Implementing STEAM activity through Blended-learning Classroom model (BLC)

By IRDTP, Khon Kaen University

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Cooperation Program for
Quality Teacher Education

To expand the education network at the regional level in Asia, and consolidate the main goals of UNESCO

• 2018 - now

Korea , Korea National University of Education

Laos, Souphanouvong University

Vietnam, VNU-University of Education

Indonesia, Indonesia University of Education

Thailand, Khon Kaen University

Thailand, Mahidol University, Kanchanaburi Campus

2021 International cooperation

Korea , Korea National University of Education

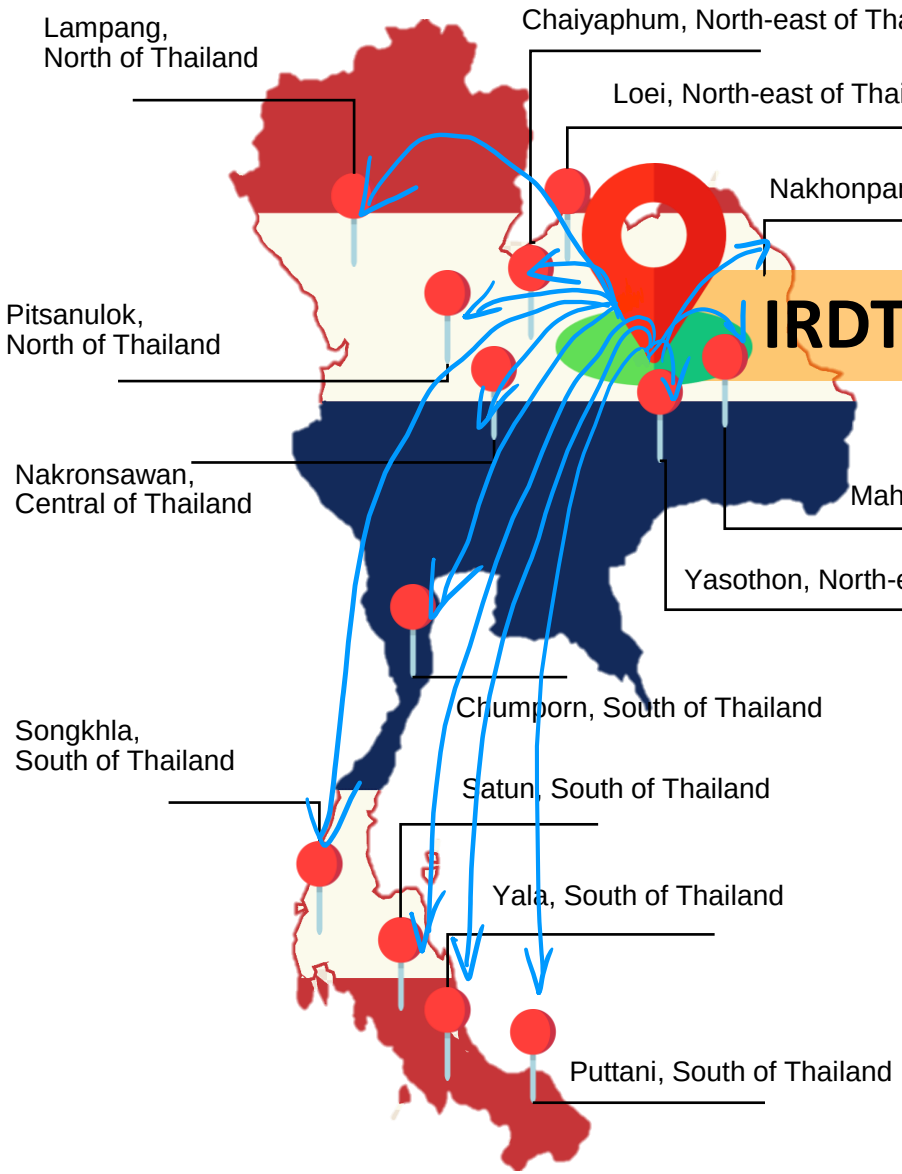
provided

Thailand, Khon Kaen University

KNUE-UNITWIN introduced and provided **hand-on** STEAM activities to Khon Kaen University including:

