Introduction to Design Thinking: Reframing Problems into Opportunities

CDIO Asian Regional Meeting 2014

Kanazawa Institute of Technology, March 25, 2014
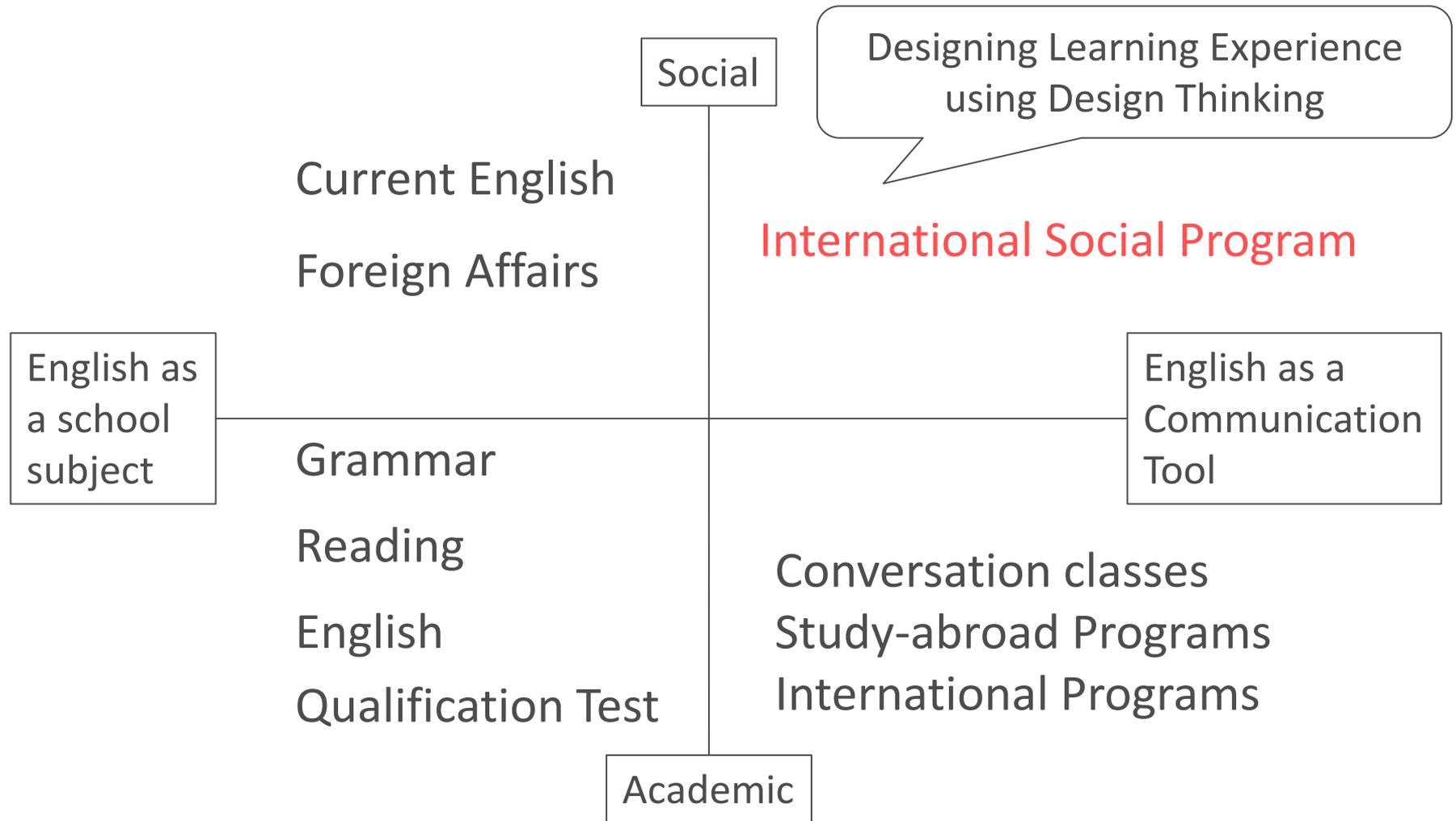
Omihito Matsushita

Dept. of Global Information Technology

Kanazawa Technical College

Today…

- Introduction

- Workshop: Pair activity

- Sharing Design Thinking projects at KTC/KIT

Omihito Matsushita

2003〜 English as a Foreign Language
2013〜 **Design Methods**

Social

Designing Learning Experience using Design Thinking

Current English

Foreign Affairs

International Social Program

English as a school subject

Grammar

English as a Communication Tool

Reading

English

Conversation classes
Study-abroad Programs
International Programs

Qualification Test

Academic

Make Pairs

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Warming-up

Sketching yourself (1min)

Draw something that represents yourself:

hobby, favorite something, things you use everyday…

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Warming-up

Introduce yourself (1min)

Introduce yourself to your partner using the sketch.

