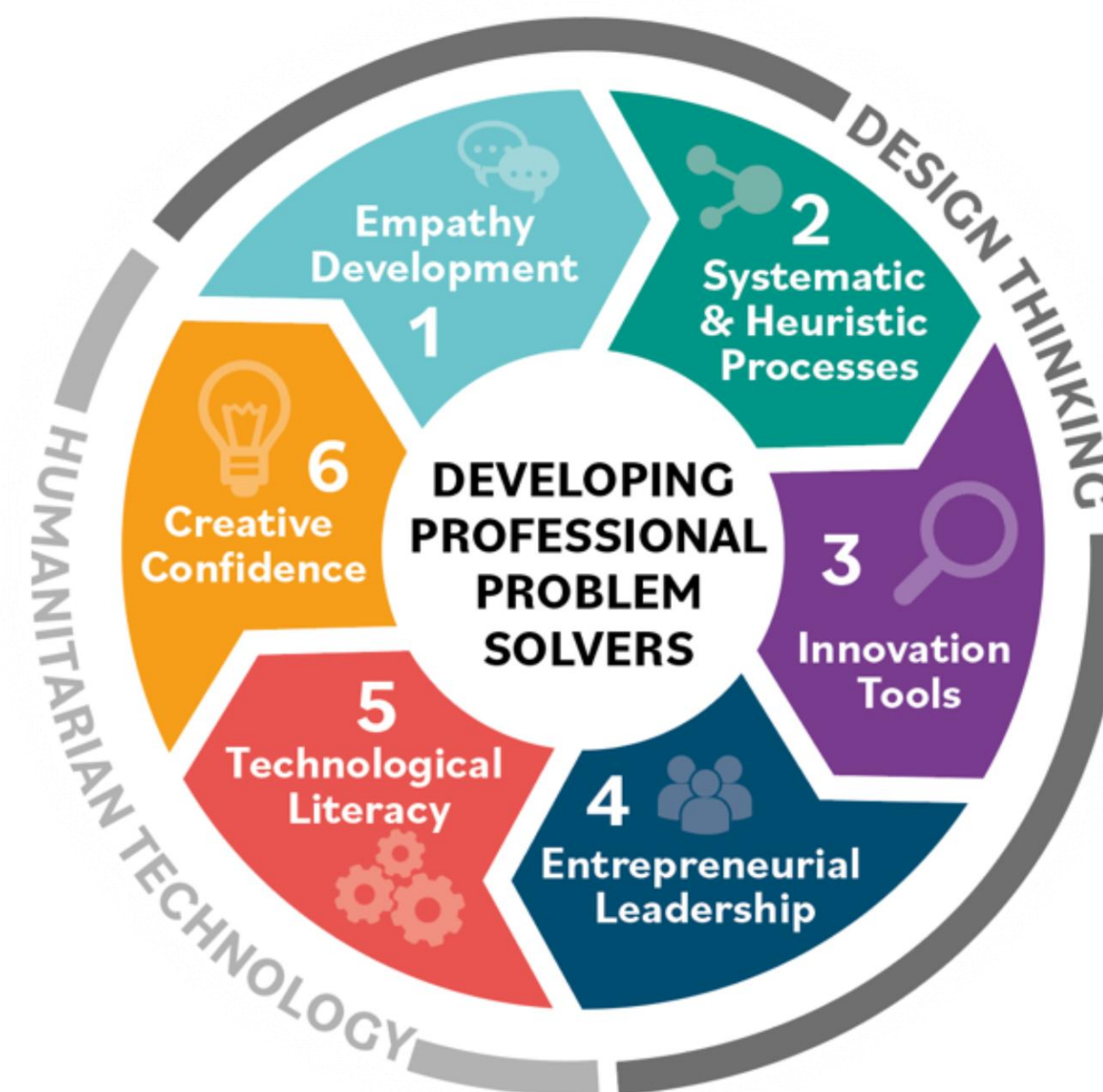
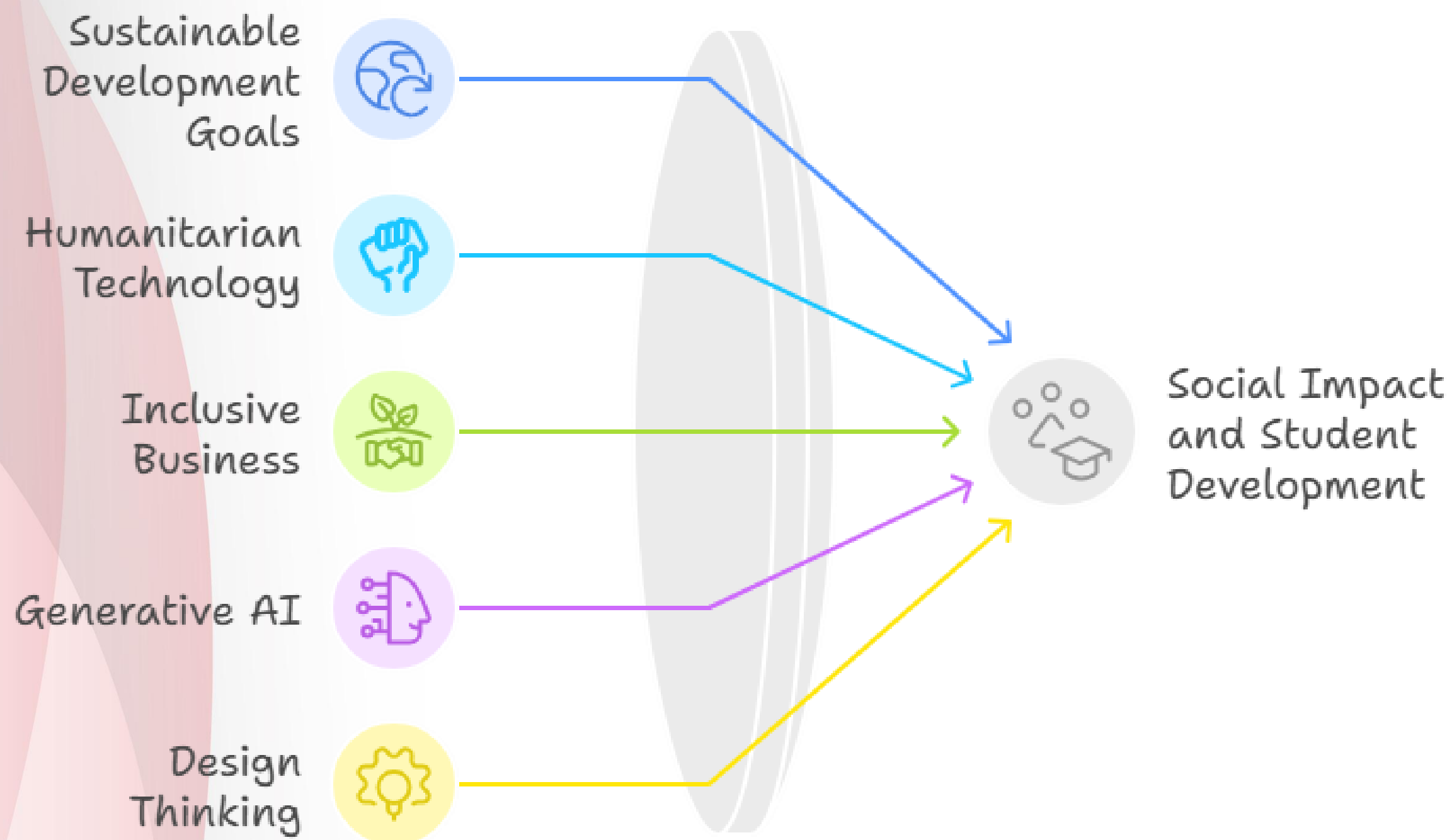