8 contents

Introduction to the program



Thailand, Khon Kaen University

The main center of the country to expand activities

IRDTP, Khon Kaen University

Non-degree program

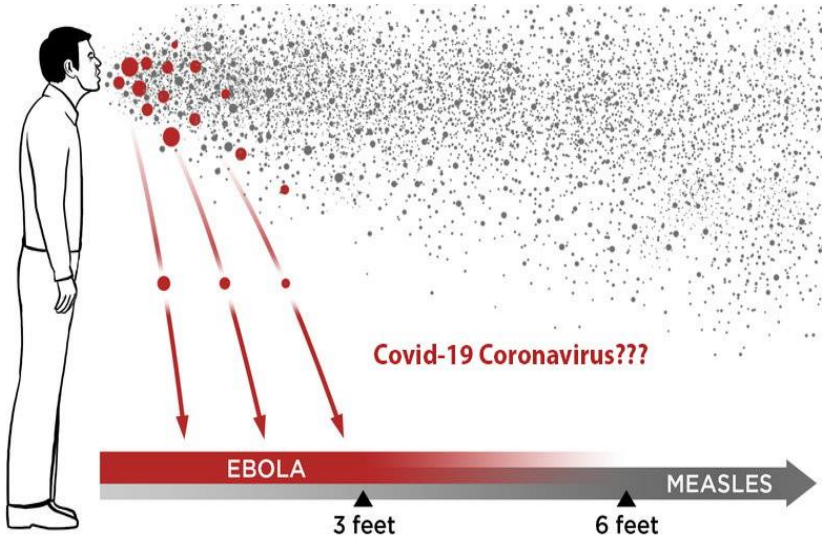
49 participants

- School directors
- Teachers
- Lecturers
- Educators
- Graduated students

World Health Organization

Picture from: http://thg-health.com/covid19/77-covid-19.html

Since late 2019, the COVID-19 pandemic has created the largest disruption of education systems in history, affecting learners in more than 190 countries around the world.



