

APAIE 2024



PERTH, AUSTRALIA 4-8 MARCH 2024

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Collaborating for sustainable impact: partnerships across the Asia Pacific

APAIE Perth 4 - 8 March 2024



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Session 1B: Tues 5th March, 9:30 – 10:00

**Adopting Gamified eTournament on Raising Students'
Awareness of SDGs**

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Adopting Gamified eTournament on Raising Students' Awareness of SDGs

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APAIE 2024 Conference and Exhibition on Collaborating for Sustainable Impact:
partnerships across the Asia Pacific
4-8 March 2024

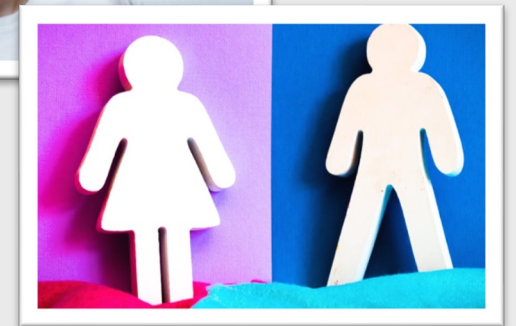
Outline

- ✓ eTournament: Rationale and objectives
- ✓ eTournament: “Two-stage” approach
- ✓ eTournament: Evolution (2019 - 2023)
- ✓ eTournament: Outcomes

eTournament: Rationale

- Since 2016, we have been aware that multidisciplinary, multicultural, technology-supported work-teams have become a norm
- Ongoing global issues need to be addressed with orchestrated efforts of people across disciplines, and cultural and physical boundaries
- Universities can provide students with opportunities in practicing virtual teamwork skills, while raising their awareness of global issues

(Lau *et al.*, 2021; Law *et al.*, 2020)



eTournament: Objectives

1. To **raise students' SDGs awareness** through a gamified approach;
2. To provide students with opportunities in **collaborative learning**, particularly in virtual environment settings;
3. To enhance students' **intercultural competence**, on understanding others' cultures and backgrounds.

Three runs of **international eTournament** for **university** students were organised in 2019, 2020 and 2021 respectively, plus **two** for **high school** students in 2022 & 2023.

Website of eTournament: <http://ccgame.hkbu.edu.hk> (2019-2020)



eTournament: “Two-stage” approach

(adopted in all international eTournament runs since 2019)

Team
formation by
Organiser

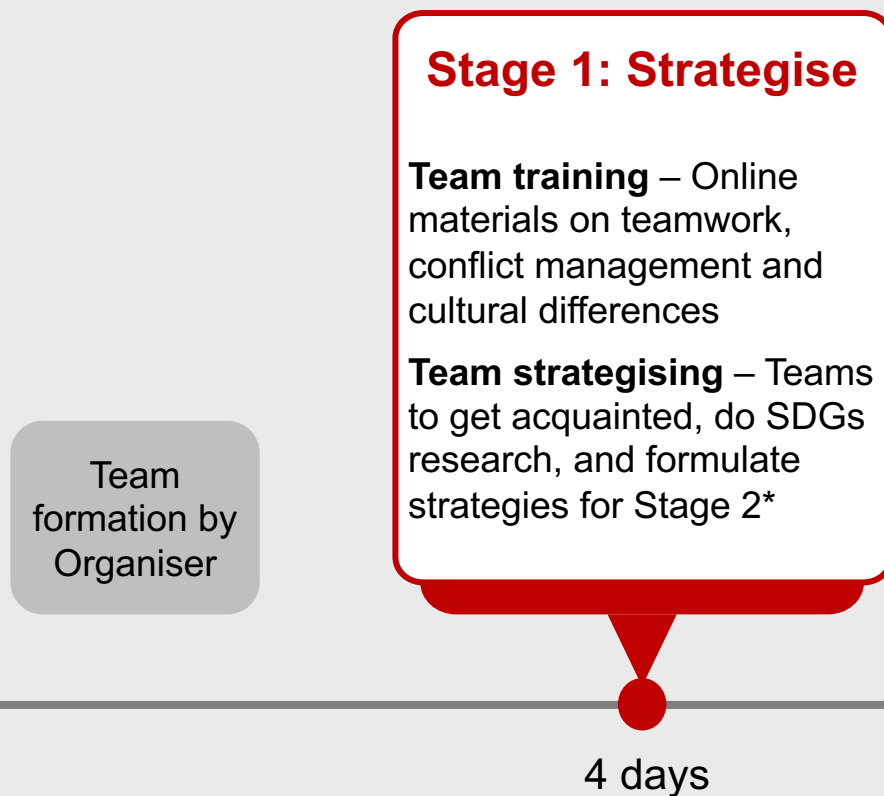
- 4 or 5 students
- no more than 2 from the same region or institution

* On one of the online messaging platforms

** On the online game platform

eTournament: “Two-stage” approach

(adopted in all international eTournament runs since 2019)

