

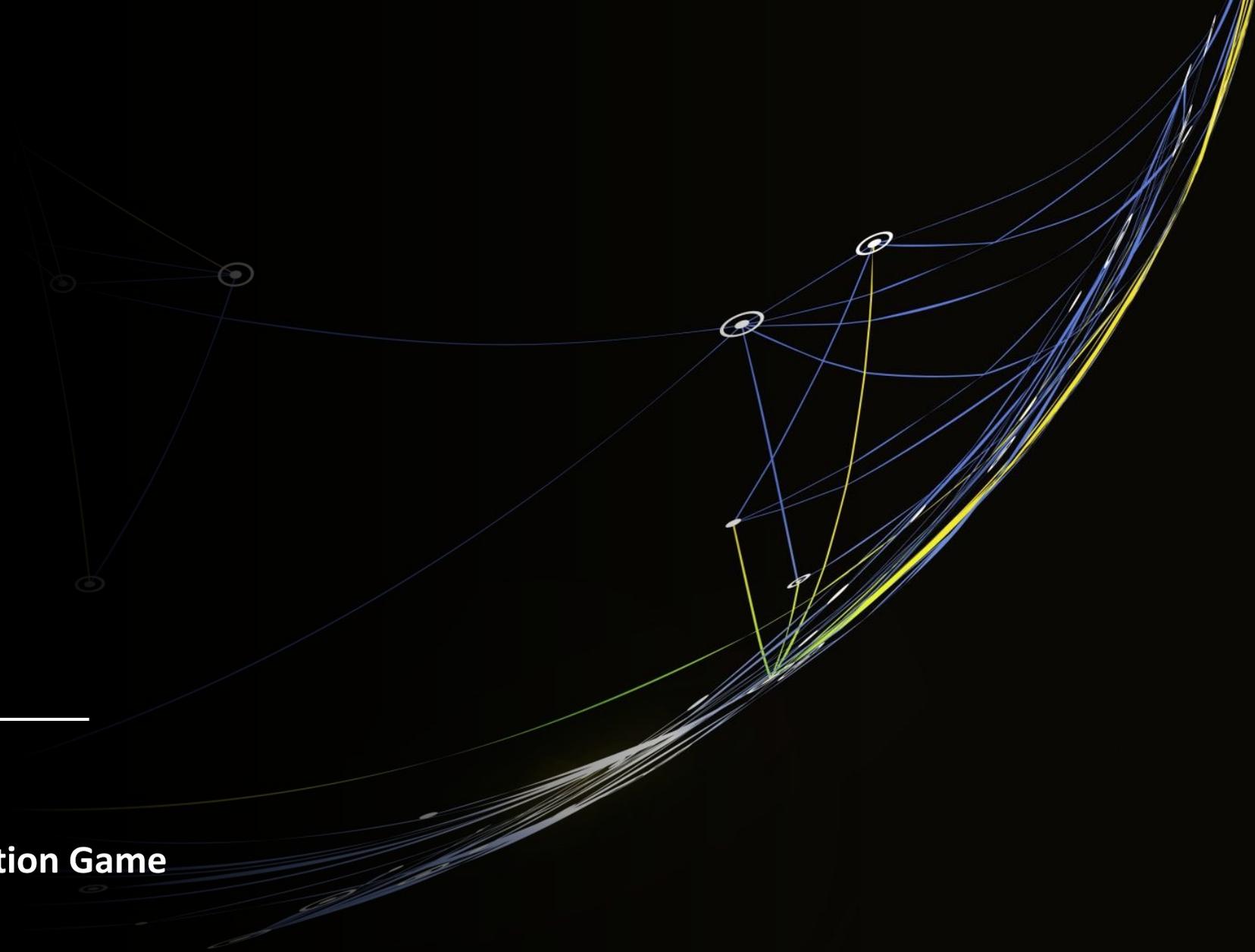


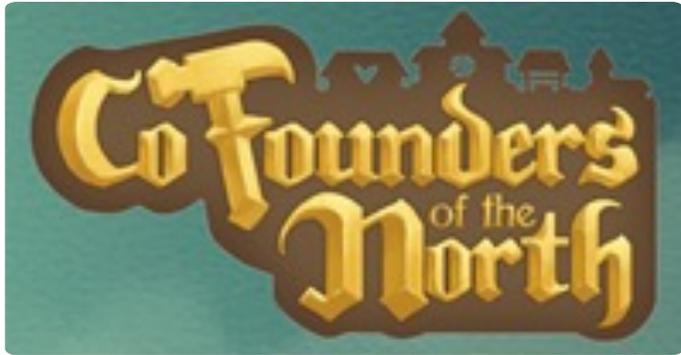
# Learning Innovation Festival 2023

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**Learning by Playing:**

**Introduction of Strategy Simulation Game  
"Cofounders of the North"**