Activity Implementation

Covid-19 Policy Statement

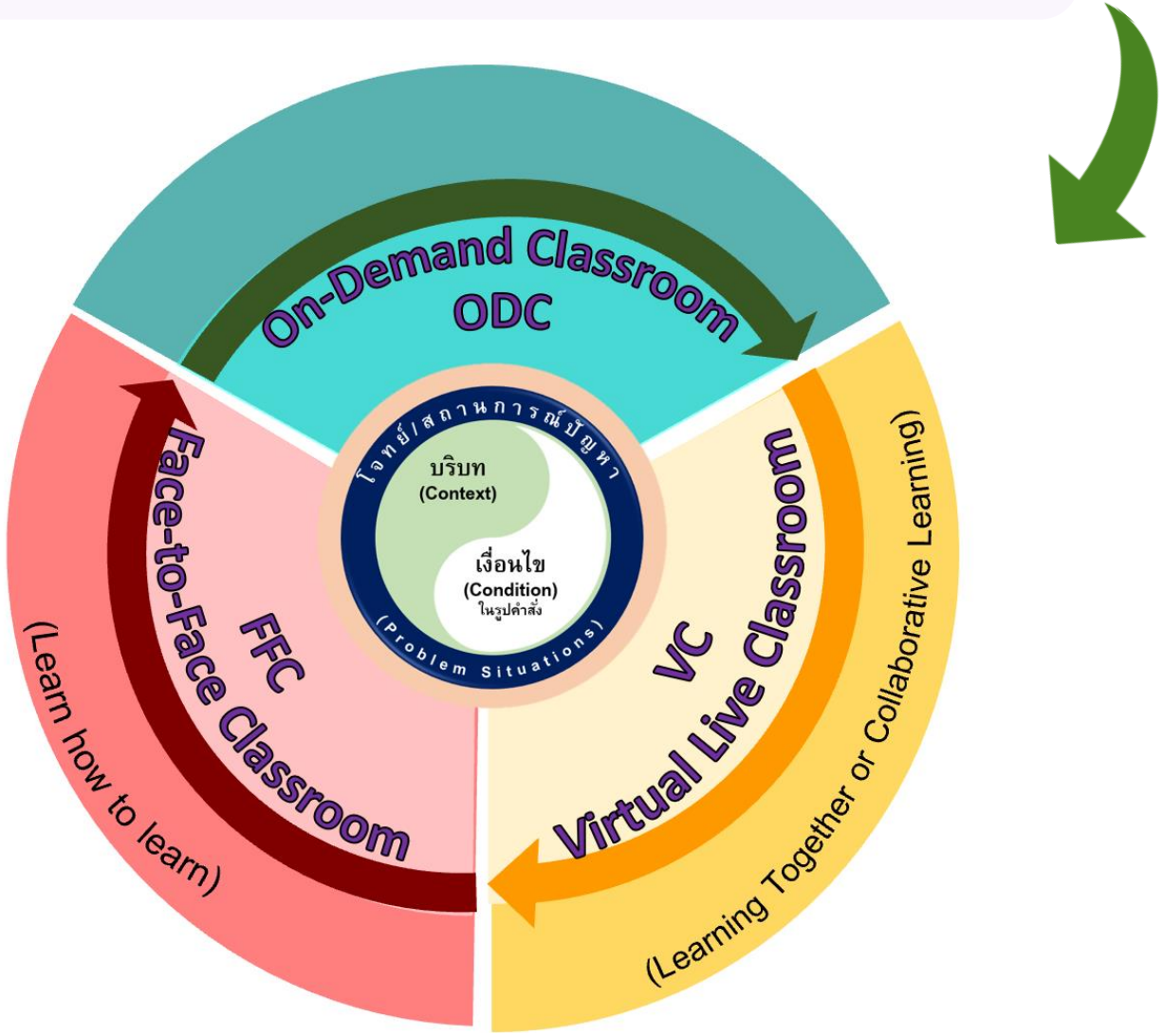
Many countries launch the policy ***to close the school***, ***university, and other learning spaces*** such as a library, and a museum for preventing the COVID-19 pandemic.

Online learning

Activity Implementation

It becomes a challenge for us to try for finding appropriate ways to implement hand-on STEAM activity with online learning during this era.