Design

To solve problems

Design Thinking

Thinking out-of-the-box

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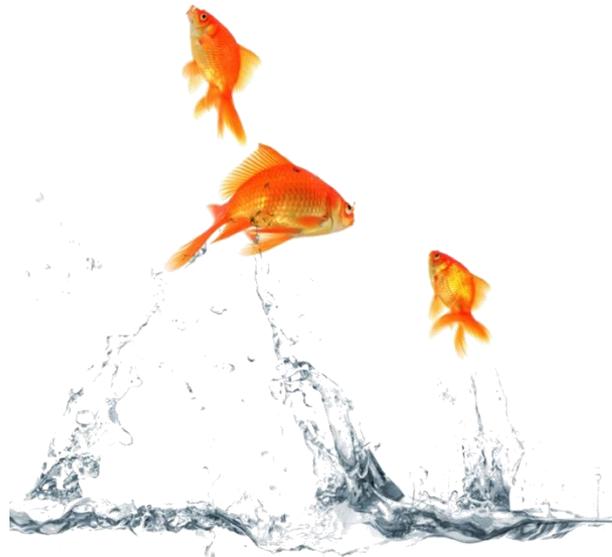
Design thinking is a human-centered approach to innovation that draws from the **designer's toolkit** *to integrate the needs of people, the possibilities of technology, and the requirements for business success.*

Tim Brown, president and CEO, IDEO

Workshop Theme

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Re-designing the Travel Experience in Kanazawa
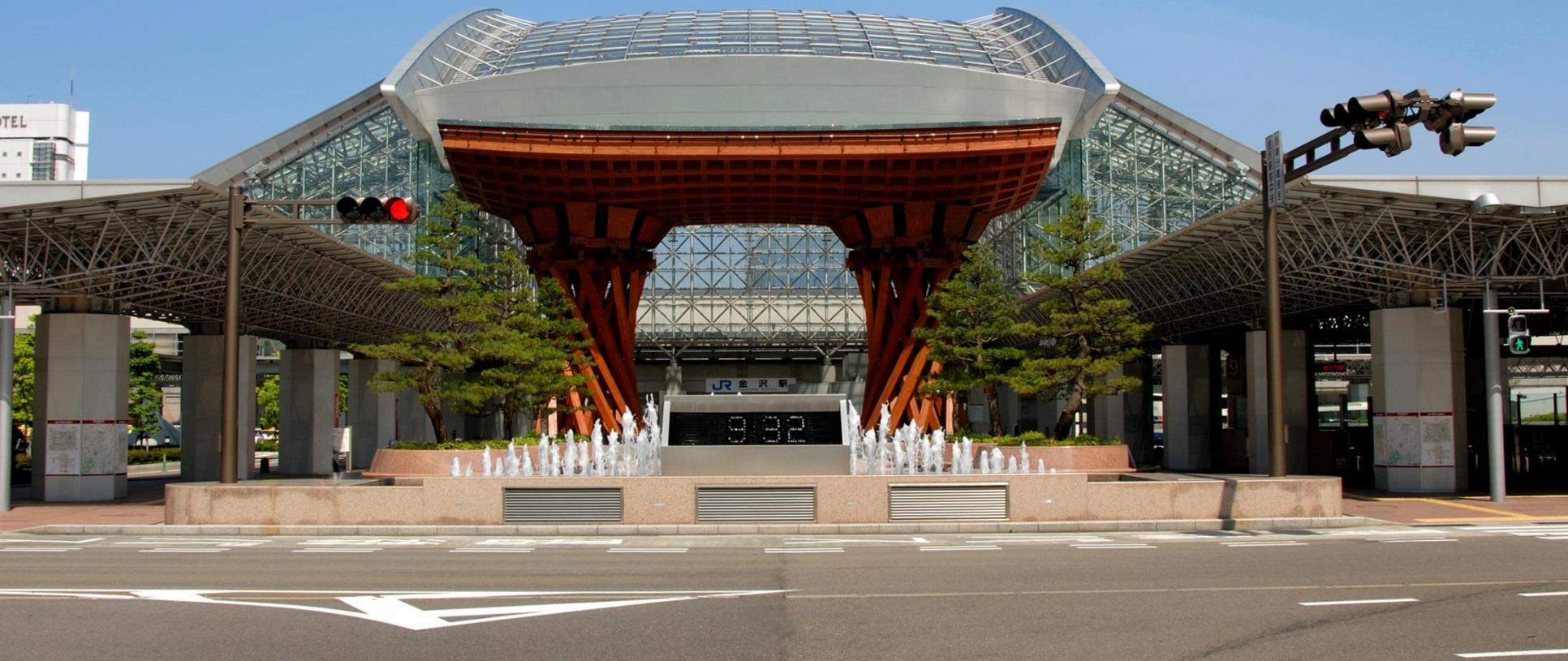
写真提供：金沢市

Re-designing the Travel Experience

Interview （4min×2, 3min×2）

"Understanding what your partner is trying to achieve

through traveling"

"Why"

Ask for unique experiences, emotions

Aspirations, expectations, challenges

Let your partner tell her/his personal stories about traveling

In Kanazawa.

