

ACKNOWLEDGED BY



UTM VIRTUAL SPRING SCHOOL 2022



by Prof. Dr. Lee Chew Tin
Universiti Teknologi Malaysia

28 Feb –11 March 2022

INTRODUCTION

This virtual program was organized by the School of Chemical and Energy Engineering in collaboration with UTM-Low Carbon Asia Research Centre from 28th February – 11th March 2022. It was aimed to share low-carbon actions and knowledge such as enabling green policies and sustainable green technologies for the development in Asia.

Implementing sustainable practices to ensure green growth in Asia is critical as Asia has many fast-growing cities and is regarded as the world's factory. Despite the enormous knowledge generated, there are still gaps for real actions to be implemented in developing countries at a desirable pace. There is an urgent need of integrating diverse stakeholders, including academicians, policymakers, local authorities, and business entities, to implement the low-carbon real actions on the ground.

Nine students from Hitotsubashi University participated in this virtual spring course, as well as two students from Shanghai Dianji University and 14 local buddies from UTM, as shown in Table 1.

Table 1: Participant Name List

No.	Name	Gender	University
1	Yusuke Ishii	Male	Hitotsubashi University
2	Yuto Yamada	Male	
3	Tomonari Hiyama	Male	
4	Maiko Wada	Female	
5	Yuriko Takahashi	Female	
6	Kokoro Kojio	Female	
7	Nozomi Ando	Female	
8	Ayaka Kiyohiro	Female	

9	Shiori Yamazaki	Female	
10	Zhiling Zhang	Male	Shanghai Dianji University
11	Tengyuan Shi	Male	
12	Ryan Toh Jun Shen	Male	Universiti Teknologi Malaysia
13	Muhammad Billy Isbrediputra	Male	
14	Ng Jun Kiat	Male	
15	Goh Wei Bing	Male	
16	Gan Ling Xian	Female	
17	Sim Jia Yi	Female	
18	Low Ker Rou	Female	
19	Jessica Lim Joe Yee	Female	
20	Lee Jia Min	Female	
21	See Ying Yu	Female	
22	Wang Yan Yee	Female	
23	Jasmine Michael	Female	
24	Ng Hui Qin	Female	
25	Soy Wei Wen	Female	
26	Prof. Dr Lee Chew Tin	Female	

Table 2: Schedule of UTM Virtual Summer School August 2021

28/2/2022	9:00am: Course Briefing 10:30am: Break 11:00pm: Ice Breaking and Group Bonding 12:30pm: End
1/3/2022	Lecture 1: Glossary for Sustainable Development Goals (SDGs), Dr. Ong Pei Ying 9:00am: Lecture 9:40am: Break 10am: Breakout Session - Mapping of SDGs on case study 10:15am: Presentation 10:30am: Break Multicultural Interaction 11:00am: Culture sharing session from each university representative 12:30pm: End
2/3/2022	Lecture 2: Glossary for Low Carbon Economy, Prof. Dr. Lee Chew Tin

	<p>9:00am: Kahoot Quiz</p> <p>9:10am: Lecture</p> <p>9:50am: Break</p> <p>10:00am: Kahoot Quiz round 2</p> <p>10:30am: Break</p> <p>Virtual Tour 1: UTM Green Campus</p> <p>11:00am: Brainstorming</p> <p>11:05am: Introduction to UTM video.</p> <p>11:15am: Slide sharing session</p> <p>11:20am: Video sharing from each university on green efforts</p> <p>11:40am: Kahoot Quiz</p> <p>11:50am: Break</p> <p>12:00am: Video on Green Effort in UTM residential areas. 12:30pm:</p> <p>End</p>
3/3/2022	<p>Lecture 3: Competent Writing Skills, Prof. Dr. Lee Chew Tin</p> <p>9:00am: Lecture</p> <p>9:30am: Break</p> <p>9:40am: Breakout Session: Revising article</p> <p>10:30am: Break</p> <p>Lecture 4: Competent Presentation Skills, Prof. Dr. Lee Chew Tin</p> <p>11:00am: Lecture</p> <p>11:30am: Break</p> <p>11:40am: Breakout Session: Revising presentation slide</p> <p>12:30am: End</p>
4/3/2022	<p>Virtual Tour 2: Community Composting in Johor</p> <p>9:00am: Brainstorming</p> <p>9:15am: Video of Mini RTC Layang-Layang.</p> <p>9:30am: Slide sharing session</p> <p>10:00am: Quiz session</p> <p>10:10am: Singing Session</p> <p>10:30am: Break</p> <p>Virtual Tour 3: Aquaponics Project</p> <p>11:00am: Brainstorming</p> <p>11:10am: Video to Aquaponic in EcoPark</p>

	11:45am: Question and Answer session 11:55am: Photo session 12:00am: Breakout Session: Design your aquaponics system 12:30am: End
7/3/2022	Lecture 5: Low Carbon Iskandar Malaysia, Prof. Dr. Ho Chin Siong 9:00am: Lecture 9:50am: QnA Session 10:00am: Break 10:10am: Summary of Low Carbon Iskandar Malaysia 10:30am: Break 11:00am: Group Discussion 12:30pm: End
8/3/2022	Lecture 5: Sustainable Consumption and Production, Prof. Dr. Lee Chew Tin 9:00am: Lecture 9:40am: Kahoot Session 9:50am: Break 10:00am: Breakout Session: Discussion on SCP 10:30am: Break 11:00am: Group Discussion 12:30pm: End
9/3/2022	Lecture 7: Towards Green University, Dr. Ong Pei Ying 9:00am: Lecture 9:40am: Kahoot Session 9:50am: Break 10:00am: Breakout Session: Discussion on Green Campus 10:30am: Break Virtual Tour 4: Malay Cultural 11:00am: Sharing Session from Buddies 12:00am: Eating Session 12:30am: End
10/3/2022	Lecture 8: Grooming Future Green Champion, Wang Yan Yee and Lee Jia Min