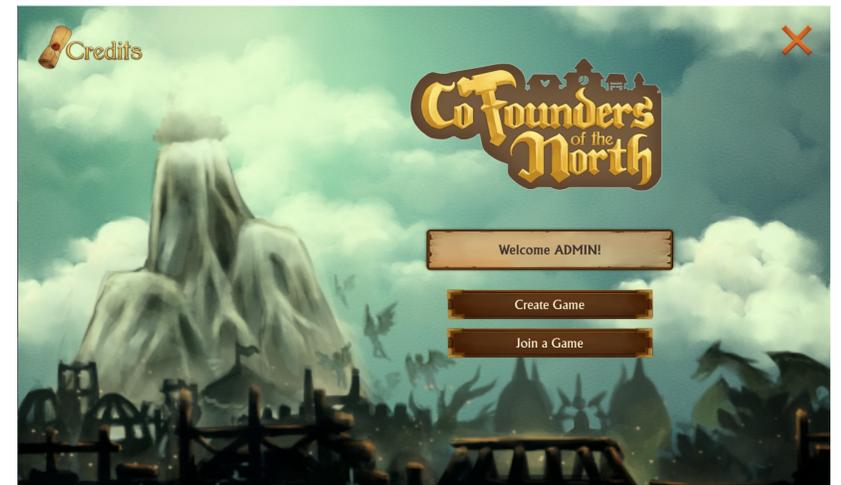


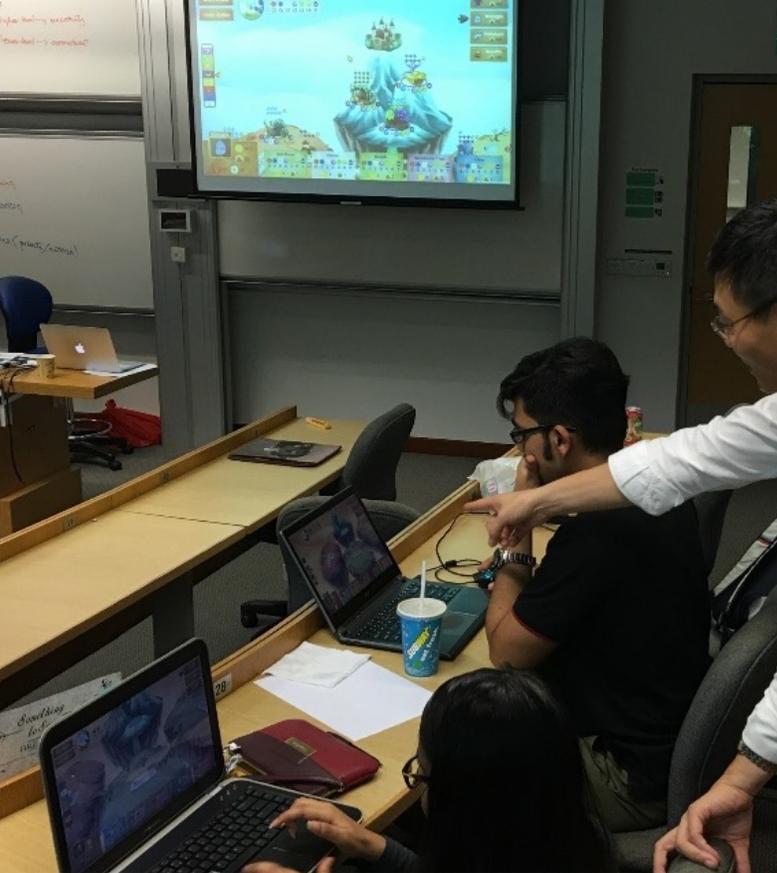
**Senior Lecturer  
Whitney ZHANG  
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Multiplayer  
game for  
strategic  
management  
and decision  
making