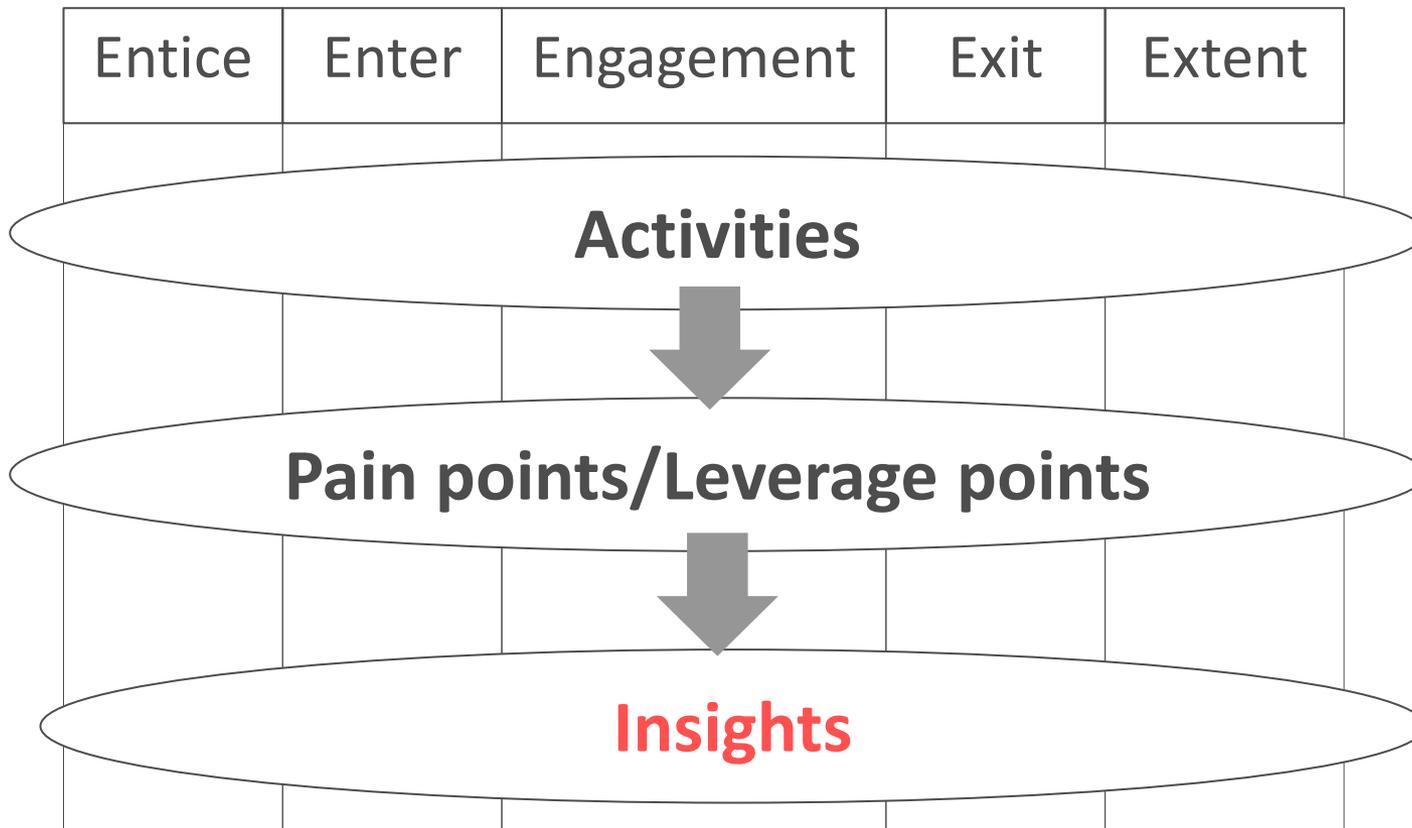Ask if your partner has some artifacts to share.

Please take notes!

Re-designing the Travel Experience

Interview （4min×2, 3min×2）

5E User Experience Map

"Why is it pain?"

Entice	Enter	Engagement	Exit	Extent

Activities

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Pain points/Leverage points

⬇

Insights

Reframe the problem （6 min）

What are 3 unique aspects of your partner's travel?

"I didn't know which bus to take,
    but I hesitated to ask someone for help."

What are the new findings about your partner's feelings and motivations.

"She is afraid of asking questions in Japanese
  because she thinks using wrong Japanese troubles people ."

Need Statement

"She needs a way to be assured that she is using the right Japanese
 for help because she doesn't want to trouble people around
  by using the wrong Japanese."

Generate alternatives （5 min）

Make solutions that are useful and meaningful to your partner based on what you learned.

Sketch radical ideas!

Be visual, and go for quantity!

Do not judge your ideas.

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Sharing and feedback （3 min×2）

Share your solutions and capture the feedback.

Don't defend your ideas.

This is not testing your ideas.

Another opportunity to learn more about your partner's feelings.