	<p>9:00am: Lecture</p> <p>9:30am: Sharing Session: What can we do as a student to achieve SDGs?</p> <p>9:50am: Break</p> <p>10am: Breakout Session: What can we do as a student to achieve SDGs?</p> <p>10:30am: Break</p> <p>11:00am: Group Discussion</p> <p>12:30pm: End</p>
11/3/2022	<p>9:00am: Final Group Presentation</p> <p>12:00pm: Closing Ceremony</p> <p>12:30pm: Farewell</p>

ACTIVITIES:

a) Lectures

i. Prof. Dr. Ho Chin Siong

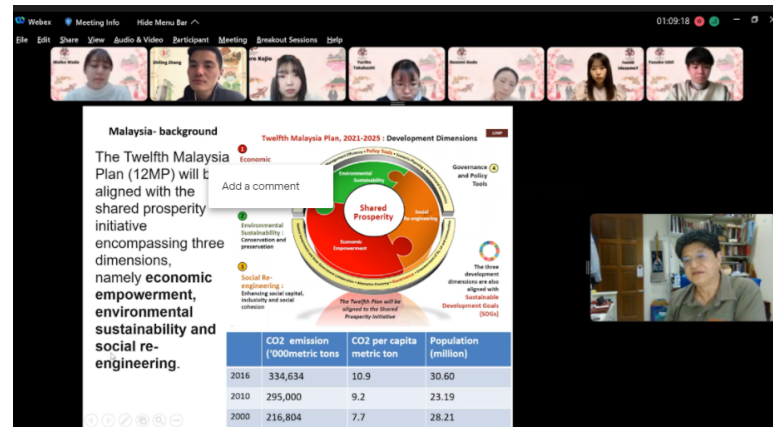


Figure 1: Prof. Dr. Ho Chin Siong explaining LCS Action.

Prof. Dr. Ho Chin Siong, Director of UTM Low Carbon Asia Research Centre, shared his knowledge and expertise in the implementation of sustainable low-carbon urban design to achieve sustainable, low-carbon city planning and space syntax analysis of urban settlements in Iskandar Malaysia

ii. Prof. Dr. Lee Chew Tin



Figure 2: Lecture on Glossary on Low Carbon Economy.

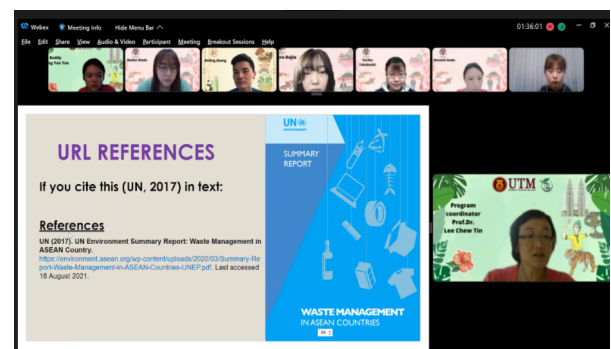


Figure 3: Lecture on Competent Writing Skills.

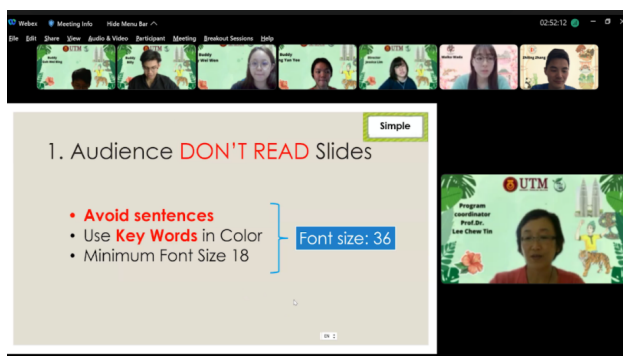


Figure 4: Lecture on Competent Presentation Skills.

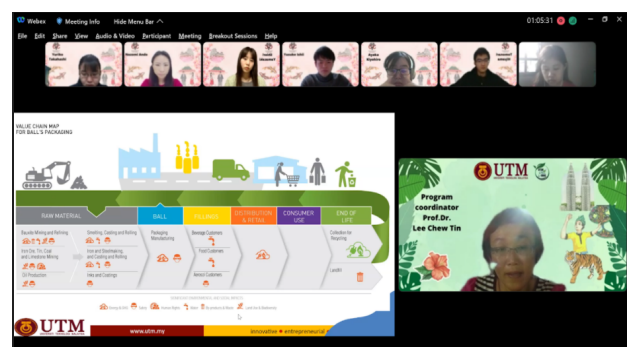


Figure 5: Lecture on SCP

Prof. Dr. Lee Chew Tin conducted four sharing sessions. In the first week, she introduced some terminologies on Low Carbon Economy. Students gained a basic understanding of economic, environmental and low carbon economy policies. Prof. Dr. Lee Chew Tin shared how to craft good presentation slides and improve writing skills to prepare the delegates for their final presentation, which was to be held during the second week.

During the second week, Prof. Dr. Lee Chew Tin conducted a sharing session on Sustainable Consumption and Production. In her session, she explained how to treat the waste efficiently from all sectors and provided a briefing on the complex waste management system. She gave some examples to apply for a sustainable consumption and production.

iii. Dr. Ong Pei Ying



Figure 6: Lecture on Glossary of SDGs.

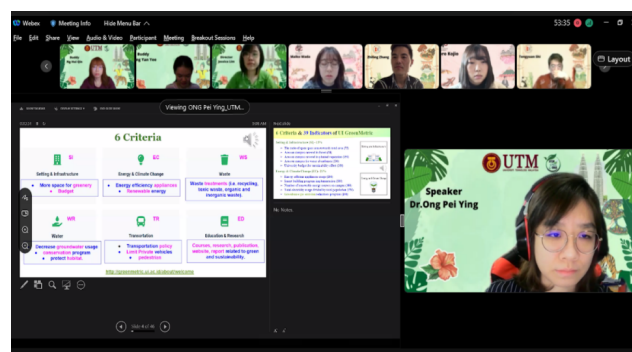


Figure 7: Lecture on Towards Green University.