Blended-learning Classroom
MODEL: BLC



Maitree Inprasitha, 2021

Activity Implementation

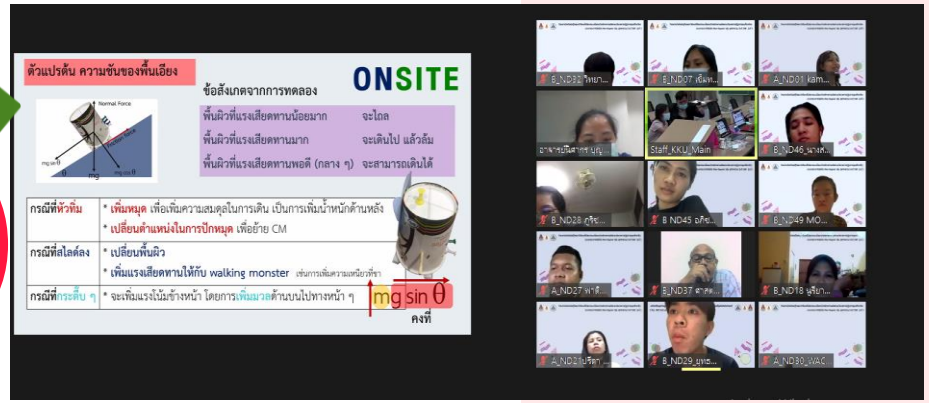
1 week

1 on-demand classroom

Blended learning Classroom

3 hrs

2 Zoom virtual classroom

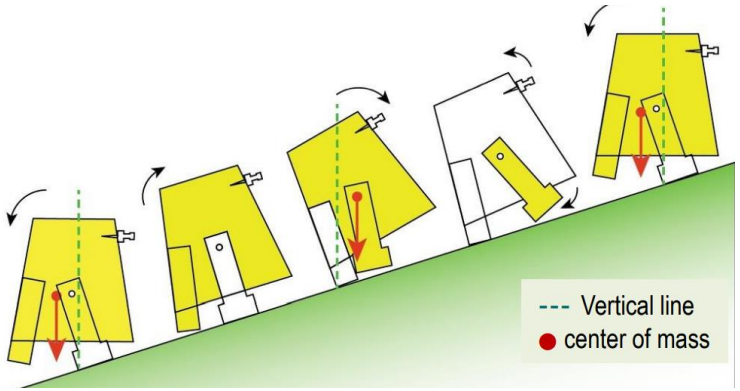


3 hrs

3 face-to-face classroom

Activity Implementation

Content of STEAM activity used in this project.



Science	Art	Tech.	Math.
Center of mass caused by movement	Design and express personality and identity	Adjust the position of pin and length of legs	Apply the principle of arc length

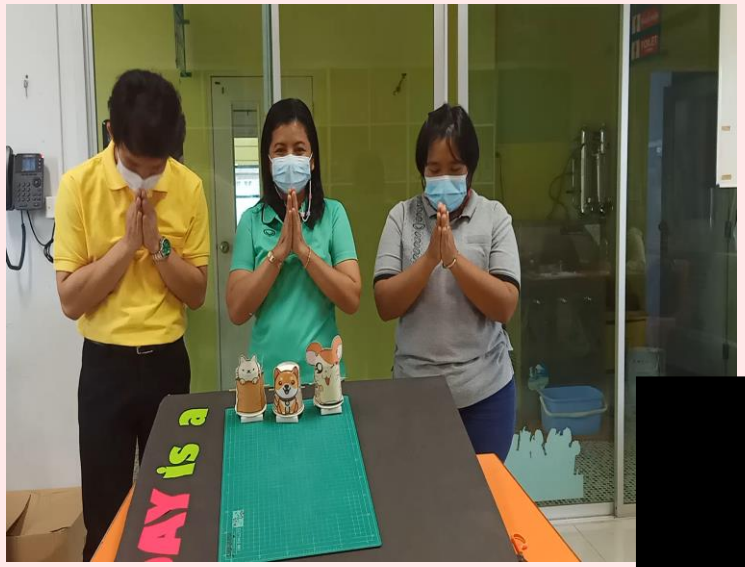
Jung, Eun Young
Department of Art Education
KNUE, Korea

1 on-demand classroom (1 week)

We sent all needed materials to non-degree participants.

Then we assigned a task to the non-degree participants to create their own Walking monster following the video we provided.

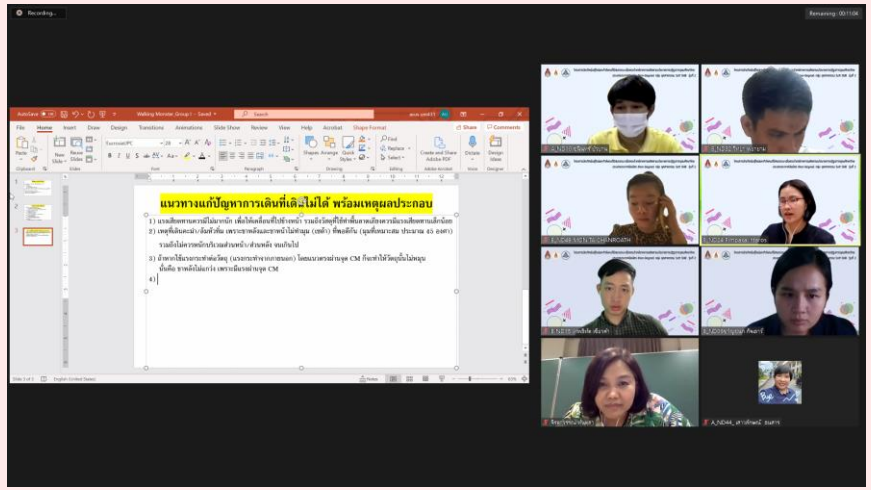
After they finished creating the walking monster, they would be asked to record video clips to present their monster.