Service-Learning Project Showcases

Office of Service-Learning

Service-Learning @Lingnan University Integrating Innovation for Impact



FITE Project

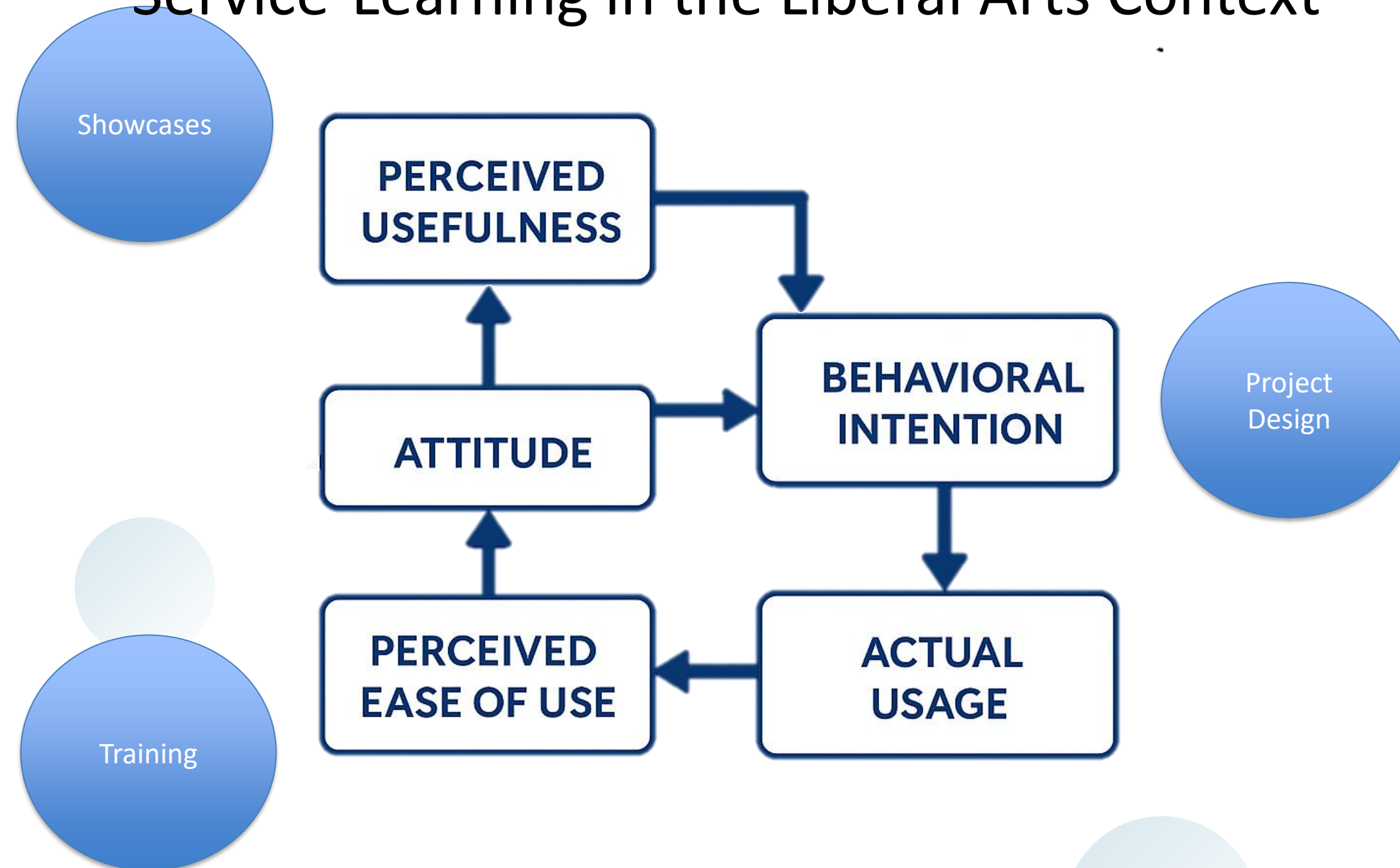
- Fund for Innovative Technology-in-Education 2022-2025