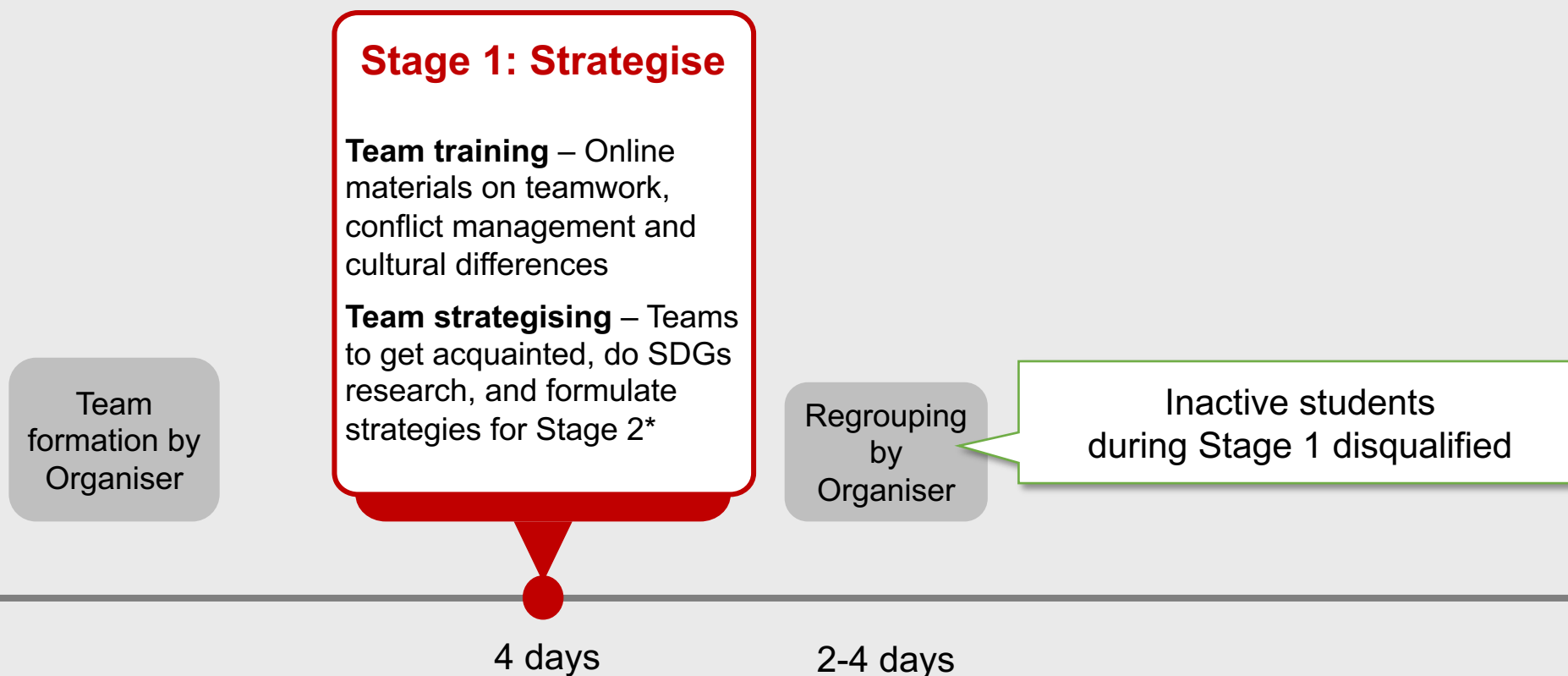


* On one of the online messaging platforms

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eTournament: “Two-stage” approach

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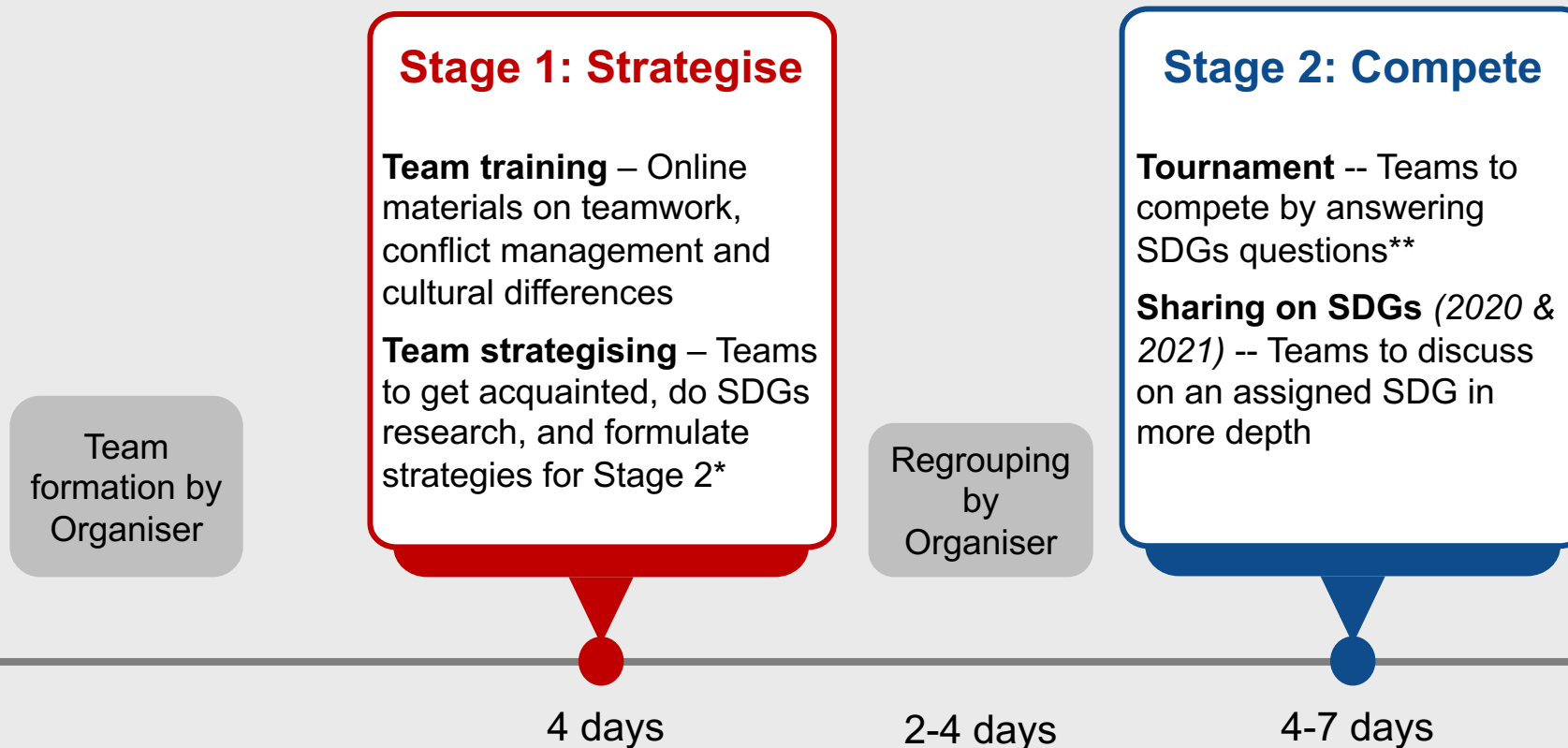