In the first week, our presenter, Dr Ong Pei Ying introduced the basic concept and some terminologies on Sustainable Developments Goals. Dr Ong also conducted the last sharing session with a lecture on Towards Green University. She introduced the UI Green Metric by explaining the criteria and indicators to rate universities and showed some case studies to the delegates.

iv. Wang Yan Yee and Lee Jia Min

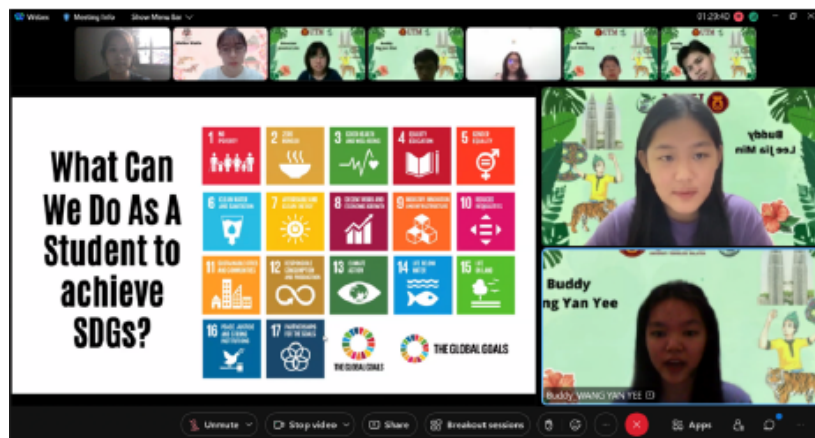


Figure 8: Sharing Session on Grooming Future Green Champion.

Two UTM buddies from UTM Green DNA Society shared Grooming Future Green Champions on the ninth day of spring school.

In this session, a brief recap of all nice previous lectures was done. Extra tutorial sessions were conducted by UTM buddies with all participants to strengthen the learning experience and group assignment preparation. Importantly, UTM buddies shared the best practices and knowledge through UTM Green DNA society's activities.

b) Virtual Tours

i. Tour 1: Green Campus

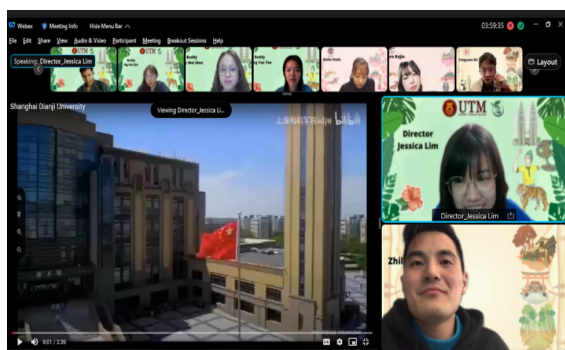


Figure 9: Campus tour in Shanghai Dianji University

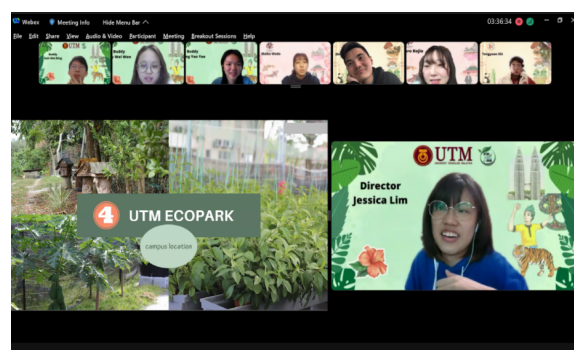


Figure 10: Green initiatives in UTM.

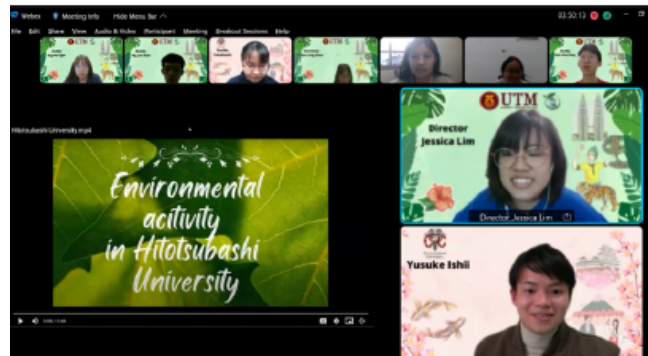


Figure 11: Environmental activity in Hitotsubashi University.

There were two videos shared during UTM Green Campus Tours. The first video showed UTM Johor green campus. The second video showcased the green efforts conducted by UTM Kolej Tun Hussein Onn (KTHO) with a short interview clip with the principal of KTHO, Dr. Norahim Bin Ibrahim. The representative from each university also presented a video of their green campus and initiatives being conducted in their respective universities.

ii. Tour 2: Community Composting in Johor

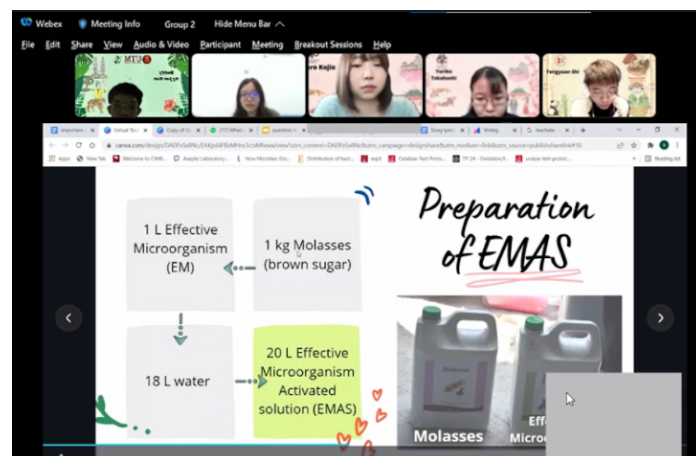


Figure 12: Composting in RTC Layang-Layang.