Generative AI for Creative Problem-Solving

Development of Innovative Technology Adoption
Model for Service-Learning in the Liberal Arts Context

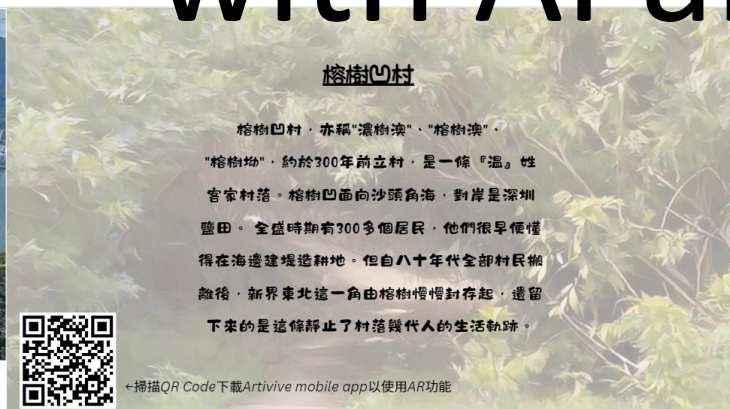
Technology Adoption Model (ATM) (Davis, 1989)

Innovative Technology Adoption Model for
Service-Learning in the Liberal Arts Context



Service-Learning Project Showcases allow stakeholders to gain a deeper understanding of how AI and technology are applied in real-world projects, thereby strengthening their perceived usefulness.