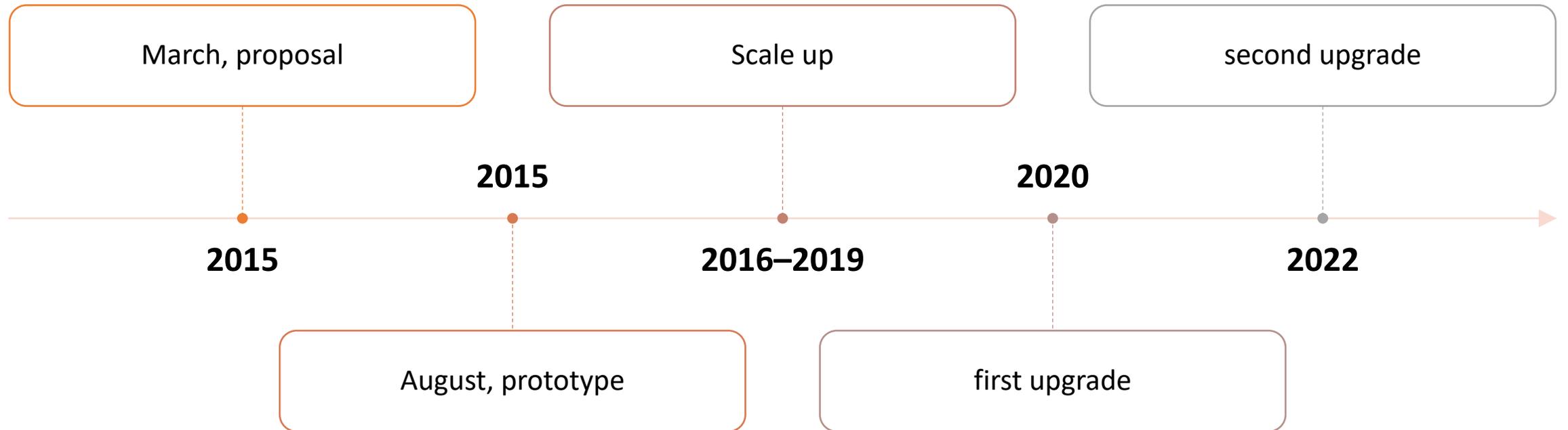


Every year, thousands of UG and PG students in SMU have learned courses by playing this game.