This virtual tour brought the delegates an experience in making fertilizer through composting in RTC Layang-Layang. Detailed steps for composting were shown. Participants were required to change the lyrics of a compost song based on what they had learned.

iii. Tour 3: Aquaponics Project

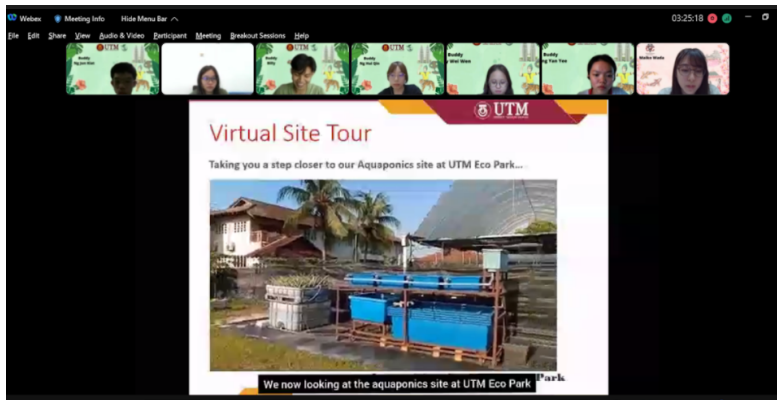


Figure 13: Aquaponics System in UTM EcoPark.

Dr. Mohd Johari Bin Kamaruddin and Dr. Muhd Nazrul Hisham Bin Zainal Alam were invited as special guests in this virtual tour to give detailed explanations on aquaponics systems. Recorded videos showing detailed aquaponics systems in UTM EcoPark were presented. Each team was required to design their aquaponics system based on the knowledge learned. Group V designed the best aquaponics system.

iv. Tour 4: Malay Cultural Village



Figure 14: Wei Bing (UTM Buddy) showed the delegates Kuih Seri Muka.

The delegates experienced the Malay culture and heritage through presentations from UTM Buddies. The buddies introduced traditional Malay costumes, batik, wayang kulit, traditional games and dances. All delegates and buddies had their lunch together virtually, and the delegates were taught to eat using their hands. Some Malaysian delicacies were shown to them too.

c) Interactive Session

i. Ice-breaking

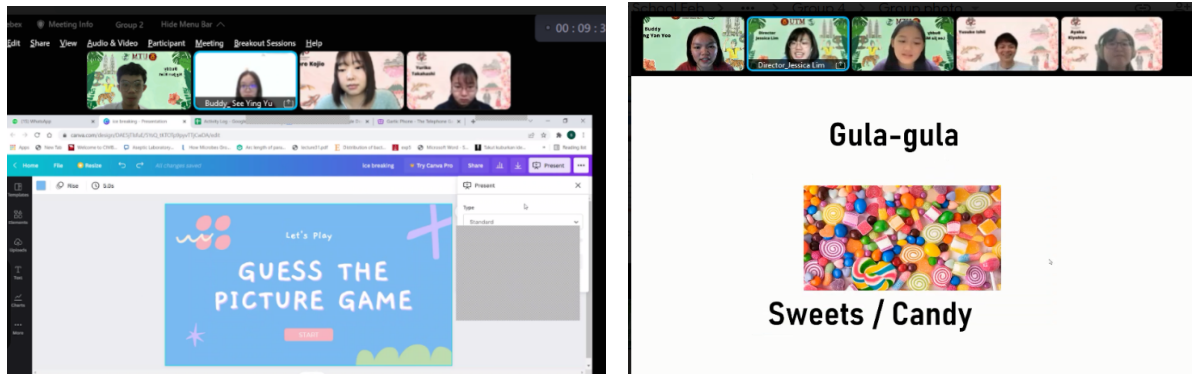


Figure 15 & 16: Participants and buddies played 'guess the picture and words' during ice breaking.

The virtual summer school began with an ice-breaking session to help UTM buddies and delegates to know each other better. Various games and activities were conducted as bonding activities within each group.

ii. Multicultural Interaction

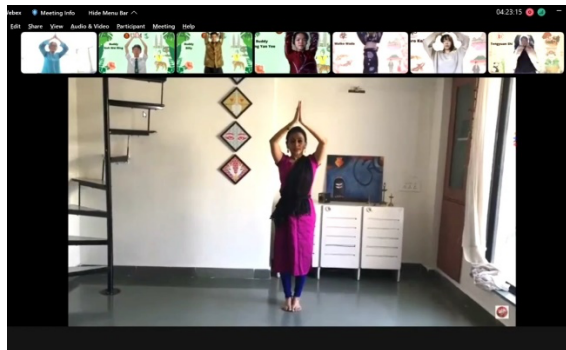


Figure 17: Participants and buddies practiced Indian Dance.

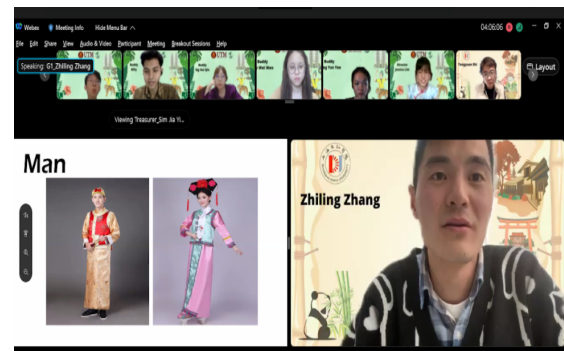


Figure 18: Delegates from Shanghai Dianji University introduced Chinese culture.