* On one of the online messaging platforms

** On the online game platform

eTournament: “Two-stage” approach

(adopted in all international eTournament runs since 2019)



* On one of the online messaging platforms

** On the online game platform

eTournament: Evolution (2019 - 2021)

2019

2020

2021

Game platform

SDGs coverage

eTournament stages

**Team messaging
platform**

eTournament: Evolution (2019 - 2021)

2019

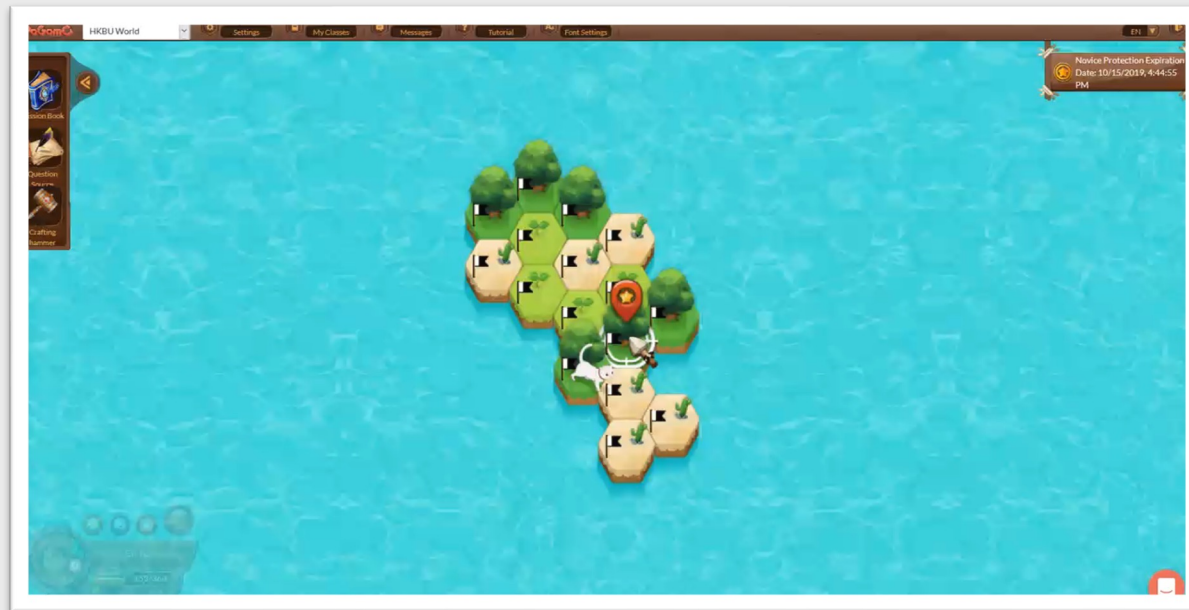
2020

2021

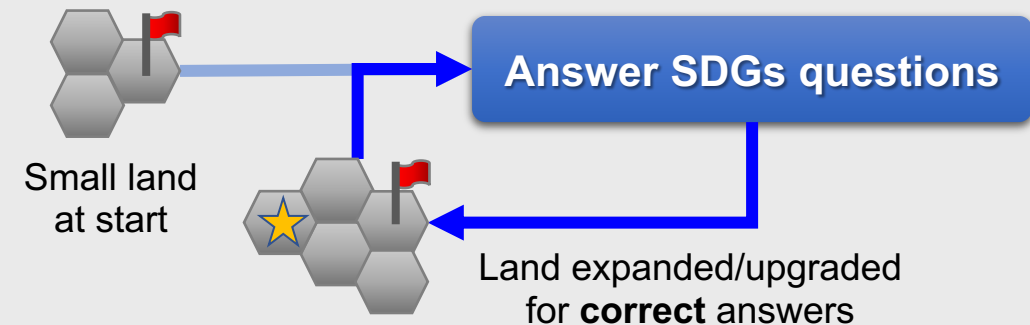
Game platform



Mature platform but lacks team-based gameplay



"I think the game can be better if the players in the same team are allocated to areas that are near to each other" (2020)



eTournament: Evolution (2019 - 2021)