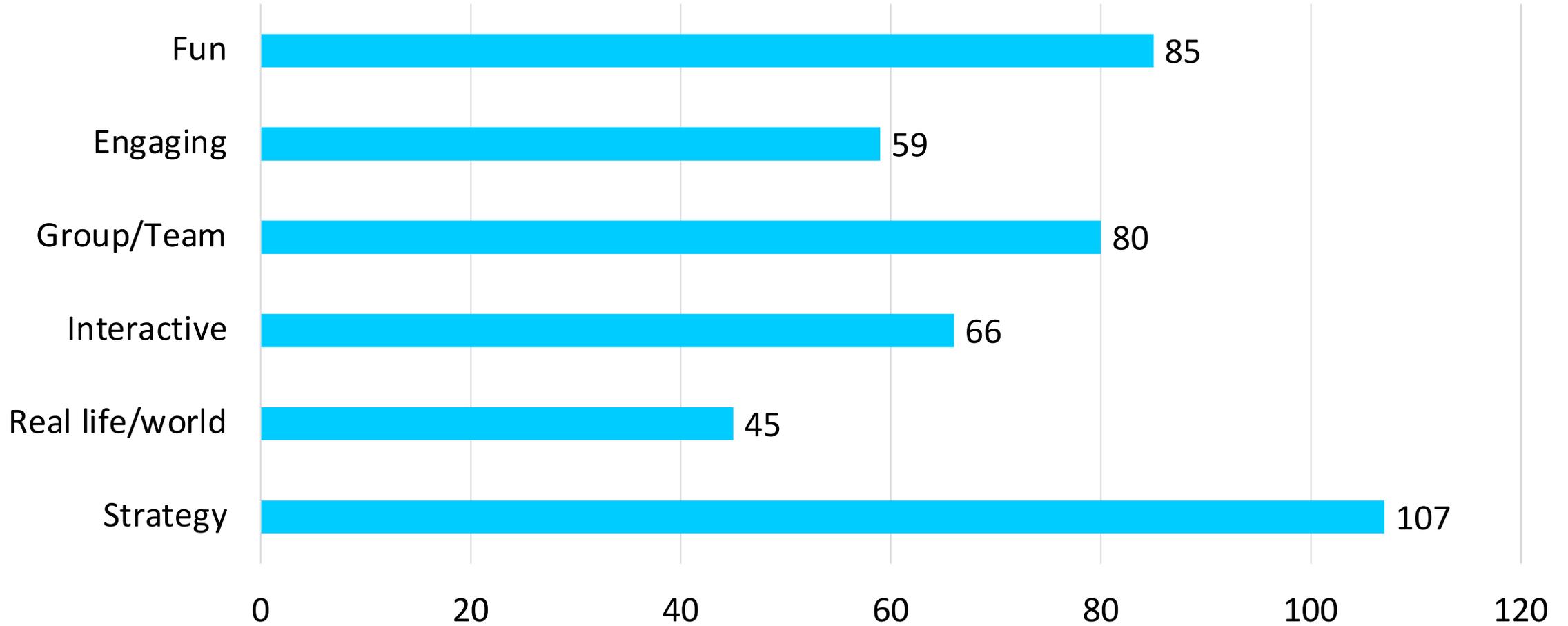
The game perform well in both large sized and small sized classes

The game is a useful teaching tool for various concepts and topics

# History of Game Development



# Students' description about experiences using Co-Founders



## Knowledge Improvement

		Alignment to Learning Objectives	Well-organised	Deliver in a Clear Manner	Allow Building of Knowledge	Enhance Making Connections to Real-life Issues	Make Meaningful Connections to Concepts Taught	Make Sense to Student	Provide Timely Feedback	Enhance Student Learning
N	Valid	311	311	311	311	311	311	311	305	305
	Missing	0	0	0	0	0	0	0	6	6
Mean		5.44	5.36	5.37	5.27	5.32	5.34	5.47	5.28	5.58
Median		6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Percentiles	25	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
	50	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
	75	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00

1 – Strongly agree 2 – Disagree 3 – Slightly disagree 4 – Neutral 5 – Slightly agree 6 – Agree 7 – Strongly agree

Generally speaking:

Medium= 6

IQR= 5 – 6

The Cronbach's Alpha reliability coefficient for 9 items was 0.934 ( $\alpha \geq 0.9$ ). Internal consistency is Excellent.