Highlights of S-L Projects with AI and Tech elements



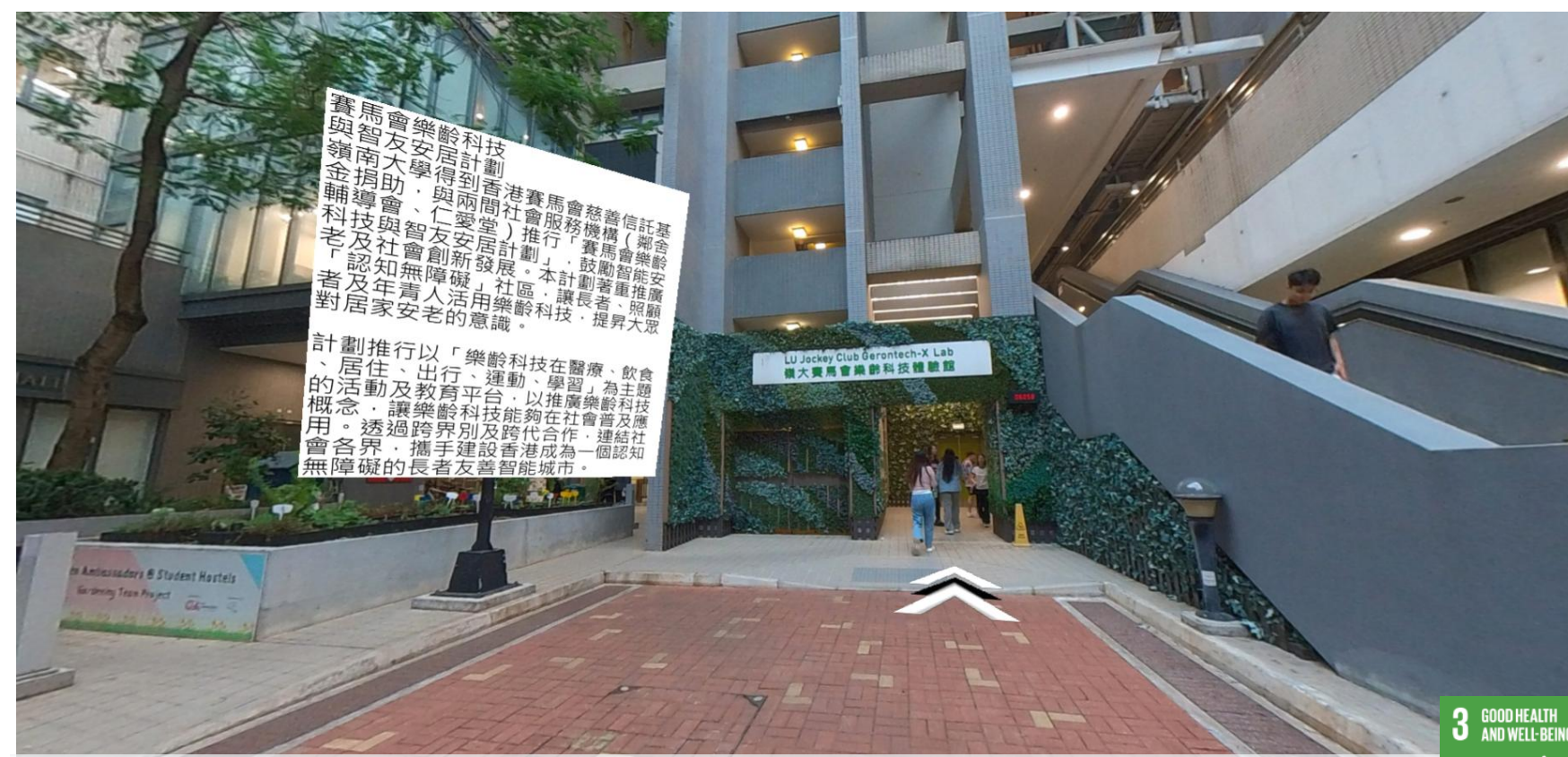
HRM3352 Leadership and Teamwork
Creating AR booklet for rural revitalization



CLE9025 Understanding Life & Happiness
Organizing robotic workshops for kids in the community living room



SOC4328 Ageing, Adaptation and Change
Organizing Laser engraving workshop with Elders with Emigrant Family



SOC3203 Social Gerontology
Creating VR Geronteckology Lab



Highlights of S-L Projects with AI and Tech elements

VISUALIZATION

Improvements (not everything):

- Protection Plates
- Tool Box
- Wheel with lock
- Stabilizing Belt
- Square Bucket



CLD9001 Technology and Culture Change
Redesign the Food Waste Collection Cart to address the stakeholder needs

1 NO POVERTY



SOC3212 Hong Kong Society
Organize the educational activities for the public and subdivided unit residents

3 GOOD HEALTH AND WELL-BEING



HRM3202 Training and Development
Organize the 3D Printing & Engraving Workshop for Elderly

Prototype

Dimensions: 205x74x74mm
Weight: Main unit 690g
Material: PC+ABS, color black, LED light, Magnets
Battery: 2000mAh lithium, Type-C charging, 20 minutes continuous vacuuming
Filter: HEPA II, washable and reusable
Suction Power: 8000Pa, 2 strengths available
Air Purification: Releases 10 million negative ions per second



PSY3103 Psychology of Human Performance and Technology
Design a Humanitarian Innovation to address the needs of residents in subdivided units

Highlights of S-L Projects with AI and Tech elements



SLP1101 Community Engagement through Service-Learning



HSM4002 Health and Social Service Project



HRM3352 Global Leadership Development



CLE9027 Global Impact Project

Highlights of S-L Projects

G32

NON-ELECTRIC GYROSPOON FOR TREMORS

TREMORS SHOULDN'T TURN EVERYONES MEAL INTO A BATTLE

1 What is a Gyrospoon?

For elderly individuals living with hand tremors, even the simple act of bringing a spoon full of food to their mouth is a major struggle. A gyroscopic spoon exists to remedy this struggle.

Unlike regular utensils, gyroscopic spoons (or gyrospoons) are omni-directional, allowing them to adapt their position to match the appropriate centre of gravity, even during low-frequency tremors. This is typically achieved using sophisticated servos and motion sensors built into the spoon, allowing for flexible and effective use.

2 Modern Problems

While existing gyroscopic spoons are effective they have some major downsides such as:

- Pricing ranges from HKD\$800-3000 - Most Senior citizens cannot afford to make such expenses.
- Reliance on batteries which have a low capacity and run out quickly.
- Manufacturing requires a range of specialised components in addition to programming.