Activity Implementation

(3 hrs)

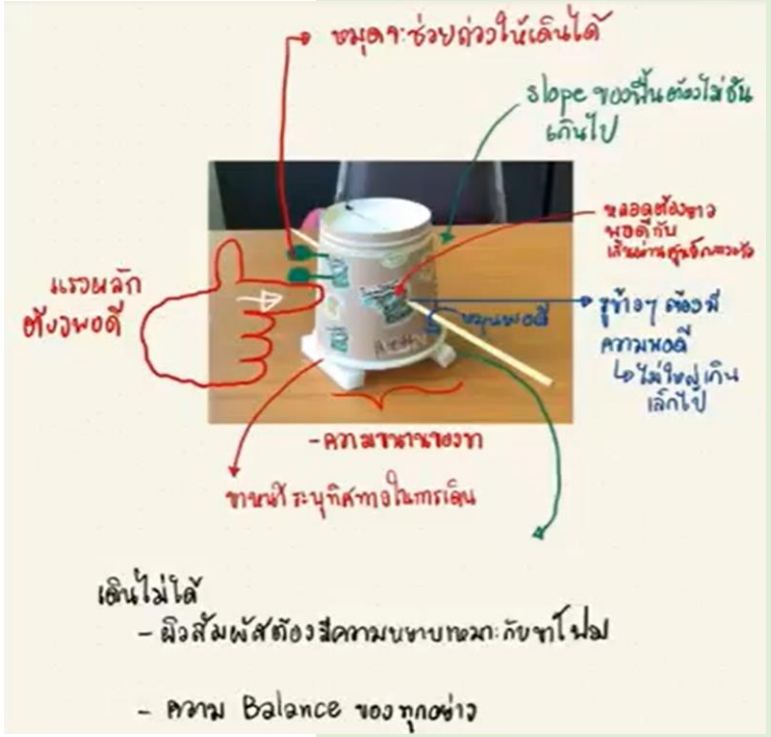
2 Zoom virtual classroom



Results

After participants finished creating their Walking monster in the On-demand classroom for 1 week, all of the participants attended the Virtual live classroom. They were separated into 5 groups. Then the teacher asked them to think about the monster's walking appearance. The results were the following:

Group/type	Monster's walking appearance	
	Able to walk	Not able to walk
1 Online	The monster walks just only one step. Walking's sound of a monster is very symphonic.	The monster fell forward. The monster fell backward. The monster slid down the slope.
2 Online	No mentioned	The monster walked imperfectly. The monster slipped to the left or right side. The monster fell forward. The monster slid down the slope. The monster did not walk because it could not sink backward.
3 Online	The monster walked like a leaf worm. The step of walking was short. The monster could walk just only one step.	The monster fell from the first step. The monster slid down the slope. The monster did not walk.
4 Online	The monster would walk perfectly but all parts of the structure need to be in balance.	The monster slid down the slope. The monster slipped to the left or right side.
5 On-site	The monster walked step-by-step fluently. The monster walked unstably. The monster slip-walked to the left and right side.	The monster could walk. But it fell down the slope after the second walking step. The monster slid down the slope. The monster did not walk. (Boat front and rear leg were touching the ground) The front leg floated up, but it did not sink back down to the ground.