## Concepts about VUCA

- It provided a real-time simulation that encouraged me to draw on *certain key VUCA concepts such as time pacing and organisational learning*. (S159)
- I could apply *VUCA concepts* via the game e.g. *developing a portfolio of options*. (S189)
- it is interesting to explore the *VUCA concepts that were utilized here in strategic decision making and considering VUCA-discussed threats such as absorption agility mindset*. (S194)
- Illustrates *VUCA concepts like managing your portfolio, uncertainty quite effectively* through its features (random income multiplier, building and tearing down buildings) (S261)

## Strategy

- It creates a simplistic way to implement the *strategies* that we understand and provides a platform where otherwise would be unavailable to use these strategies (S6)
- It shows the importance of prioritising decisions and goals, as well as *strategise* on how to use resources effectively and efficiently (S11)
- It is an interesting way to engaged me in understanding the concepts and *strategy* (S17)
- It allows us to *strategise* where to build our "factory" and make smart investment decisions. (S42)
- it allows me to think about how to *strategise* effectively to reach the end goal (S305)

## Engagement

		Work on Co-Founders until it is Completed	Stimulate Curiosity in the Topic	Motivate Student to Explore Further	Co-Founders is Challenging	Focused when Working on Co-Founders	Forgot about Everything Else During Co-Founders	Enjoy Co-Founders for Learning	Feel Energised Using Co-Founders	Feel Good using Co-Founders
N	Valid	311	311	311	311	311	311	311	311	311
	Missing	0	0	0	0	0	0	0	0	0
Mean		5.58	5.57	5.46	5.45	5.60	4.73	5.60	5.50	5.52
Median		6.00	6.00	6.00	6.00	6.00	<u>5.00</u>	6.00	6.00	6.00
Percentiles	25	5.00	5.00	5.00	5.00	5.00	<u>4.00</u>	5.00	5.00	5.00
	50	6.00	6.00	6.00	6.00	6.00	5.00	6.00	6.00	6.00
	75	6.00	6.00	6.00	6.00	6.00	<u>6.00</u>	6.00	6.00	6.00

1 – Strongly agree 2 – Disagree 3 – Slightly disagree 4 – Neutral 5 – Slightly agree 6 – Agree 7 – Strongly agree

Generally speaking:

Medium= 6

IQR= 5 – 6

The Cronbach's Alpha reliability coefficient for 9 items was 0.909 ( $\alpha \geq 0.9$ ). Internal consistency is Excellent.