3 OUR IDEA

Our goal is to create a cheaper and more accessible alternative to current commercial counterparts. To achieve this we aim to design a new 'smart' spoon that focuses on lighter materials, affordability, and accessibility. We're developing a gyroscopic spoon that can act the same way current commercial ones can without relying on electronics or a heavy price tag.

4 Goals/Achievements

- Ultra-Light Weight - The spoon consists of mainly plastic and other materials, which allow for the spoon to be light enough for easier use, having less strain on the wrist and increases mobility in hand movement.
- Waterproof - Made with materials that can withstand water, it is easy to wash and store making the spoon highly durable and simple to use.
- Affordable - Due to the lack of motor equipment within the spoon, it is immensely affordable and accessible. Keeping the cost low allows for the vulnerable demographic to secure this spoon easily without worrying about the high costs.
- Environmentally Friendly - The spoon is made from recyclable materials which allows for the environment to be protected even with the use of plastic.

Design Ideation

Feature/mechanic design - incorporation of an omni-directional gyroscopic structure built into the spoons scoop.

This design was based on an existing 3D model by Brosky\$WAG106 on thingiverse.com. The design was altered to make it more ergonomic.

This is the 3D concept we designed on Blender, including a modular function to match individual needs.

5 Reflection

Theoretical Phase:

- This product is still in the theoretical stage of development, and further testing is required to determine its viability for implementation.

Lower adaptability & controlled precision compared to electrical servos:

- Unlike electrical servos and detectors, a pure gyroscopic structure relies solely on gravity. This makes it less effective with voluntary motion patterns.
- Electrical servos, use close-loop feedback, detecting precise position offering velocity control, on top of adaptation to individual differences.

Comfortability and possible obstruction when eating:

- The gyroscope itself is built into the spoon, posing obstructive challenges to the user, making it harder to funnel food directly into the users mouth.
- Comparatively, electric spoons use built-in multi-directional servos incorporated in the handle, Leaves the spoon end completely normal.



Allowing myself to further explore **new skills**, such as 3D modelling, and finding meaningful ways to apply them within my major. (From a PSY major student)

In addition to conducting interviews with the elderly, we use AI to **identify product weaknesses** and **focus on improving those areas** instead of redesigning the entire product. (From a PSY major student)



PSY3103 Psychology of Human Performance and Technology

Highlights of S-L Projects

G26

CLE9023 Service leadership

Enhancing Digital Literacy Among Older Adults and Youth

Enhancing Digital Literacy Among Older Adults and Youth

through 3D Printing and Laser Engraving

through 3D Printing and Laser Engraving

What is our goal?

- To introduce older adults and youth to basic concepts of 3D printing, laser engraving, and digital technology in an accessible and supportive learning environment.
- To enhance older adults and youths' digital literacy, confidence, and creativity through hands-on technology workshops and guided practice.

March 11 3D Printing Workshop for Beginners	March 18 33D Printing Workshop	March 19 Laser Engraving: Wooden Door Plate Design Workshop	March 25 3D Printing Puzzle Workshop: Learning Bambu Studio	April 1 3D Printing & Creative Life: Tangram Workshop	April 2 Easter Egg Keychains: Laser Base & Hand-painted Finish Achievements & Reflections	April 8 Laser-Carved nameplates	April 9 DIY Fortune Seal 3D Printed For Your Daily Pouch	April 15 Laser-Carved Leaf Art Workshop	April 16 Laser-Carved Wooden Coaster Workshop
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Reflections and Improvements:

Participating in the extracurricular activities that guided the elderly in learning how to operate 3D printers and laser engraving machines has given me a lot of benefits. When dealing with the precise and complex equipment, I explained the principles and disassembly steps in an easy-to-understand way, patiently answered their questions, and through repeated communication and demonstrations, helped the elderly gradually master the basic operations.

The seniors' attitude of diligent study and active experimentation deeply touched me. When they completed their creative works by themselves, the sense of achievement on their faces made me truly feel the significance of technological inclusiveness. This practical experience not only enhanced my communication skills and sense of responsibility, but also made me understand the value of technology serving society. By using knowledge to build a bridge for the elders to access new technologies and by patiently spreading warmth, it is both a form of dedication and a process of growth.

Gains:

Improvement in intergenerational communication and teaching skills: I deeply realized that when teaching new technologies to elderly people without a professional background, the key lies in "translation" and "connection". I learned to avoid using technical terms and instead use life-like analogies (such as "laser is like a more precise and obedient engraving knife"), physical demonstrations, and step-by-step slow explanations. Patience, encouragement, and affirmation of their every attempt are more important than simply imparting knowledge itself.

Reflections and Improvements:

The laser engraving equipment was not fully and completely pre-tested before the 3.19 event, resulting in multiple engraving failures during the actual operation. This not only disrupted the original process, delayed the overall time, but also exposed the preparation work's shortcomings in front of the participants, affecting the professional image of the team. Before the next event, at least reserve half a day for a dedicated person to complete equipment calibration, test different parameters for engraving, and test the compatibility of materials, and record the optimal parameter combination for direct use during the event.