A representative from each university was asked to prepare a presentation before this session to briefly introduce their culture. All delegates and UTM buddies shared their unique cultures from Japan, China, Malaysia and Indonesia. This session became more interesting when most delegates and buddies wore their traditional costumes and danced together.

iii. Quizzes

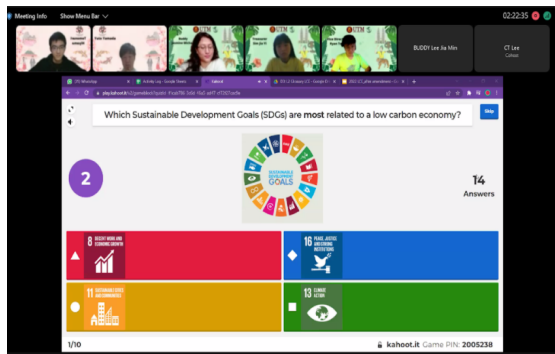


Figure 19: Kahoot quiz on Glossary Low Carbon Economy.

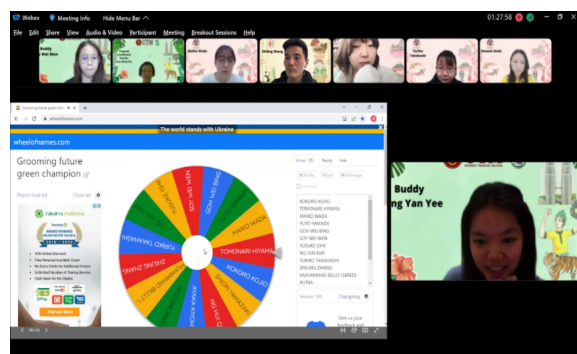


Figure 20: Name Picker Roulette to pick delegates and buddies to share their opinion.

Most of the lectures had a short evaluation session for delegates to reflect on the lectures taught. Various forms of quizzes were done through platforms such as Kahoot and Name Picker Roulette. Some of the sessions executed 2 rounds of Kahoot quizzes which were before and after the lectures. This method served as an indicator to evaluate the participants' understanding of the lecture and the quality of the lecture. The following illustration shows that the percentage for most of the participants who answered the quiz correctly achieved 70% and above in round 2 while in round 1 most of them achieved 70% and below.

Nickname	Rank	Correct answers	Unanswered	Final score
Goh	1	70%	—	5.983
Yusuke	2	70%	—	4.934
welven	3	70%	—	4.386
Ayaka	4	60%	—	4.240
Kimi	5	50%	—	4.181
Huiqin	6	50%	1	3.877
yuto	7	50%	1	3.611
Mai	8	50%	—	3.369
Yuriko	9	40%	1	3.321
s	10	40%	—	2.838
Tomomari	11	40%	—	2.647
Kakoro	12	40%	1	2.579
Nozomi	13	30%	1	2.327
Jk	14	30%	1	2.160
Zhilling	15	30%	1	2.158
Tongyuan Shi	16	20%	2	1.794

Figure 21 : Kahoot Quiz on Glossary of LCE before lecture

Nickname	Rank	Correct answers	Unanswered	Final score
Yuriko	1	100%	—	8 785
shiori	2	90%	—	8 236
yuto	3	90%	—	8 135
Coh	4	80%	—	7 687
Ayaka	5	80%	1	7 377
Billy-J	6	80%	—	7 292
Maiko	7	80%	—	7 194
Yusuke	8	80%	—	6 954
Tomonari	9	70%	—	6 296
Kokoro	10	70%	—	6 192
Zhiling	11	70%	—	6 121
JK	12	80%	1	5 889
Nozomi	13	70%	—	5 542
Tengyuan	14	60%	2	4 004
welwen	15	10%	9	871

Figure 22 : Kahoot Quiz on Glossary of LCE after lecture

iv. Breakout Sessions

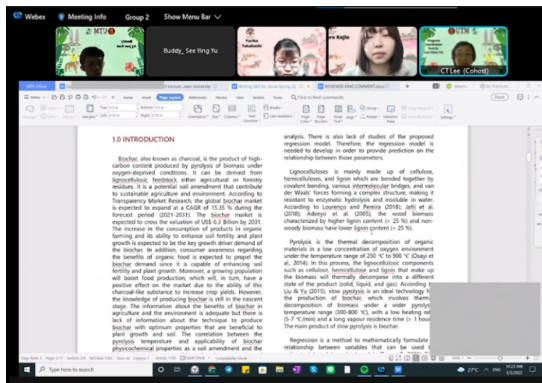


Figure 23: A report was given for revision.

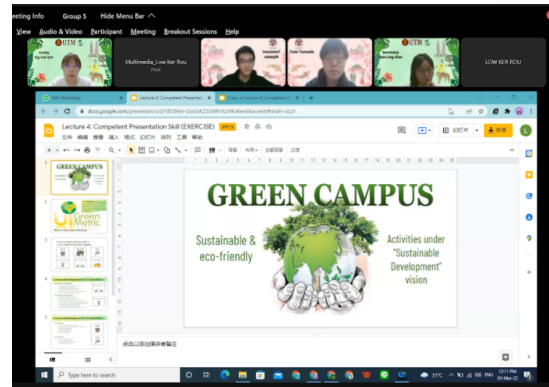


Figure 24: Presentation slides were given for revision.