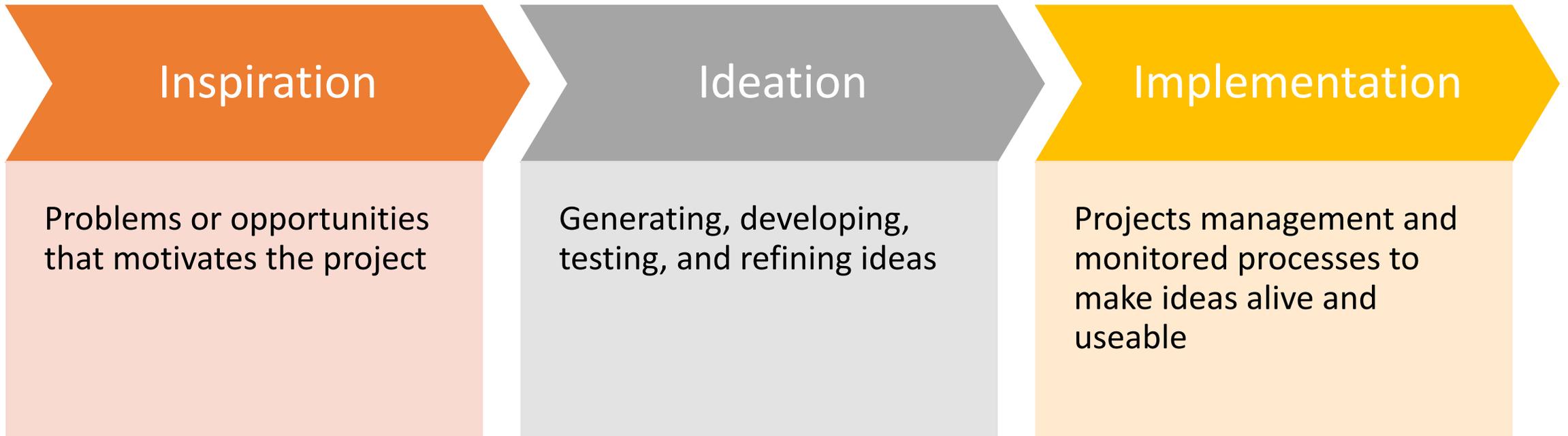
## Interactive

- It is *very interactive* and I like how it is a between group challenge (S16)
- It is *very interactive* and I am able to discuss my strategies with my groupmates. (S43)
- *Interactive* way to test strategy concepts. (S112)
- I think the *game is interactive*, which helped us to gain interest in the topic on hand. (S160)
- The *interactive* and complex *part* of the resource definitely intrigued me and kept me entertained and interested. (S302)

## Inspired to Learn

- I was able to actually *experience the concepts taught* to me in the class applied on my screen every moment. That way my *clarity of the concepts increased* (S16)
- The *theories* of options and trade-offs were *applied* in the game (S287)
- *See* how your decisions affect the future outcomes (S79)
- *Acquiring capabilities*. When we are not sure, *we ask groups* that seem to know what they are doing. (S286)
- *Interest me to explore*. (SS299)

# Game Development Methodology



# Inspiration



CONCEPTS THAT ARE  
“EASIER SAID THAN DONE”



INSPIRED TO LEARN OR  
MOTIVATED TO LEARN?



LEARNING SHOULD BE FUN



EXPERIENTIAL LEARNING +  
COLLABORATIVE LEARNING

# Ideation



START WITH THE PAIN  
POINTS



ENGAGE WITH STUDENTS  
FEEDBACK AND  
INSTRUCTORS FEEDBACK



BALANCE BETWEEN THE  
IDEAL AND PRACTICAL  
CONSTRAINTS



PRIORITIZE GOALS

# Implementation



MVP methodology



Map game elements  
to learning  
objectives



Structured but  
open-minded



Assemble a capable  
team



Document  
everything

# Newest Build!

**Edit Room Settings**

Game State (Default: Neutral)

Faction Powers:

- RELIGION:  On  Off
- BESTIAL:  On  Off
- CIVIL:  On  Off
- COMMERCIAL:  On  Off
- MAGIC:  On  Off
- MILITARY:  On  Off
- GULE:  On  Off

Building Powers:

- VUCA CONCEPTS:  On  Off
- COMPETITION CONCEPTS:  On  Off
- CROSS-MARKET COMPETITION:  On  Off
- HARVEST POWER:  On  Off
- FIRST MOVE ADVANTAGE/DISADVANTAGE:  On  Off
- ENTRY BARRIERS:  On  Off

Other Settings:

- Visual Style:  Fidelity  Social  Thematic Innovation
- Random Events:  Random  Off  Self-Host

**Create Room**

**Final Scoreboard**

Income AP Bonus AP Gold Used AP Totals

Faction Statistics

AP per faction

Turn

View Game Board Return to Main Menu

You can only choose one faction's power to use.

**Skill I**

**- 2 USES LEFT -**

**[Martial Law I]**

Select a building.

*-Divert its income to you for 1 morning.*

**Use**

**- 0 USES LEFT -**

**[Eye for Opposites]**

Select a location or building.

*- Multiplies by how AP by 2x.*

*- Gain 2 gold whenever an ACTION is taken on this location.*

*- Cannot be used on the same target more than once.*

ACTIONS include: Construction, Demolishing, Replacements, Power usage.

**Use**

Back to board

**Day 2** Occult Circle

Demolish Building

Participant Info

**ALCHEMY**

3 Uses Left

**Use**

(upon use)

- You will miss all turns until the next morning.
- You gain 5 gold in exchange.

( Leader: 3 Uses)

( Year: 2 Uses)

( Participate: 1 Uses)

**Demolish**

Demolish unavailable on this island. Please start a Replacement Project instead by clicking a blueprint and then clicking on this building.