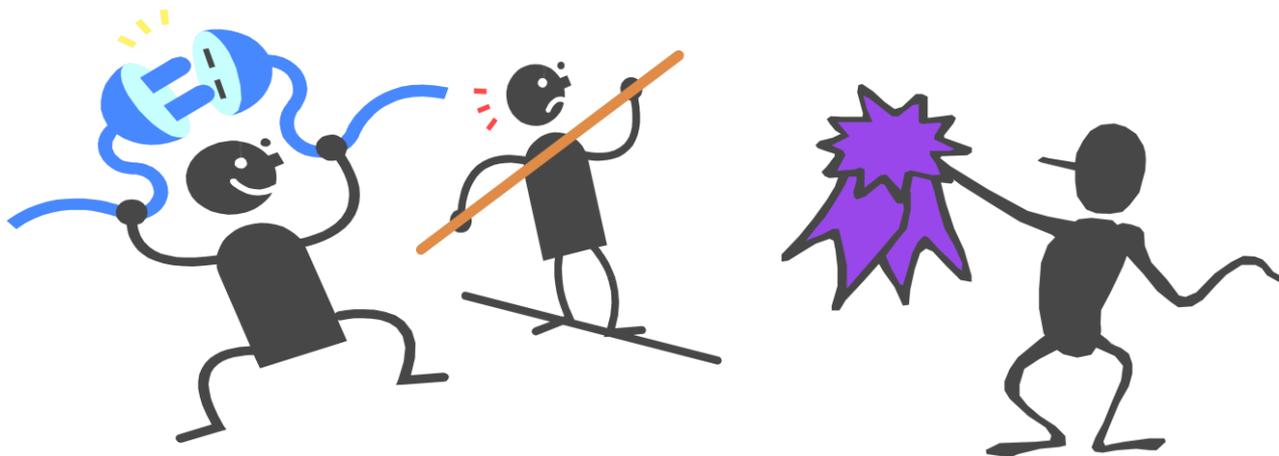Add on more ideas from the feedback.
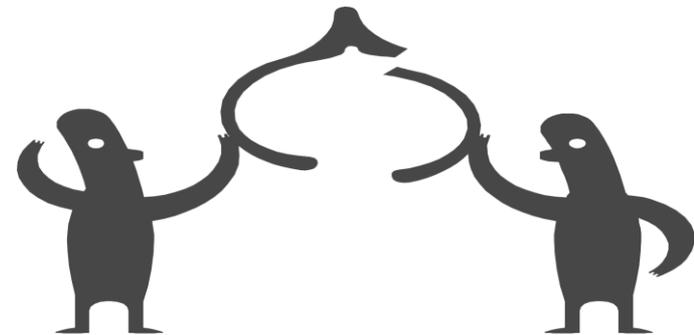
Prototype （15 min）

Build to think

Make something your partner can interact with

Testing and Feedback （3 min✕2）

Share your solution

and get feedback!

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The d.school, Stanford Univ.

TECHNOLOGY
(feasibility)

BUSINESS
(viability)

DESIGN
INNOVATION

HUMAN VALUES
(usability, desirability)

http://dschool.stanford.edu/our-point-of-view/
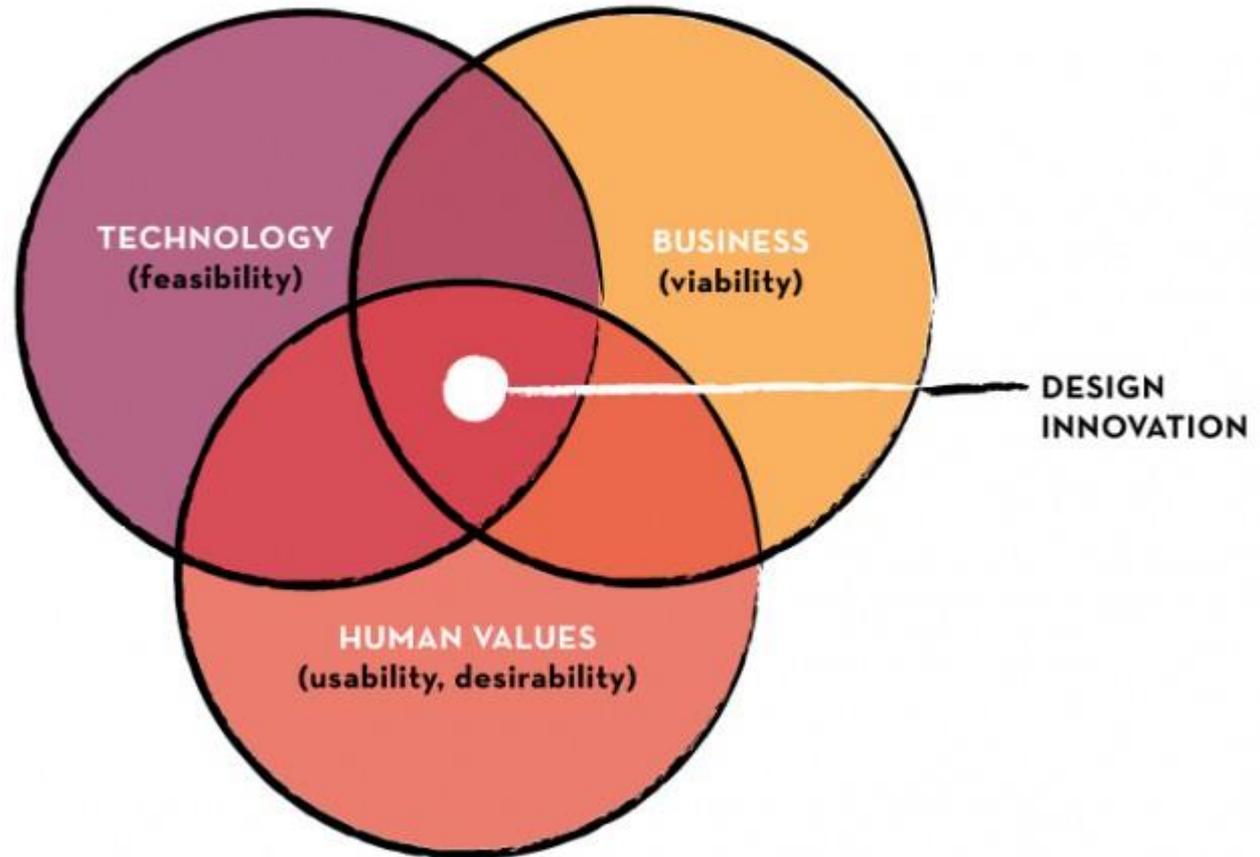
Design Process at KTC