After each lecture, a 30 – 40 minutes breakout session was given to each group (5 students/group) to discuss the topic. Short assignments and activities were conducted, as led by UTM buddies, to enhance the learning experience.

v. Assignment Preparation

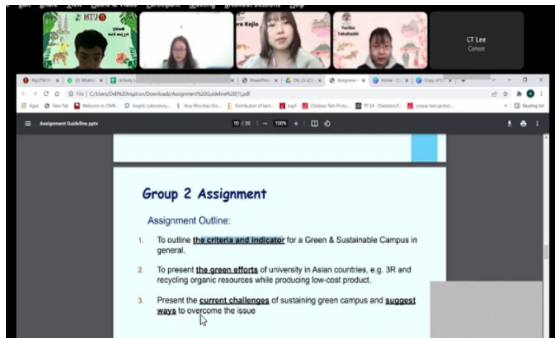


Figure 25: Group 2 discussed on their assignment.

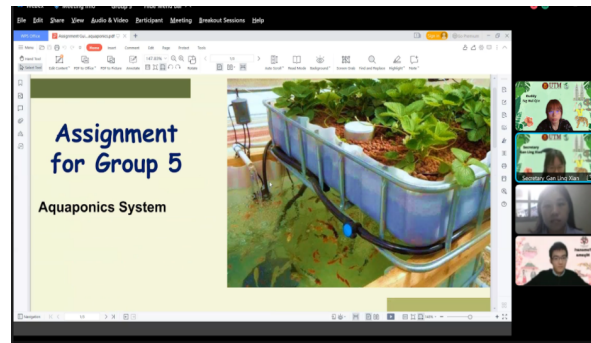


Figure 26: Group 5 discussed on aquaponics system.

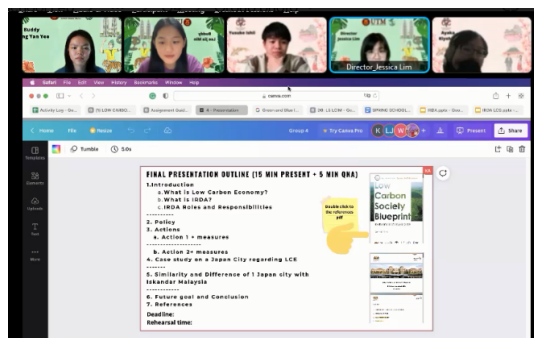


Figure 27: Group 4 discussed on their assignment outline.

The assignment preparations were held throughout the second week of the program. All the delegates, as supported by UTM Buddies, worked hard to complete the team assignments.

d) Team Assignment Presentation

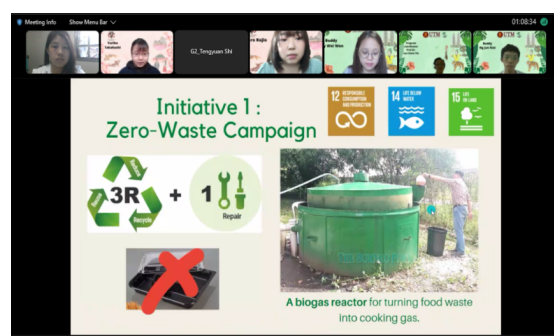
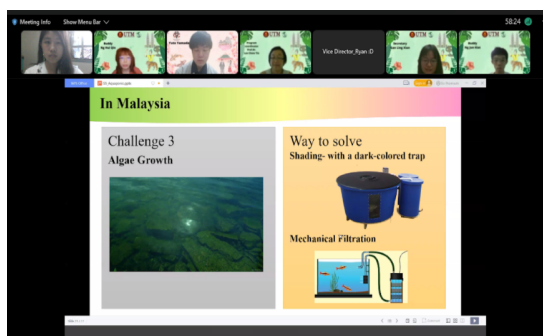




Figure 28, 29 & 30: Group 1, 2 & 4 presented their final presentation.

Table 5: List of groups and its topic.

Group	Topic
1	Community Composting @ Mini RTC Layang-layang, Johor
2	Sustainable Green Campus: University as Case Study
3	Sustainable Consumption and Production (SCP)
4	Iskandar Malaysia Low Carbon Economy: Case Study at Iskandar Regional Development Agency (IRDA)
5	Aquaponics Project

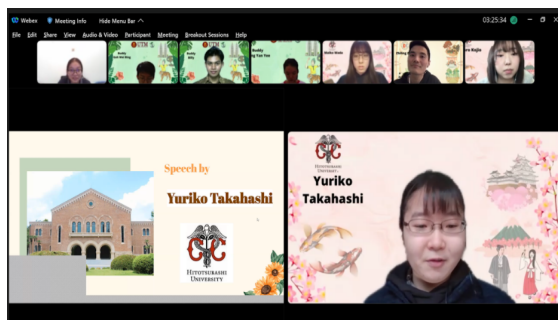
All five teams presented their topics with their solutions, as evaluated by two panels, Prof. Dr. Lee Chew Tin and Dr Ong Pei Ying. Presentations were evaluated based on the content, problem-solving skills, slides' quality, teamwork, and language. The best three teams were awarded.

e) Closing Ceremony

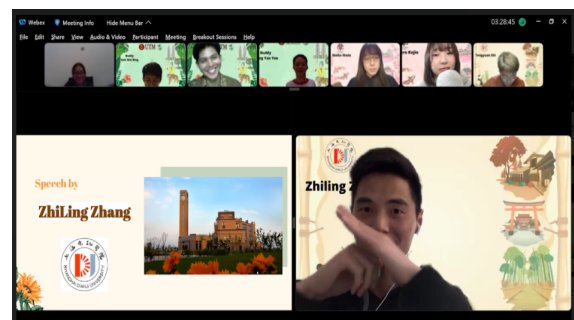
The closing ceremony marked the official ending of this two-week program. The ceremony was graced by Dr. Lee Chew Tin; the Director of the UTM Summer School 2021 and Dr. Ong Pei Ying.

The ceremony witnessed a short montage video capturing the memory of the entire summer school, as could be seen in <https://fb.watch/bPXxYjIriH/> . Best team presentation certificates were awarded to the top three groups, namely group 4, 5 and 2.