Activity Implementation

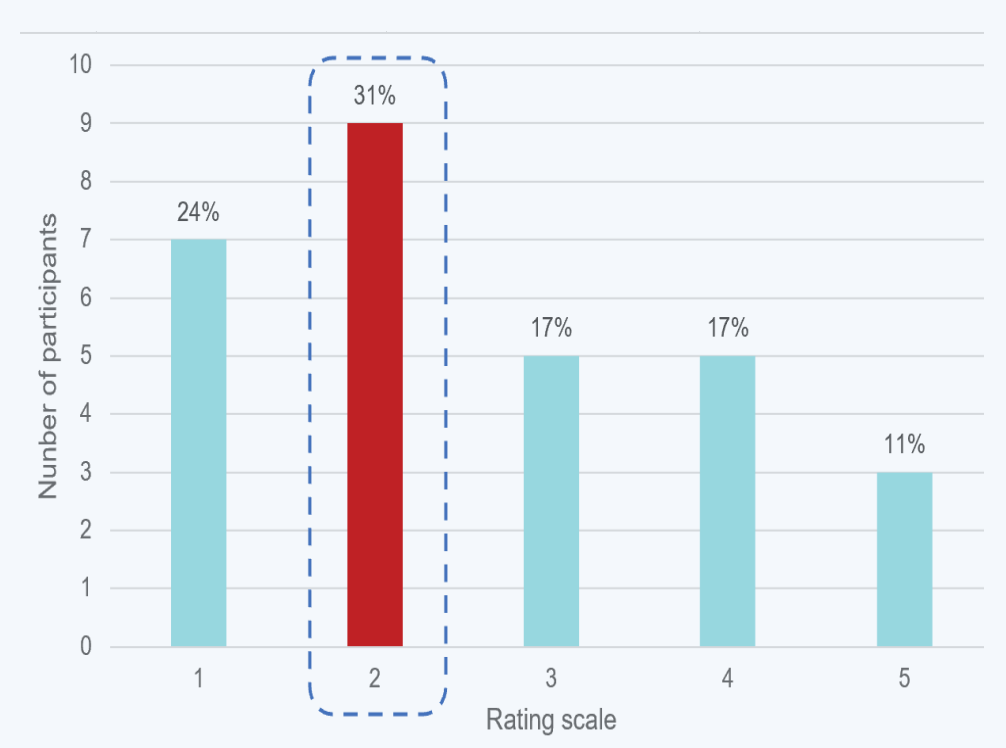
(3 hrs)

3 face-to-face classroom

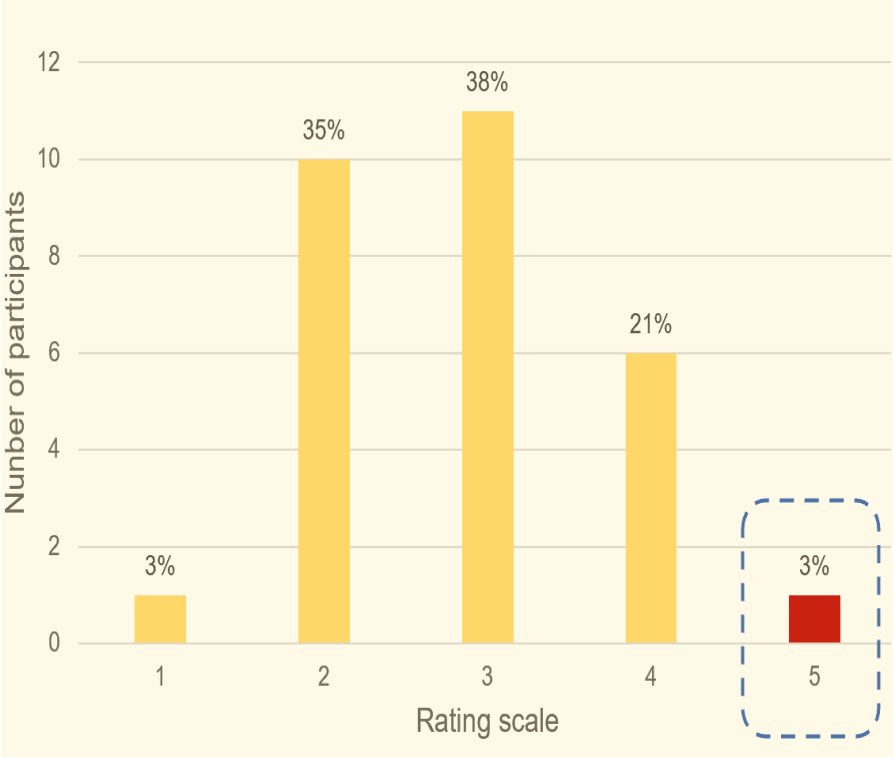
Results

After finishing the class, the participants were asked to do a self-evaluation. It including three multiple choices questions and two open-ended questions.