Real

see, do, say…

Abstract

thinking, feeling

Design Process at KTC

Wearing someone else's shoes

Empathy

- Observation
- Interview
- Photostudy
  etc

Building to think

Prototype and Test

- Rapid prototyping
- Role-play
- storyboard
  etc...

Real

Defining unmet needs

Analysis

- KJ Method
- Scenario
  etc...

Abstract

Collaborating for creative potentials

Co-creation

- Brainstorming
- Workshop
  Etc...

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Design Process at KTC

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- Observation
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Building to think

Prototype and Test

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Real

Abstract

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  etc...

Collaborating for creative potentials

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  Etc...

Creating New Value and Experience

Improving product and system functions and qualities
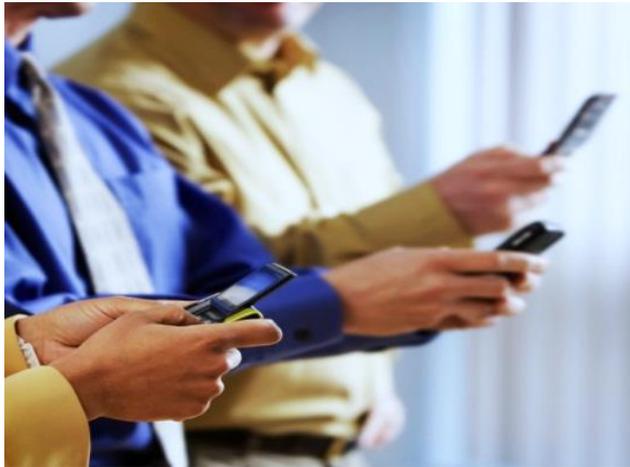
Providing new interactions and lifestyle experiences