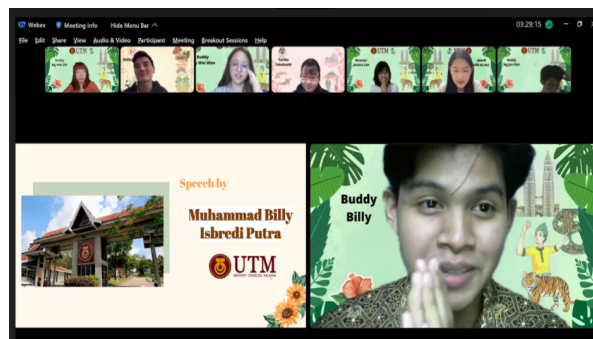
A representative from each university gave their reflective speech as shown in Figure 28.



(a)



(b)



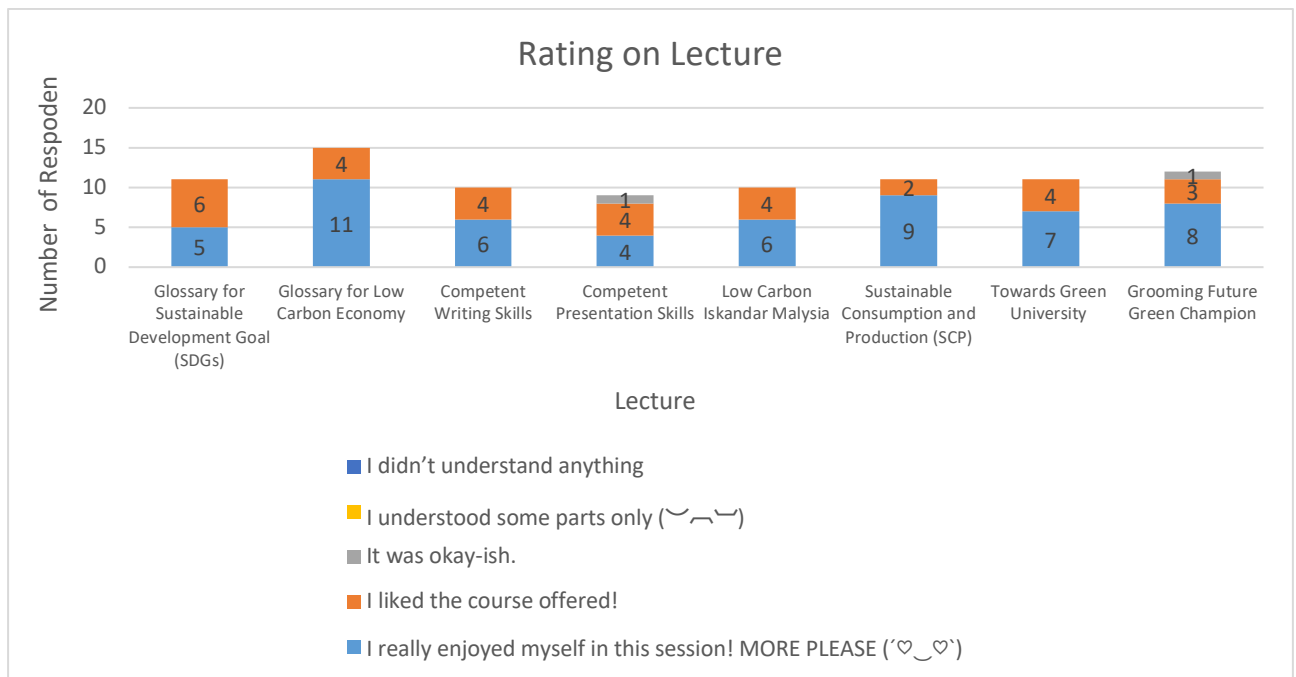
(c)

Figure 31: Closing speech by the representative from a) Hitotsubashi University, b) Shanghai Dianji University and c) Universiti Teknologi Malaysia.

f) Survey Analysis

A survey on their feedback was held from day two to day nine at the end of each lecture, activity or discussion sessions using Google Forms. All participants and UTM buddies were invited for this survey with a range of 9-20 responses per day.

