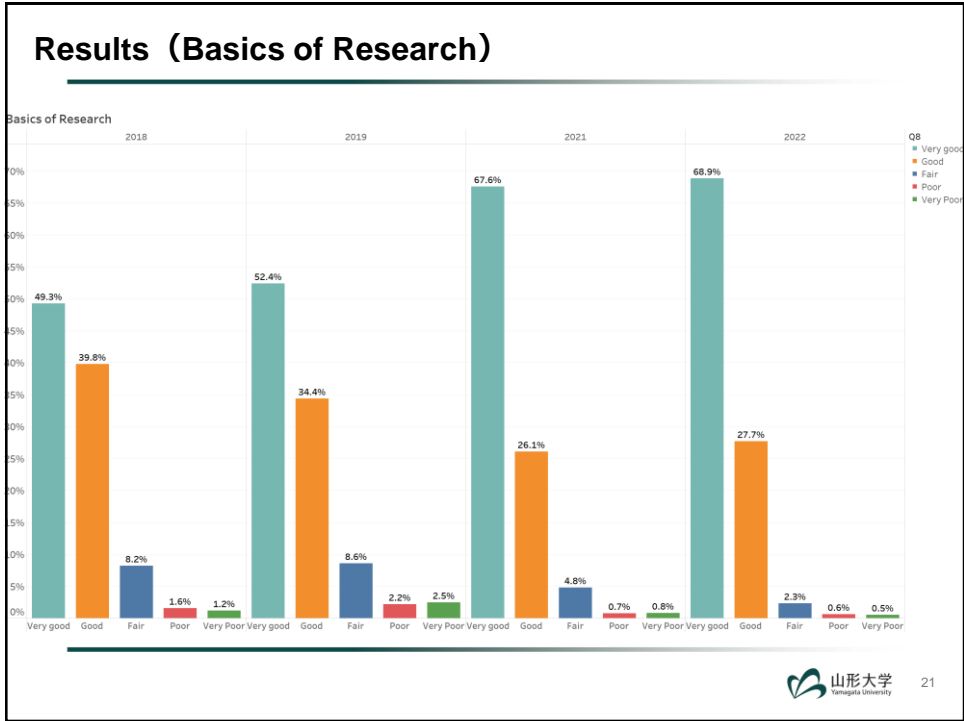
Did this class give you a better understanding of how to write a report?