HOW to make
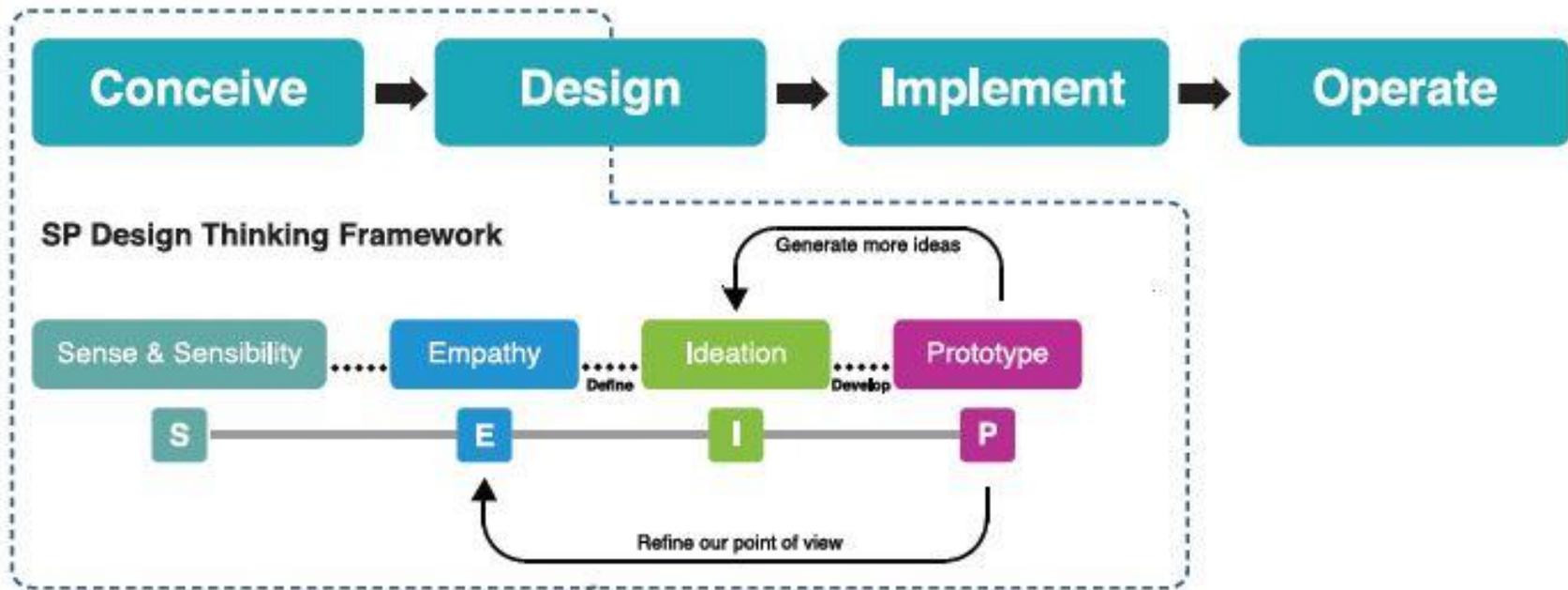
WHAT/WHY to make

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Hands-on Projects through Understanding People

Know
HOW to make

Technology

Business Model

etc…

Engineering

Discover
WHAT/WHY to make

Lifestyle、 work、

learning、 motivation

Etc…

Design

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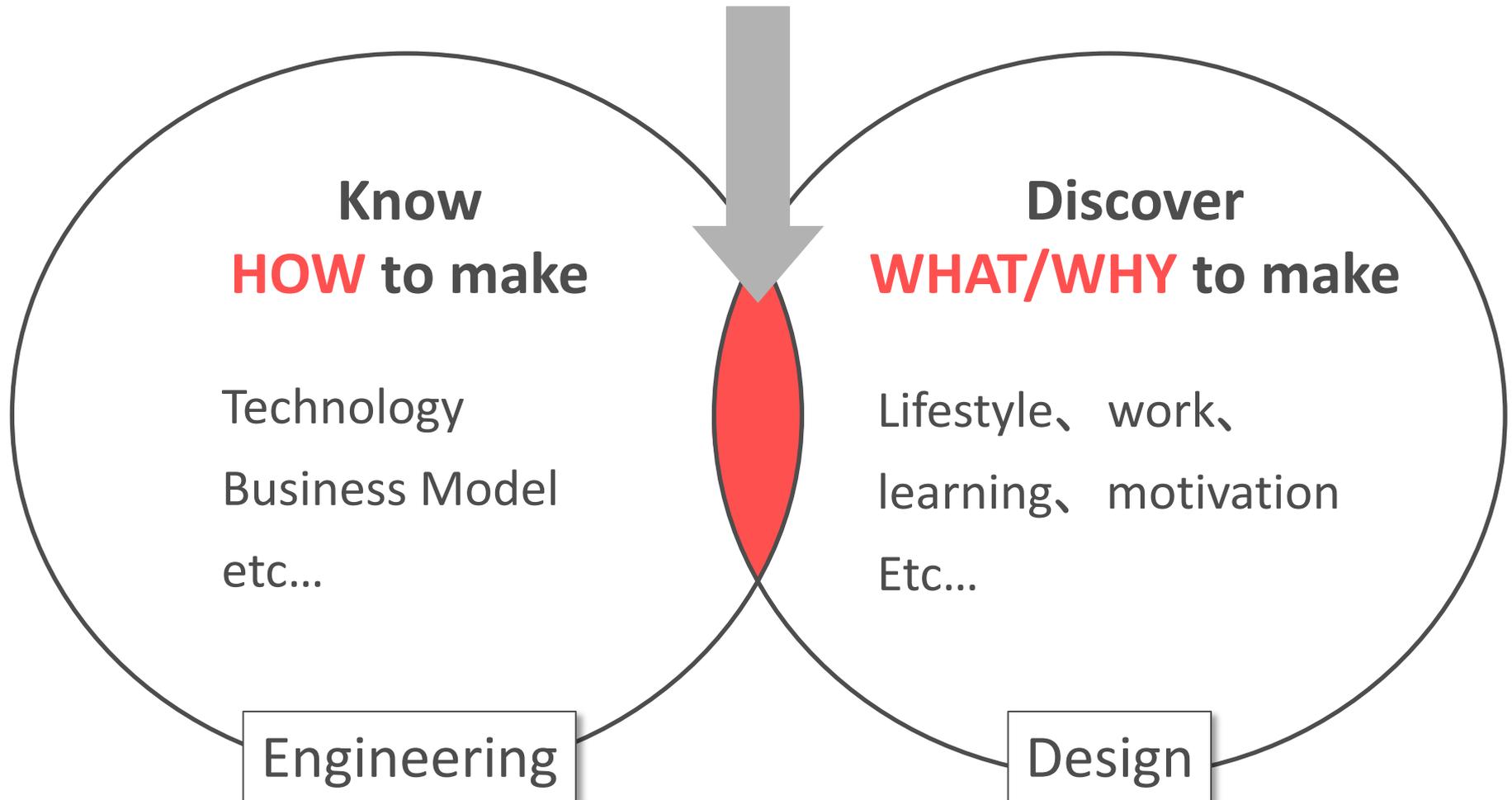
Singapore Polytechnic Framework