Gains:

I learned that hands-on practice and one-on-one guidance are essential when teaching elderly learners. Instead of focusing on theory, I focused on letting participants try the software themselves, with step-by-step support from our team. Patience, clear instructions, and celebrating small achievements (like successfully clicking the slice button) proved more important than perfect technical execution. Seeing participants' confidence grow when they held their finished puzzle or coaster was the most rewarding part.

Reflections and Improvements:

The laser crafting workshop highlighted the importance of thorough equipment preparation. To ensure a smoother experience in all future workshops, I allocated time before sessions to calibrate equipment, test material compatibility, and record optimal settings. For the 3D printing workshop, I also planned to introduce other simple design tools like Tinkercad or AI-based model generators to give participants more creative ownership. We also collected feedback through questionnaires to understand what participants wanted to learn more about the technology. Based on their input, we will incorporate these topics into the respective sessions.

Gains:

1. I deeply realized that the core of service leadership is "putting students first", not just leading them. A good leader should be a good servant first.

2. By organizing the two activities (Tangram and Lithography), making PPTs, and explaining rules and operation points, I improved my organizational and expression skills.

3. When guiding students to cooperate and answering their questions on site, I understood service leadership better and learned to listen actively and respond in time.

Reflections and Improvements:

1. I didn't control the on-site rhythm well in some parts. Later, I need to arrange time properly and leave some flexible time to deal with unexpected situations.

2. I didn't pay attention to individual students' needs in time. In the future, I will observe more on site, take the initiative to ask about their needs and help them in time.

In conclusion, hosting the two activities helped me practice the concept of Service Leadership and improve my organizational and communication skills. By reflecting on my shortcomings, I found the direction to improve. In the future, I will keep "serving students" as the core, improve my abilities, pass on the concept of service leadership, help students gain growth through experience, and continuously improve my leadership and service skills.



I learned three main things. First, patience. One learner asked me the same question five times. I explained it five times without getting angry. In the end, she got it. Second, communication. I stopped using technical words. I used simple language and pictures. A 74-year-old learner followed my pictures and made a coaster. Third, problem-solving. A colour-blind learner could not tell red and green apart. I used shape and position instead of colours. He understood. In short, I learned patience, clear communication, and quick problem-solving. These are skills I cannot learn from a textbook. (From a ACG major student)

First, use generative AI to simplify technical terms into everyday language for elderly learners. Second, let AI create step-by-step picture guides to save preparation time. (From a TCC major student)



CLE9023 Service Leadership

Highlights of S-L Projects

HSM 4002 Health and Social Services Project

AI LITERACY WORKSHOP

St. James' Settlement Project Care Neighbourhood Elderly Centre

Workshop Background & Objective

The AI Literacy workshop aims 1) to enhance participants' basic understanding of AI technology and its practical application in daily life;
2) To cultivate the hands-on functions of using AI assistants safely and effectively;
3) To build awareness of potential AI-related risks, including misinformation and fraud, thereby developing critical evaluation skills and confidence in the independent AI usage.

Workshop Content

Part 1: Concept of AI & Dola
Part 2: Core functions of Dola
• Voice & text input techniques
• AI Phone Call
• Photo inquiry
• Generating Images & Videos

Part 3: Risk awareness
• Misinformation & Fraud
• Deepfake videos & voice manipulation

Part 4: Interactive quiz

Workshop Achievements

82 seniors sign up for this AI literacy workshop, high demand for Digital Literacy. Introduce a practical AI Assistant (Dola) to 15 elderly participants for their daily life, including health information, entertainment, and fraud prevention.

- Perceived Usefulness of AI: 66.7% → 73.3%
- Perceived Importance of AI Literacy Workshop: 73.3% → 93.3%
- Perceived Self-efficacy in : 73.3%
- Workshop Effectiveness: 93.3% Satisfied & Very Satisfied

Workshop Reflection

- Ground workshops in practical daily-life applications, risk management, and health assistance, focusing on reliable tools and clearly differentiating between information and diagnosis.
- Embed critical thinking and credibility assessment into every session using simple frameworks and comparative exercises.
- Formalize the workshop structure to be explicitly systematic and teacher-led, with a clear separation of theory, demonstration, and guided practice, as this is now the preferred learning style.