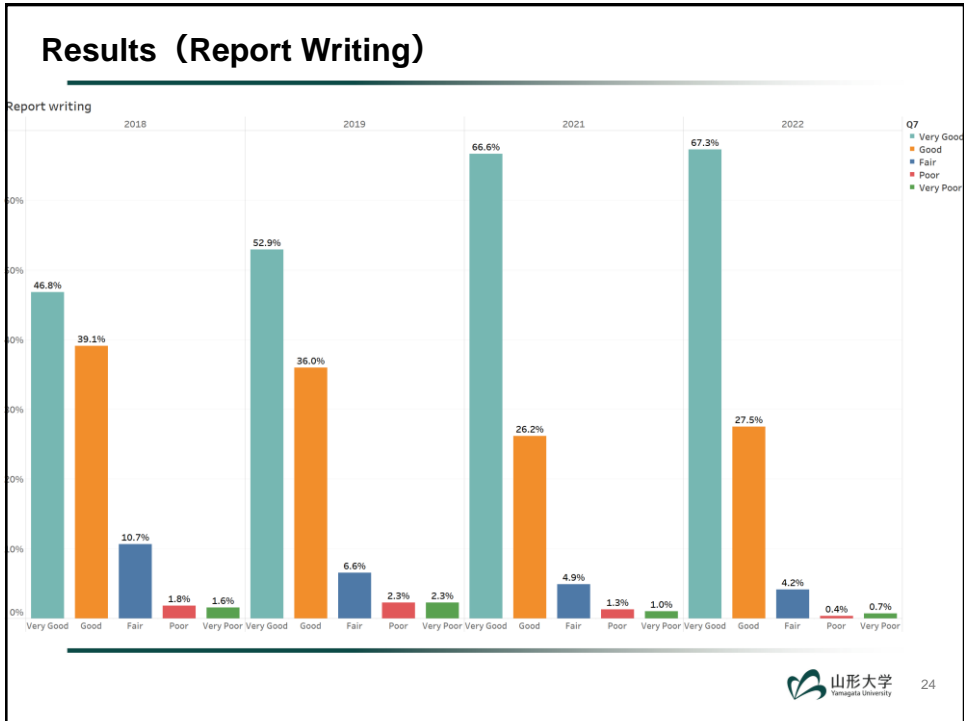
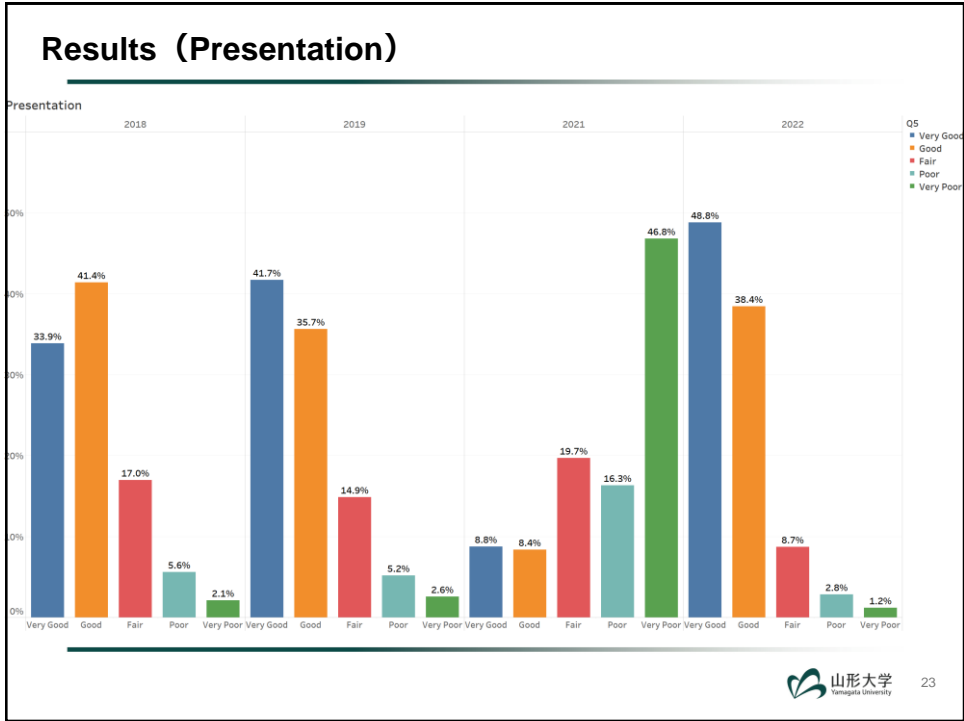
4. Presentation