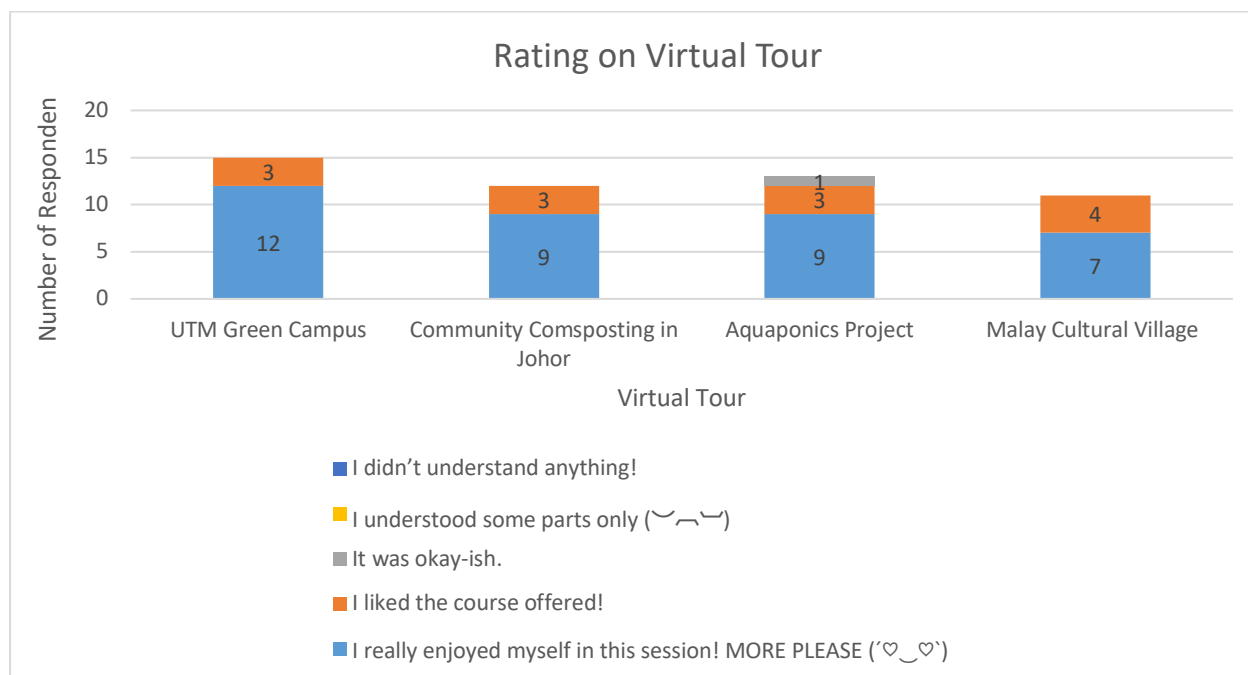
i. Lecture



Graph 1: Rating on all eight lectures.

From Graph 1, the number of respondents on day 3, on the Glossary for Low Carbon Economic, showed the highest score. From day 3 onwards, the number of respondents were shown to be decreasing. This may be due to a loss of interest by the delegates to fill up the form every day. However, the majority of the responses to every lecture were positive, in which the delegates enjoyed the sessions or liked the courses offered. The lecture on Glossary for Sustainable Development Goals recorded the highest responses on “I liked the course offered” compared to other topics. This shows this topic represented a good start for them to obtain fundamental knowledge and technical terms of the program. The lecture on Glossary for Low Carbon Economy recorded the highest responses on “I really enjoyed myself in this session” compare to the other lectures topic. This proved that they really enjoy themselves during the session throughout the program. Overall, no respondent failed to understand everything in every lecture.

ii. Virtual Tour



Graph 2: Rating on all four virtual tours.

For the virtual tour, the UTM Green Campus achieved the highest average rating. It was likely that this virtual tour was conducted with many interactive sessions, such as quizzes, videos and colourful pictures for the participants to know more about University Teknologi Malaysia. Both universities, namely Hitotsubashi University and Shanghai Dianji University also shared videos about their campus environment via their representatives. The Malay Cultural Village received the lowest rating as the respondents needed more breakout sessions to understand the tour further. The participants might need an opportunity to explore and experience the tour as it's conducted virtually. The content may be further simplified in future summer school.

iii. Feedback and post-mortem

A daily post-mortem was conducted among the organizing committees with Prof Lee Chew Tin to evaluate the strengths and weaknesses of the program.

Date	Course	Improvement from respondents	Improvement proposed during Post-mortem
28/2/2022	- Course Briefing - Ice Breaking and Group Bonding	- Sound quality. - The difference between the proper noun and others is a	- Buddies should talk slowly and clearly. - Buddies should explain

		bit difficult.	the timetable schedule with participants. - Inform students about the importance of attendance.
1/3/2022	- Lecture 1: Glossary for Sustainable Development Goals (SDGs), Prof. Dr. Lee Chew Tin - Multicultural Interaction	- The speeches seemed a little fast. - Volume of the music is too loud.	- Buddies can explain again to participants about the lecture in group sessions. - Participants are encouraged to have earphone for better sound quality.
2/3/2022	- Lecture 2: Glossary for Low Carbon Economy, Prof. Dr. Lee Chew Tin - Virtual Tour 1: UTM Green Campus	- Require more discussion time.	- Shorten the break time from 10 minutes to 5 minutes.
3/3/2022	- Lecture 3: Competent Writing Skills, Prof. Dr. Lee Chew Tin - Lecture 4: Competent Presentation Skills, Prof. Dr. Lee Chew Tin	- It would be nice to receive handouts in advance.	- Buddies should send lecture slides and videos regarding the lecture one day before class
4/3/2022	- Virtual Tour 2: Community Composting in Johor - Virtual Tour 3: Aquaponics Project	- Difficulty to hear Dr. Mohd Johari Kamaruddin's speech.	- Buddies can do extra meetings if the delegates cannot understand the lectures being presented.
7/3/2022	- Lecture 5: Low Carbon Iskandar Malaysia, Prof. Dr.	- The professor spoke a little too fast.	

	Ho Chin Siong -Group Discussion		
8/3/2022	- Lecture 5: Sustainable Consumption and Production, Prof. Dr. Lee Chew Tin - Group Discussion	- The speed of kahoot's questions is fast.	- Increase the duration of the quiz or ensure the question or answer of the quiz is not too long
9/3/2022	- Lecture 7: Towards Green University, Prof. Dr. Lee Chew Tin -Virtual Tour 4: Malay Cultural	- Prefer to hear all of Dr's lectures in person, without the use of recordings.	
10/3/2022	-Lecture 8: Grooming Future Green Champion, Wang Yan Yee and Lee Jia Min - Group Discussion	- Would like to have the lectures slides and also the link for hand in the assignment	- Documentation should be actively updated and arranged systematically
11/3/2022	-Final Group Presentation - Closing Ceremony - Farewell	- Would like to have an exchange group to meet more participants. - Announce the representative selection earlier.	- Since the English level of the participants are high, the syllabus can be altered to have more technical terms or a more comprehensive syllabus.

POST TESTIMONIAL



Figure 32: Testimonial from the representative of Hitotsubashi University, **Yuriko** Takahashi.



Figure 33: Testimonial from the representative of Shanghai Dianji University, Zhiling **Zhang**.



Figure 34: Testimonial from the representative of UTM buddies, Muhammad **Billy** Isbrediputra.

~ End of Report ~