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We introduce the practical Dola AI assistant (for health, entertainment, and fraud prevention) produced measurable gains: perceived usefulness of AI rose from 66.7% to 73.3%, and perceived importance of AI literacy workshops jumped from 73.3% to 93.3%, while workshop effectiveness hit 93.3% satisfaction. This showed me that hands-on, relatable tools build self-efficacy (73.3% reported) far better than abstract concepts. (From a HSM major student)

Throughout my service-learning project, I encountered several challenges that generative AI tools could effectively address. (From a HSM major student)



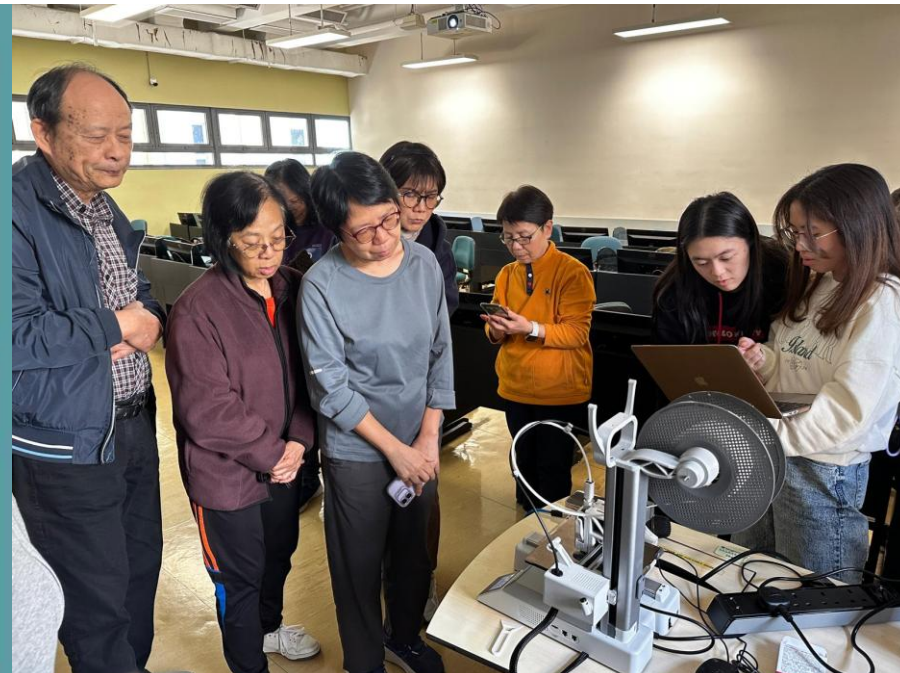
HSM4002 Health and Social Service Project



DIGITAL CATALYST: AI & FABRICATION SKILL TRANSFER HRM3202 GLOBAL TALENT MANAGEMENT

PROJECT INTRODUCTION

- Agency: The Jockey Club Cadenza
- Enhance participants' knowledge of Generative AI
- Demonstrate the procedure of 3D printing and laser engraving
- Transfer staff's practical and technological skills in organizing activities for elderly in the future



ACHIEVEMENT & REFLECTIONS

During the workshops, participants:

- Learned the basic AI skills on writing prompt
- Practiced using Generative AI to organise information, generate drafts, powerpoints and images
- Created their own 3D models and learned to use the 3D printing and laser engraving machines

The service learning workshop has strengthened our communication and problem-solving skills. Through interacting with the participants and staffs, we have known more about the 50+ community and their actual needs.



GROUP MEMBERS:
CHOW WING CHI 4458334
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LIN YUEN MAU 4023634
DING ZIWEN 4071552



Learn to work with other, organize workshops and activities. (From a HRE major student)

Learn to use the 3D printing machine and laser engraving machine as I had never used them before the service. (From a HRE major student)



HRM3202 Global Talent Management



Highlights of S-L Projects

ACTIVE AGING: MICRO:BIT CODING WORKSHOPS G34

COURSE: POSITIVE PSYCHOLOGY

INTRODUCTION: THIS SERVICE-LEARNING PROJECT INTRODUCED ELDERLY PARTICIPANTS TO BASIC CODING AND INTERACTIVE TECHNOLOGY THROUGH MICRO:BIT ACTIVITIES. OVER FIVE SESSIONS, PARTICIPANTS LEARNED MICRO:BIT FUNCTIONS, SOUND AND INTERACTION FEATURES, SMART CAR MOVEMENT CODING, AND CAPTURE-THE-FLAG CAR PROGRAMMING. THE PROJECT AIMED TO MAKE TECHNOLOGY LEARNING ENJOYABLE, ACCESSIBLE, AND MEANINGFUL WHILE ENCOURAGING CONFIDENCE, PARTICIPATION, AND SOCIAL INTERACTION.

SESSION 1: BREAKING THE ICE WITH MICRO:BIT

SESSION 2: EXPLORING SOUND AND INTERACTION

SESSION 3 — TEAMWORK IN SMART CAR CODING

SESSION 4: BUILDING THE CAPTURE-THE-FLAG CAR

SESSION 5: REVIEWING, PLAYING, AND SHARING

ACHIEVEMENTS
PARTICIPANTS LEARNED BASIC MICRO:BIT KNOWLEDGE STEP BY STEP, FROM SIMPLE INTERACTION TO SMART CAR CODING ACTIVITIES.

REFLECTIONS
WE LEARNED THE IMPORTANCE OF PATIENCE, EMPATHY, AND CLEAR COMMUNICATION WHEN TEACHING ELDERLY PARTICIPANTS. THIS PROJECT SHOWED US THAT ENJOYABLE AND SUPPORTIVE LEARNING EXPERIENCES CAN STRENGTHEN BOTH CONFIDENCE AND SOCIAL CONNECTION.