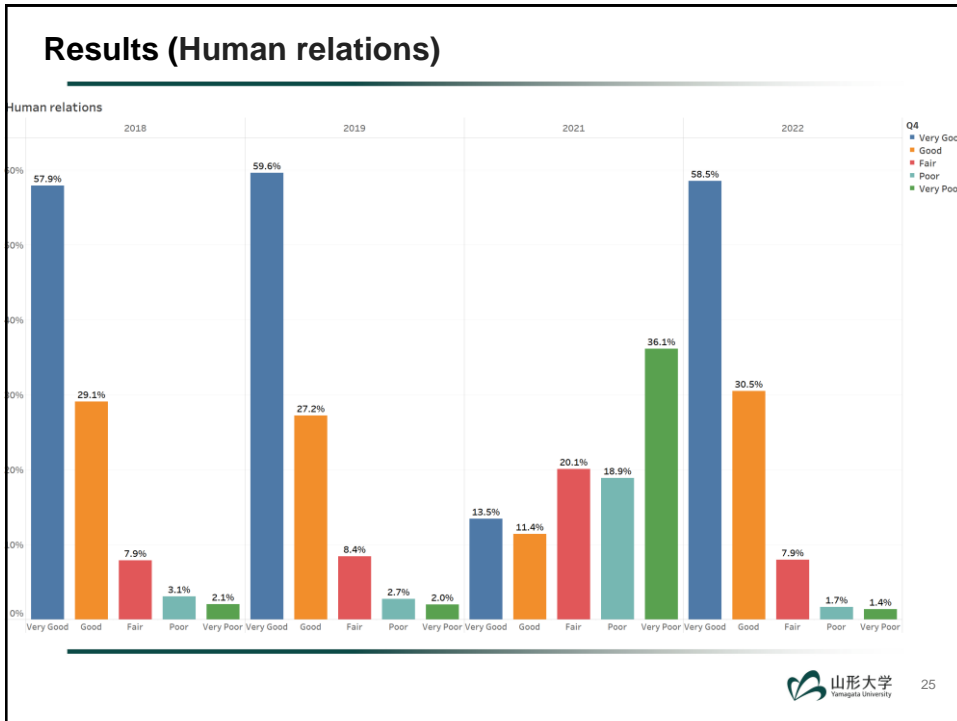
Did this class help you to get used to giving oral presentations in front of people?

Human relations

Did this class deepen your relationships and cooperation with your classmates?







Summary (Student Survey) ①

1. Improvement was observed in all values.
2. Collaborative Learning and Presentations, which had lower points in On Demand, were the same or higher than Face-to-Face(2019).

We believe that this is a result of the fact that a small number of faculty members were able to develop a unified teaching style.

Year	Basics of Research	Collaborative Learning	Presentation	Report Writing
2018	89.0	89.4	75.3	85.9
2019	86.8	86.7	77.3	88.9
2021	93.6	13.3	17.1	92.8
2022	96.5	89.7	87.2	94.8

Ratio of Very Good + Good

Summary (Student Survey) ②

In terms of relationships, students were happy to meet face-to-face with members of different major.

Student Comments

- I made many friends. Thank you very much.
- The group work in this class gave me a good opportunity to make friends within the university and learn how to write reports.
- I was a little nervous at first, but I made friends in this class and had a lot of fun. It was a very meaningful class, as I was able to learn things that I will need for my future university life.
- It was great to learn to think from many different perspectives. I was also able to make many friends.

4. Assessment Plan 2 & Assessment Results (Comprehension Test)



Development of Direct Assessment

- Student survey (Since 2018)
→ indirect assessment
- In addition, direct evaluation of the four core learning skills was conducted (Since 2020)
- Pre-post testing was also conducted to measure improvements in understanding

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- The test is not designed for a full online class.
- In 2022, we kept the questions unchanged but simplified them to better fit the Hybrid format.

Trends in 2021

- On-demand FYE did not show significant downward trends.
- Comprehension test scores of Basics of research and Report writing got higher. On the other hand, it was quite difficult to realize oral presentations, as well as any form of groupwork on the fully on-demand course.

Issue

- In 2021, the completion rate of the Comprehension Test decreased with the implementation of full on-demand classes.
- This year, we aimed for more than 90% survey completion rate for both Pre and Post tests.

Methods

1. 1,668 students enrolled in the course.
2. Pre-post tests have the same questions concerning aspects of the course.
3. 20 questions in total, 5 questions for each of the four core learning skills.
4. Questions about class content. "Comprehension Test" to measure the level of knowledge retention.
5. Number of valid responses
2020 Pre =1590/1660 (95.8%) Post=1629/1660 (98.1%)
2021 Pre =1379/1676 (82.3%) Post=1022/1676 (61.1%)
2022 Pre =1545/1668 (92.6%) Post=1422/1668 (85.2%)

Methods (Cont'd)

6. The Hybrid format questions were not changed from 2020 in order to compare test results over time.
7. The questions were not changed for the full On-demand in 2021.
→ No change in class content, as it is concerned with the mastery of the four core learning skills.
8. By not changing the questions, comparisons can be made regarding the impact of the change in class format.