Game platform

2019



2020

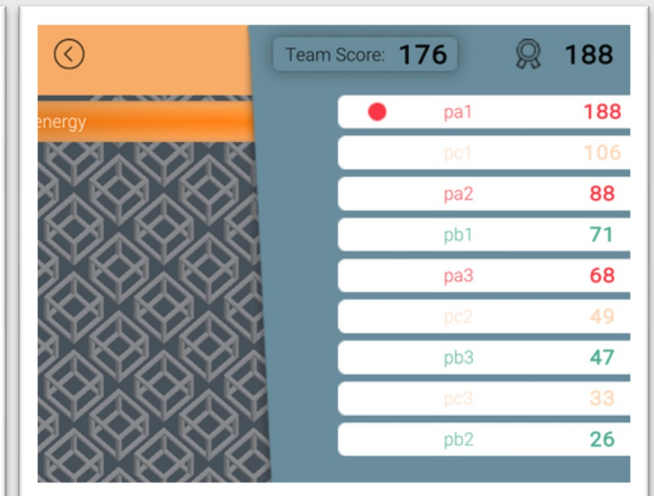
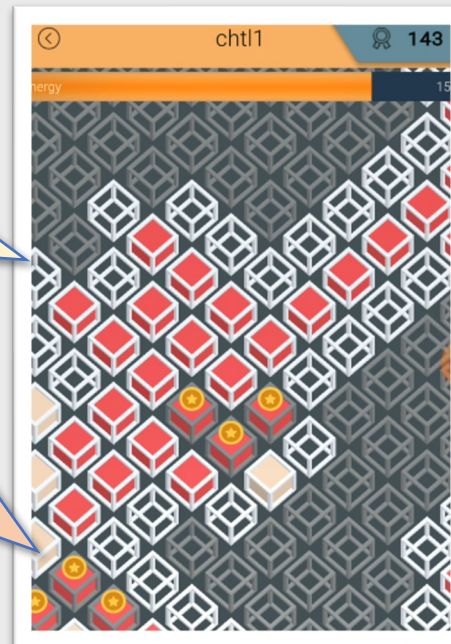
Mature platform but lacks team-based gameplay

2021

Tailor-made app with team-based gameplay

“The app was easier to decipher and work on compared to last year's PaGamO...” (2021)

“The cheaters managed to hack the application... I felt disheartened to continue with the tournament, so do my teammates.” (2021)



Team-based feature
e.g. team leaderboard

eTournament: Evolution (2019 - 2021)


Game platform

SDGs coverage

2019

2020

2021

 Mature platform but team-based gameplay is lacking

Tailor-made app with team-based gameplay



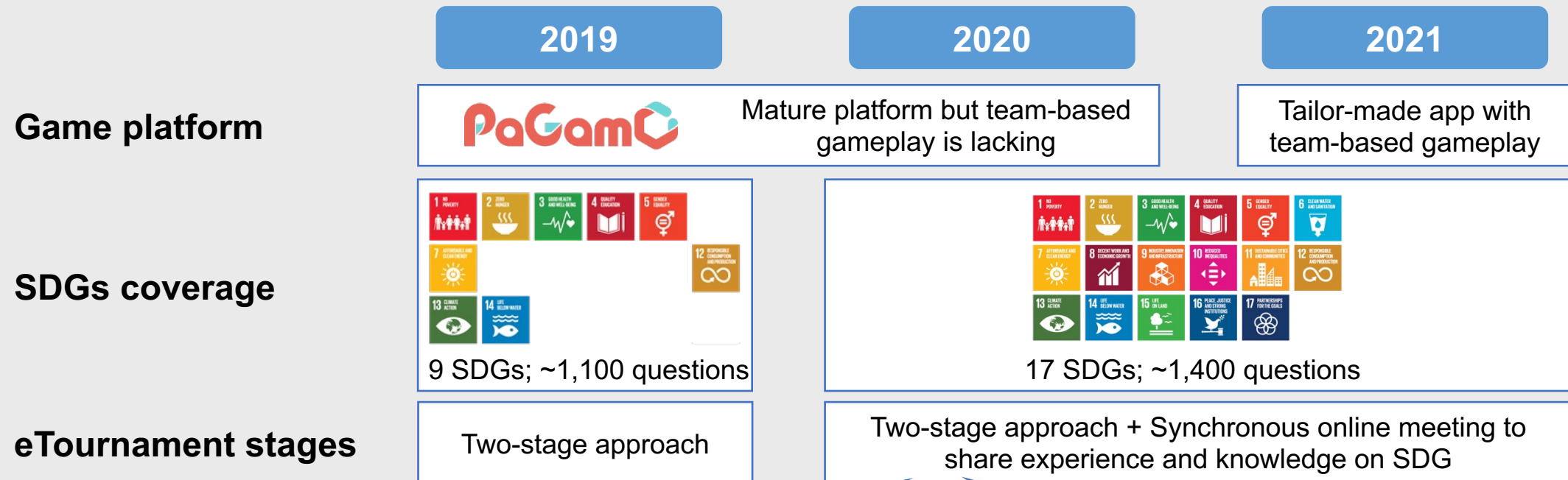
9 SDGs; ~1,100 questions



17 SDGs; ~1,400 questions









eTournament: Evolution (2019 - 2021)



“I personally found the 40-minute discussion to be a lot more informative and effective in pushing participants to engage with the SDG intellectually and encouraged critical thinking about the SDG. It also promoted further bonding within the team.” (2021)

“I think there should be more challenges that involve talking with the groupmates! The call with my team has become a highlight of my 2020!!” (2020)

eTournament: Evolution (2019 - 2021)

	2019	2020	2021
Game platform	 <p>Mature platform but team-based gameplay is lacking</p>		<p>Tailor-made app with team-based gameplay</p>
SDGs coverage	 <p>9 SDGs</p>		 <p>17 SDGs</p>
eTournament stages	<p>T</p>	<p>“It can be a little hard to communicate with my teammates through the forum posts and chats.” (2019)</p>	<p>100 questions</p> <p>Asynchronous online meeting to share knowledge on SDG</p>
Team messaging platform	 <p>Easy administration</p>	 <p>Facilitate team communications</p>	 <p>More platforms to cater for regional preferences</p>



eTournament: Approach for high schools

(eTournament 2022 & 2023 for Greater China Region)

~~Team formation
by Organiser~~

Stage 1: Strategise

Team training – Online materials on teamwork, conflict management and cultural differences

Team strategising – Teams to get acquainted, do SDGs research, and formulate strategies for Stage 2*

3 days

~~Regrouping
by Organiser~~

Stage 2: Compete

Tournament -- Teams to compete by answering SDGs questions**

Sharing on SDGs (2020 & 2021) -- Teams to discuss on an assigned SDG in more depth