***Question 1*: "Does the monster walk forward well?"**

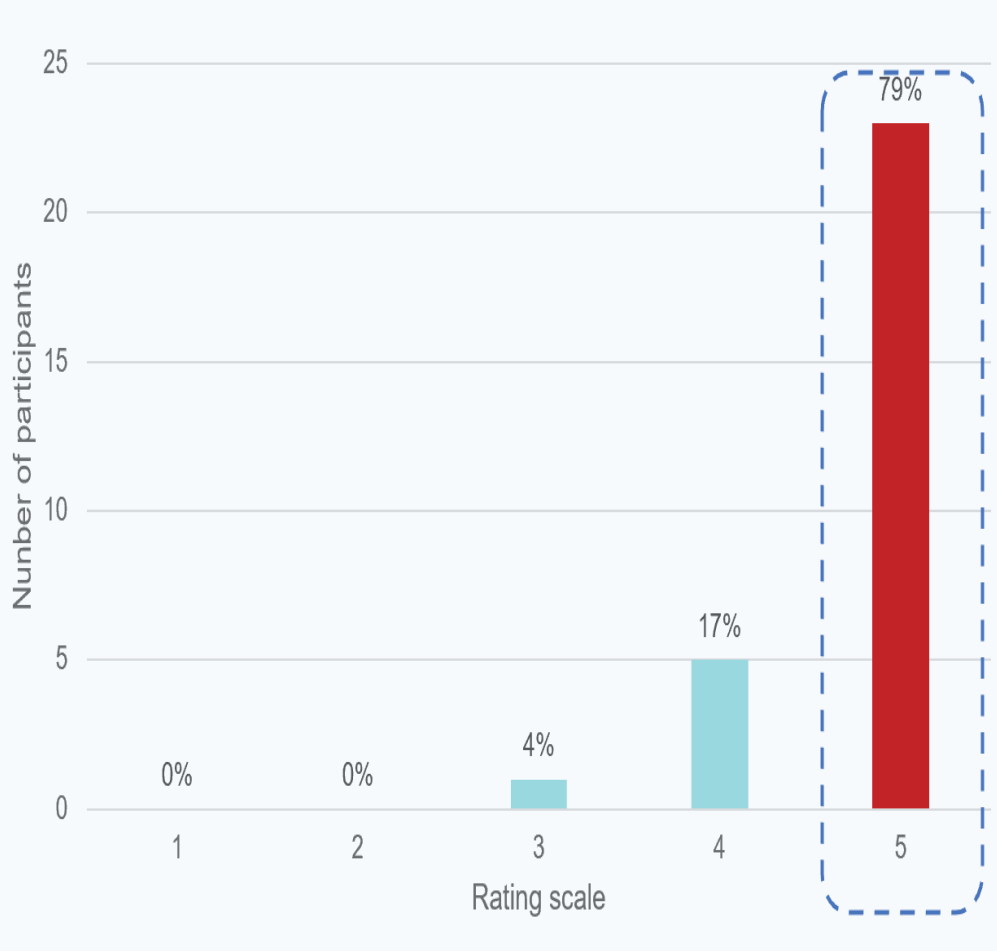


***Question 2:* "Designing the monster by considering the center of mass?"**



Results

Question 3: **"Sincerely participate in the class?"**



Question 4: **"What was the problem in the class?"**

1) The problem in creating the monster.
2) Not able to relate science concepts to the monster.
3) Not able to understand the force that affects the monster to its walking.
4) Got a problem with the internet connection

Question 5: **"Like and do not like?"**

Like:
1) Creating activity
2) Learning from doing
3) Sharing in class
4) Improving the monster
5) Hand-on through online learning

Application

THANK YOU