CDIO and Design Thinking

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Design Projects at KTC, 2013

Understanding the values that people appreciate in a local Hot Spring community in Ishikawa

Learning Express organized by Singapore Polytechnic in Indonesia

Extra Curricular Program by KIT&KTC

Mutli-disciplinary
Social Innovation Project

Engineering Management at KTC

33 students

Year 4

Dept.of Global IT

2 hrs /week for 15 weeks

October 2013 – February 2014

24% Good at coming up with creative ideas

30% Good at group works

21% Having broader mindset and thinking skills

94% Want to acquire skills for creative thinking

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How might we help students develop

Creative Confidence?

Learn by doing

How might we help students develop Creative Confidence?

Theme: **How can we develop community value for
a student- town around KIT/KTC?**

Observation/Interview
(POEMS/Empathy Map)
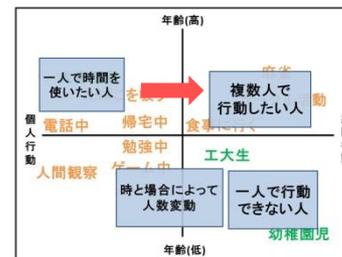
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Data Clustering for insight
(KJ Method)

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User Mapping
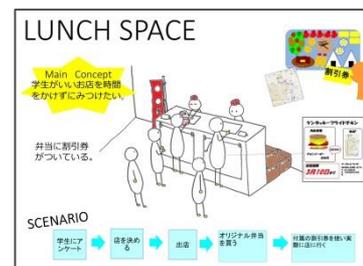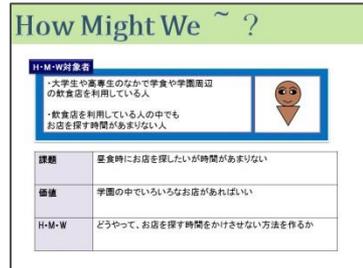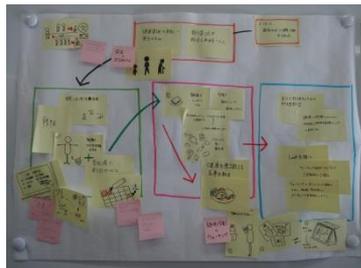(2 by 2 Matrix)

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Needs statement

⬇

User Personas

HMW Statement

⬇

Brainstorming/Idea Sketch

⬇

Stakeholder Value Map

⬇

Use Case Scenario

⬇

Concept Poster

⬇

Feedback

How might we help students develop Creative Confidence?

Theme: **How can we develop community value for a student- town around KIT/KTC?**

Observation/Interview
(POEMS/Empathy Map)

↓

Data Clustering for insight
(KJ Method)

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User Mapping
(2 by 2 Matrix)

↓

Needs statement

↓

User Personas

How might we help students develop Creative Confidence?

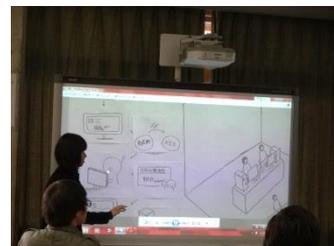Theme: **How can we develop community value for a student- town around KIT/KTC?**