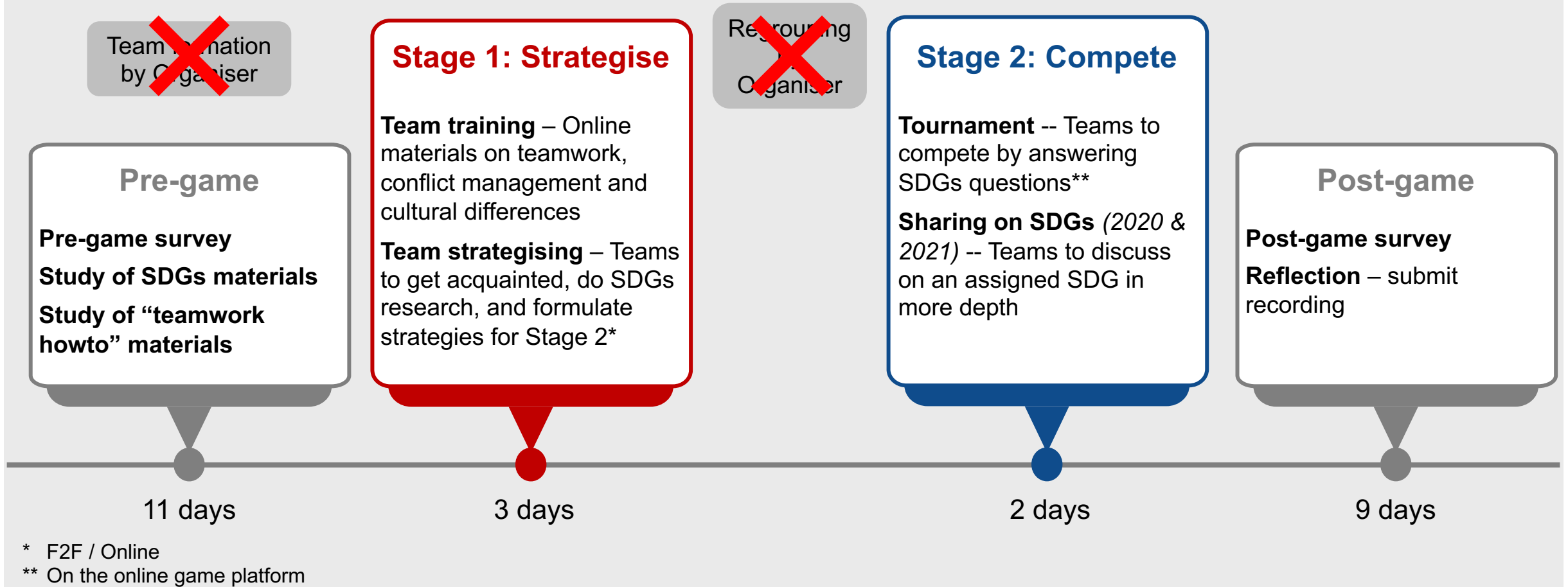
2 days

* F2F / Online

** On the online game platform

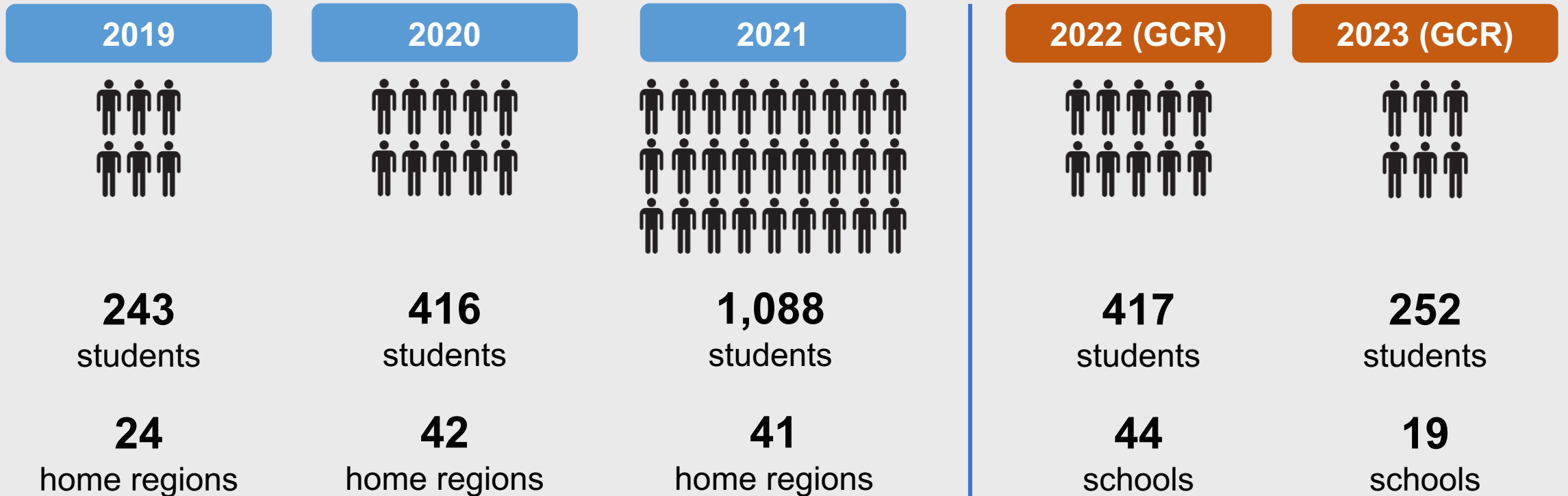
eTournament: Approach for high schools

(eTournament 2022 & 2023 for Greater China Region)