2022 Comprehension Test Results Pre/Post

	2022 pre avg Hybrid	2022 post avg Hybrid	
Basic of Research	89.3	97.7	+8.4
Collaborative Learning	92.3	95.3	+3.0
Presentation	82.4	86.3	+3.9
Report writing	91.3	94.1	+2.7

- Since the purpose of introductory courses is to establish academic skills, higher numbers for pre are not a problem.
- Looking at the 2022 pre/post, an upward trend can be seen in all categories.
- It is noticeable that presentation is below 90%, but this cause has been realized and can be improved upon.

- The sample is 1545/1422 (pre/post) people, and there are 5 questions for each item
- Comprehension Test result shows correct answer rate.



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Comprehension Test Results 2020~2022 Post Average

	2020 avg On-demand	2021 avg On-demand	2022 avg Hybrid
Basic of Research	91.8	96.1	97.7
Collaborative Learning	94.6	95.0	95.3
Presentation	89.6	91.3	86.3
Report writing	82.1	94.0	94.1

- When comparing 2020 and 2022, In particular, the basics of research and report writing that we focused on in the post test have shown good results.
- In the direct assessment, most of the students were able to understand the "four core learning skills" in the Hybrid FYE.



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Comprehension Test Results 2020~2022 Post Average (Cont'd)

- In 2022, however, presentation understanding decreased by 5%.
 - We have used the same questions since it started. However, the Japanese description of a question about presentation (Appendix Q3-4) was too vague for students to understand.
 - This problem was identified through the observation of both direct and indirect assessments.

→ We plan to change it for 2023

Summary (Comprehension Test)

- Comprehension test results were good overall; we can see that the hybrid FYE course was a success.

5 . Summary and Future Prospect



Summary and Future Prospect

Summary

- YU FYE Program modification in 2020 to 2022
- Comparison between Student Survey (indirect) and Comprehensive Test (direct)

Future Prospect

- Preparation for 2023 FYE course
- Improve direct and indirect assessments

References

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Takahiro Abe, Douglas Gloag, Takao Hashizume, Satoko Imaizumi, Katsumi Senyo, Tetsuya Shiroishi (2021) “Developing a New Online FYE Program in the Post-COVID-19 World” Oral Presentation at 2021 Assessment Institute, IUPUI.

Appendix (Comprehension Test Questions)



Q1. Basics of Research

You are required to find some information for your research project. Which are the most appropriate statements? Select all that apply.

1. Search and gather information from government institution sites.
2. Search and gather information from peer-reviewed academic papers.
3. Search and gather information from Google or Wikipedia.
4. Search and gather latest information from Twitter or SNS.
5. Search and gather information from published materials.

Answers: T, T, F, F, T

Q2. Collaborative Learning

When formulating an opinion in group discussion which of the following statements are the most appropriate? Select all that apply.

1. Think deeply having looked at different opinions and opposing points of view.
2. Decide on your group's opinion having considered reliable data.
3. Decide on your group's opinion on the basis of a group member's passionate argument.
4. Decide on your group's opinion by majority vote.
5. Decide on your group's opinion by one member's research effort.

Answers: T, T, F, F, F

Q3. Presentation

When preparing for the group presentation, which of the following statements are the most appropriate? Select all that apply.

1. Make sure your talk is in logical order and easy to understand.
2. Make sure to include all researched data and every point of view.
3. Practice and revise to improve your talk objectively after the rehearsal.
4. Devise materials that are not directly related to the content of the presentation, such as diagrams, photographs, and font size.
5. Assume your audience have already acquired specialized knowledge.

Answers: T, F, T, F, F

Q4. Report Writing

When writing an assignment, which of the following statements are the most appropriate to communicate your thinking? Select all that apply.

1. Understand and obey the basic assignment format and requirements.
2. Only begin writing after consulting your previous outline and initial notes.
3. Paragraphs should be written in long sentences in order to write all the necessary information.
4. Check your assignment for any mistakes before submitting paper.
5. Write your assignment using different writing styles.

Answers: T, T, F, T, F