HMW Statement

⬇

Brainstorming/Idea Sketch

⬇

Stakeholder Value Map

⬇

Use Case Scenario

⬇

Concept Poster

⬇

Feedback

Developing Creative Confidence in KTC

24% Good at coming up with creative ideas

30% Good at group work

21% Having broader mindset and thinking skills

94% Want to acquire skills for creative thinking

88% Could generate creative ideas & values through human-centered approach

91% Group work was useful for creating appealing values and for expanding ways of thinking for potential ideas
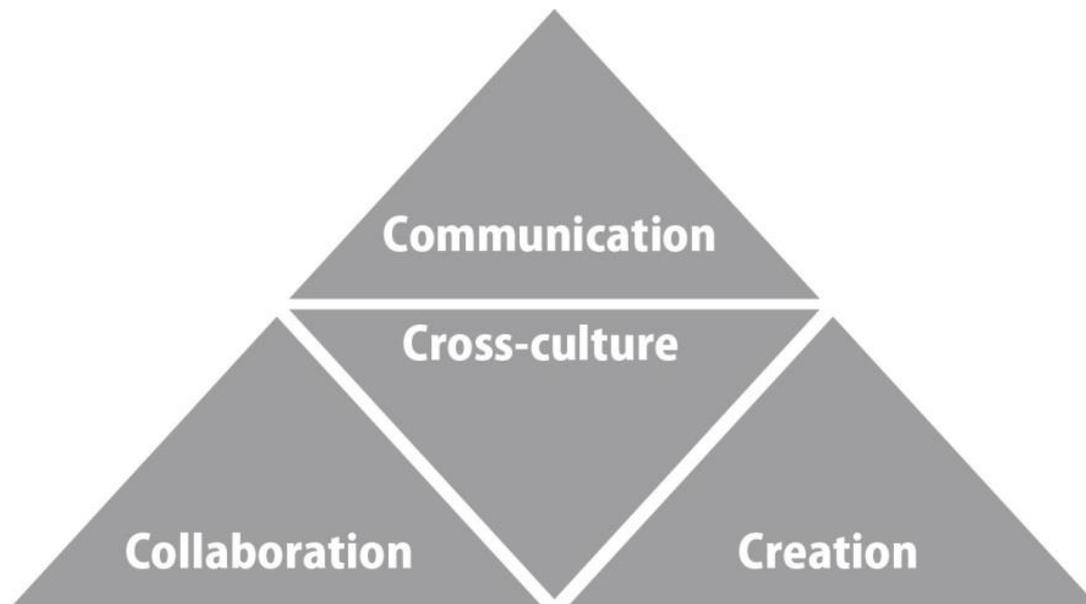
87% Design methods are effective tools for solving problems and finding opportunities
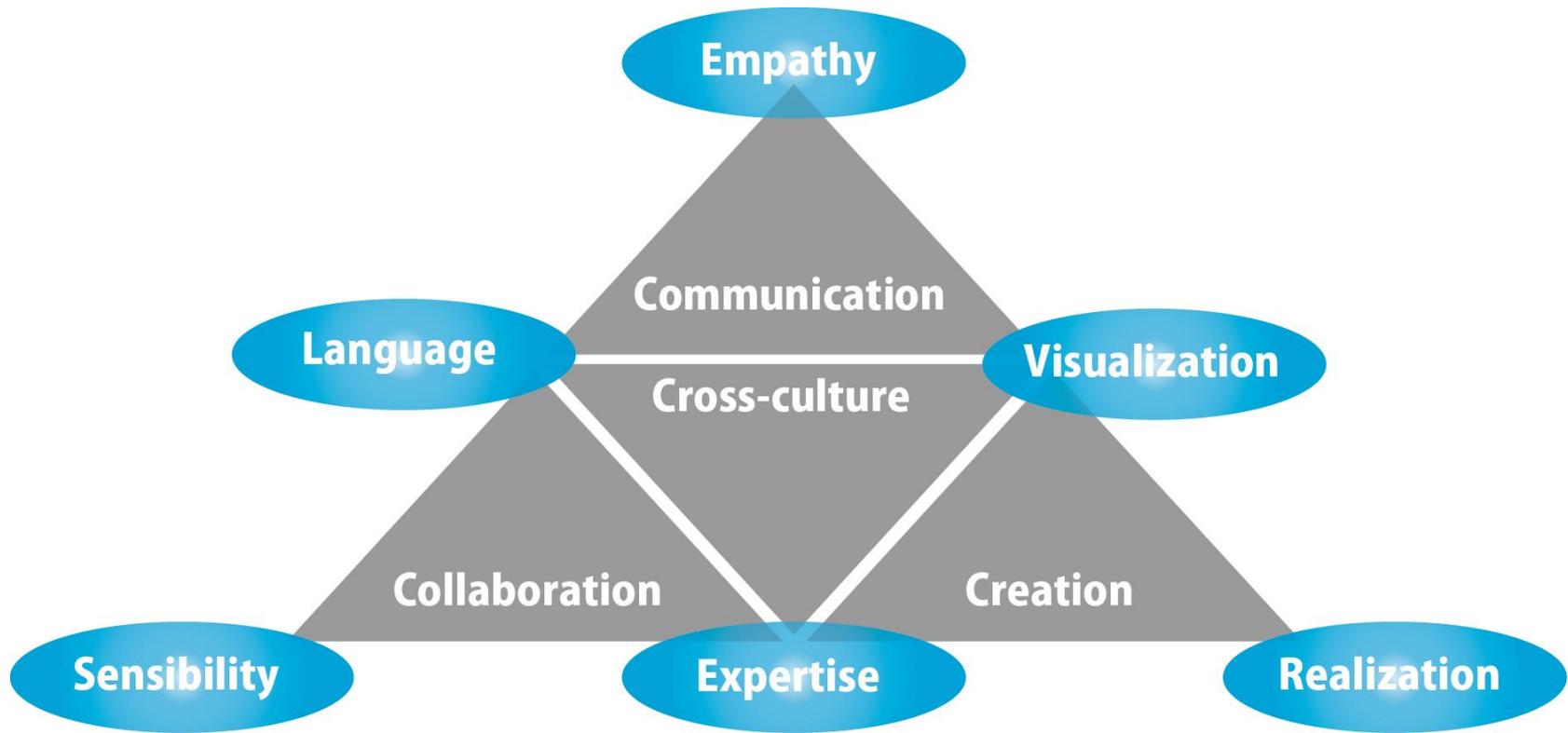
Developing Creative Confidence in KTC

82%

Gained more skills and different ways of thinking for problem-solving compared to before the class

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Developing Creative Confidence in KTC

Developing Creative Confidence in KTC

Design Thinking

Collaborate, Delight, Inspire, and Open your mind!

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