eTournament: Outcomes

Participants



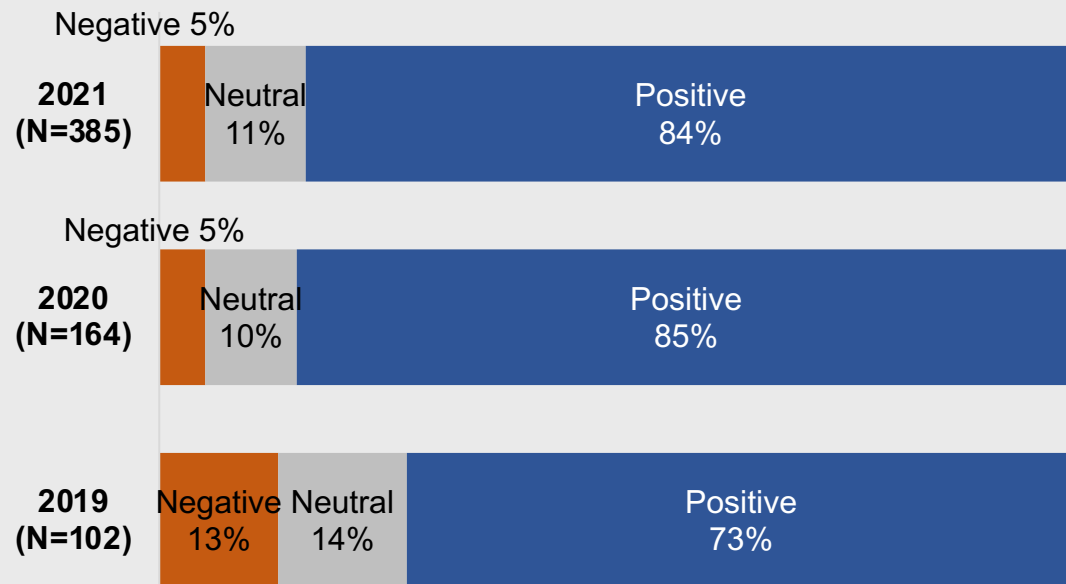
Website of eTournament: <http://ccgame.hkbu.edu.hk> (2019-2020)

eTournament: Outcomes (conti.)

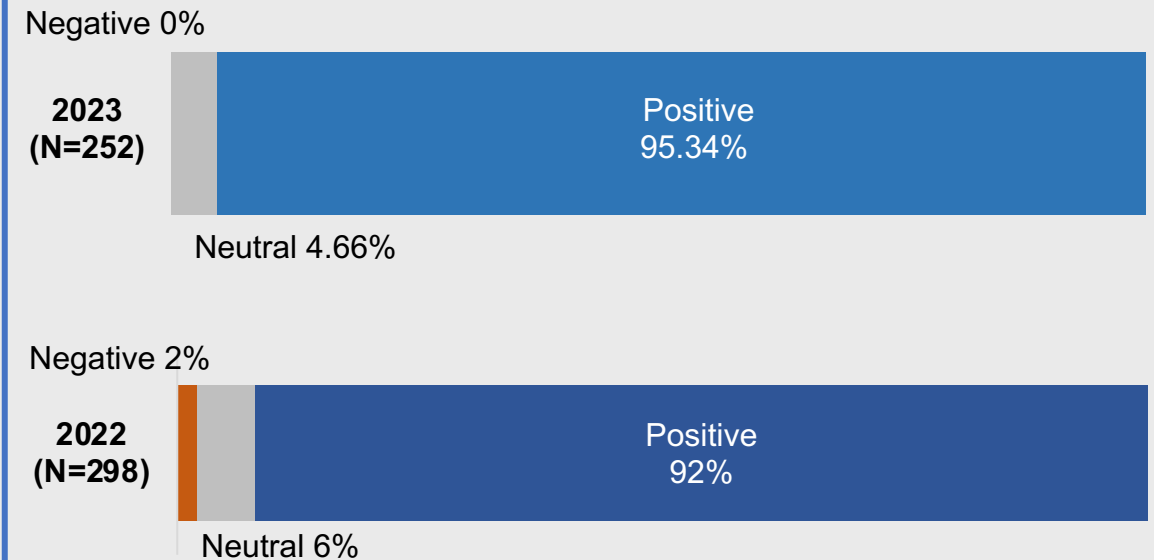
SDGs awareness

Post-game survey results: Students have been highly positive that they have become more aware of the SDGs because of the eTournament

International eTournament



eTournament for High Schools

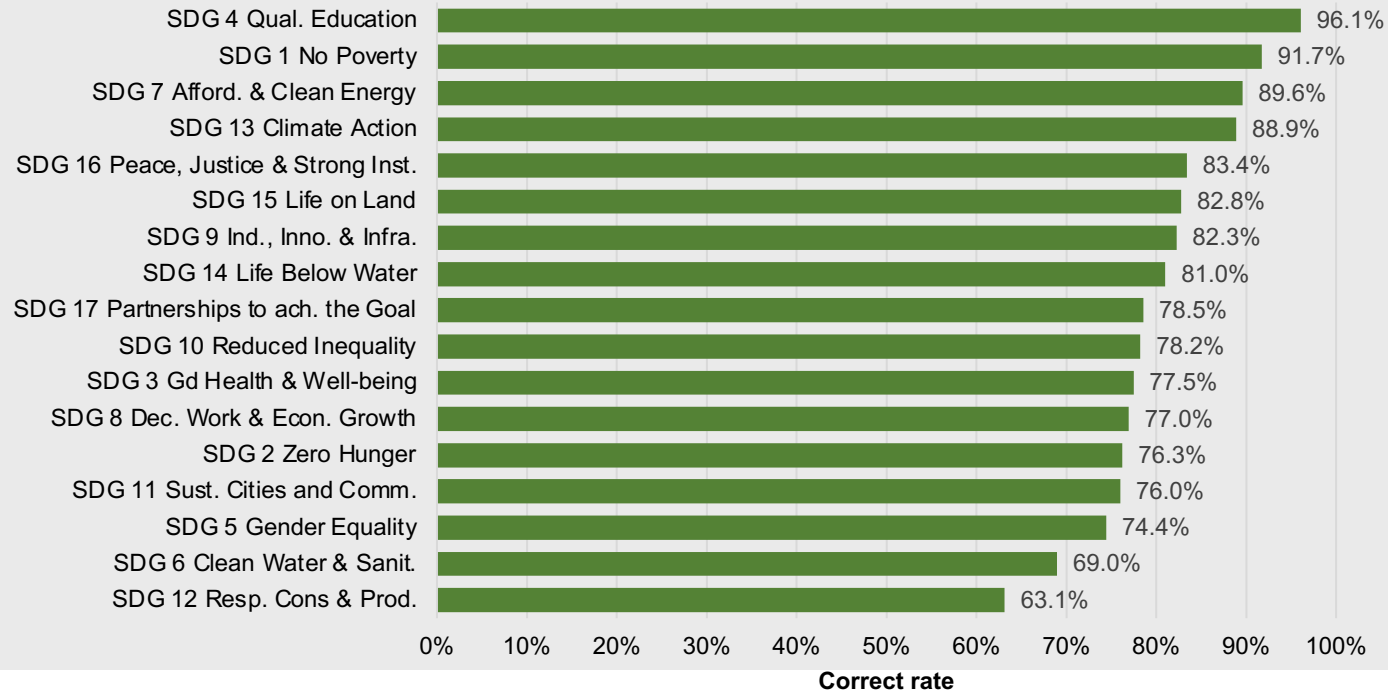


eTournament: Outcomes (conti.)

SDGs awareness

- Differences in the “best performed SDGs” by international students and high school ones
- Differences in correct rates by international students and high school ones

International eTournament (e.g. 2021)

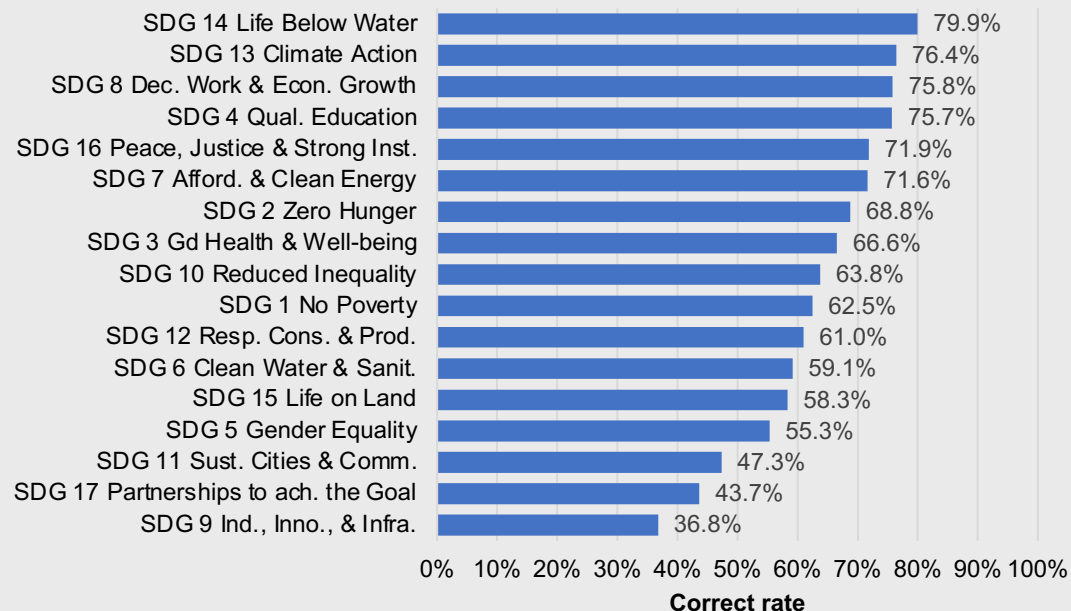


eTournament: Outcomes (conti.)

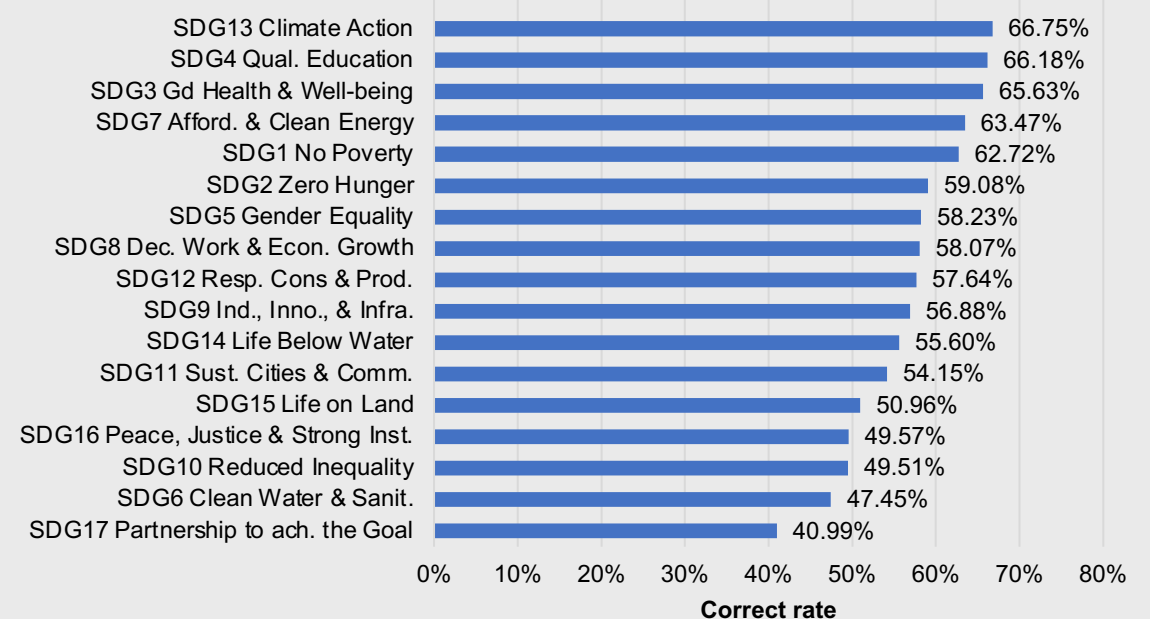
SDGs awareness

- Differences in the “best performed SDGs” by international students and high school ones
- Differences in correct rates by international students and high school ones

eTournament for High Schools 2022



eTournament for High Schools 2023



eTournament: Outcomes (conti.)

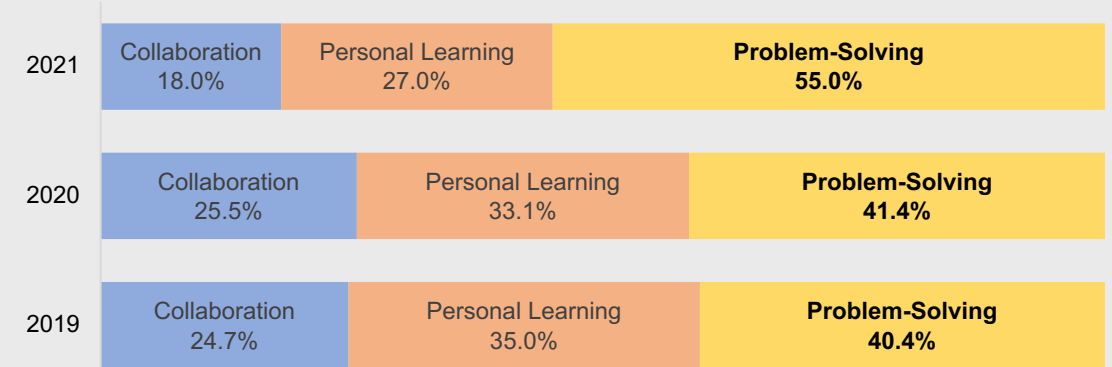
Collaborative Learning

Text mining of online discussion logs in accordance to a keyword framework with words grouped under “**Collaboration**”, “**Personal Learning**” and “**Problem Solving**”

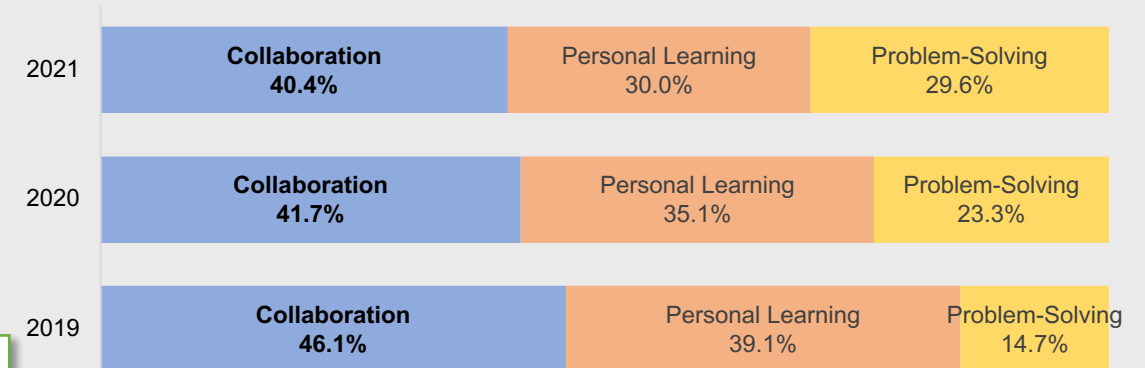
- **Top-5 teams:** Most of the discussion efforts were on **Problem Solving**
- **Bottom-5 teams:** Most of the discussion efforts were on **Collaboration**

Based on the **top 10%** and **bottom 10%** of the total number of teams (55) in the 2019 run

Online discussions (Top-5 Teams)



Online discussions (Bottom-5 Teams)



Conclusion

- The eTournament has improved upon existing pedagogical practice through gamified global digital learning challenges
- The eTournament has been effective to arouse students' curiosity and desire to learn by making central the solving of SDG-related problems to win the eTournament as a team goal for teams with cross-disciplinary and cross-cultural members

(Lau *et al.*, 2021)

eTournament websites:

- <http://ccgame.hkbu.edu.hk> (2019-2020)
- <http://chtl-bu.hkbu.edu.hk/sdg-connect-gcr> (2021 international-2022 high school)
- <https://chtl-bu.hkbu.edu.hk/sdg-connect-gcr2023/> (2023 high school)

References

- Lau, M., Vuthaluru, R., Mui, L., Kerrigan, S., Kwong, T., Law, L., Wong, E. Y. W., & Gibson, D. (2021). "How Online Teams with Diverse Backgrounds Worked to Excel: Findings from an International eTournament". *Frontiers in Education*. <http://doi.org/10.3389/feduc.2021.624438>
- Law, L., Lau, M., Leung, Y. W., Kwong, T., & Wong, E. Y. W. (2020). "Gamification for Teamwork Skills: Can a Challenge-based Online Tournament Help Students Learn New Knowledge Collaboratively in Teams?" *Global Research in Higher Education*, 3(2), 63-84. <https://doi.org/10.22158/grhe.v3n2p63>.

Adopting Gamified eTournament on Raising Students' Awareness of SDGs

Thank you

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