GROUP MEMBERS
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YAN Ziqiao 4183927
Zhou jingjing 4163537

3 GOOD HEALTH AND WELL-BEING

PSY3103 Psychology of Human Performance and Technology

Humanitarian Engineering Solutions for Age-Friendly Living G30

Summary

- S-L project explored the daily needs of older adults and the role of design in supporting age-friendly living.
- Through site visits, service practice, product design training, and experiential learning, we gained a better understanding of elderly services, ageing-related difficulties, and elderly-friendly technologies.
- These experiences helped us connect real-life observations with design thinking and develop a more empathetic understanding of older adults' physical, cognitive, and social needs.

Achievements

- Successfully engaged elderly residents in a meaningful hands-on workshop, encouraging interaction and active participation.
- Developed a stronger sense of empathy by experiencing age-related physical and sensory limitations firsthand.
- Applied what we learned from field visits and training to better understand how design can respond to the real needs of older adults.

Aim

- Identifying elderly needs
- Optimizing machine design for humans
- Engineering innovations for elderly

S-L activities

- Guided Tour in Caritas Today Club Resource and Support Centre for Carers
- Service Practicum: Workshop for Elderly Living in Forward Living
- Product Design Training
- Guided VR Tour in Elderly Resource Centre

Reflections

- Experiencing restricted mobility helped us realize that ageing can greatly affect independence in daily life, especially in task performance.
- This experience strengthened our empathy and showed us that direct participation can lead to deeper understanding than observation alone.
- Elderly-friendly design should address not only physical safety, but also cognitive accessibility and ease of use.
- Observing the needs of older adults made us reflect on how thoughtful products can improve the quality of life.

PRODUCT DESIGN

Challenge

- The dump might not be able to hold heavier or oddly-shaped items freely.
- Unknown winding motion might cause the product to fail.

Solution

- Use replaceable silicone dunks that can be changed according to time used and shape of items.
- Use lighter materials in the whole design to prevent serious collision.

To Hei Wing 4591370
Pang Ming Hei 4591265
Mong Wing Yan 4287125
Mung Shi Yuen 4806361
Law Tsz Wan 4192772

All declaration: DeepSeek, Doubao were used to generate product images and brief ideas of the challenges.

PSY3103 Psychology of Human Performance and Technology

CLA9021 Inn&EntrepGlobGrandChallenges G24

INCUBIA (BABY INCUBATOR V4.0)

Project **DEPLOY:** Deploying & Evaluating Portable Life-Saving Outcomes for Young Infants

PROBLEM STATEMENT
Vulnerable newborns on Tingloy face significant health risks due to a critical shortage of essential neonatal equipment, most notably life-saving incubators.

PROPOSED SOLUTION
Our goal is to deploy **portable incubators** that meet the specific needs of rural and underserved communities. By focusing on **easy-to-use technology**, we can improve newborn survival rates across Tingloy and beyond.

ACHIEVEMENT

- Demonstrated the baby incubator to health workers in Tingloy
- Operated functional testings for baby incubator(V 4.0)
- Developed the prototype of baby incubator(V 4.1)

METHODOLOGY

Data Collection: FGD with stakeholders

Data Analysis

Product Development

CHALLENGES

- Safety lock is difficult to operate
- Short battery longevity
- Cannot reach set temperature
- Chamber cannot be completely sealed
- Too wide and not fit for motorbike

PERFORMANCE DATA ANALYSIS

REFLECTION
We learned the importance of **EMPATHY**, putting ourselves in others' shoes & thinking carefully about **what users actually need**.

NEW FEATURES of V 4.1

- Strap attached to the leather concave cover
- Acrylic cover for all ports
- Plastic zipper
- TPU chamber cover (Velcro and magnet)
- Extra TPU chamber cover
- Optimized battery life (4 hours)
- Bag strap for carrying the baby incubator
- Improved lock mechanism for easy unlocking
- Additional alarms for abnormal HR and O2 Sat.

Leung Chun Man(4675205)
Rinchen Chazon(4653075)
Wong Suet Yee(4183549)
Yip Ka Kit(4167923)

3 GOOD HEALTH AND WELL-BEING

CLA9021 Innovation and Entrepreneurship for Global Grand Challenges

Alternative Water Source in Tingloy, Philippines G25

CLA9021: Innovation and Entrepreneurship for Global Grand Challenges
Special Thanks To Friends in BSU

Background
Project Water 2.0 addresses water scarcity in Tingloy. Through community knowledge and first-hand data, our solution is to design a rainwater harvesting system.

Prototyping
Our scalable Rainwater Harvesting System:
Rain – Roof Catchment – 2 Flush Diverters – Filter 1 – Filter 2 – Storage Tank

Local Validation
Engaging 13 local users to incorporate everyday practices and feedback into product refinement.

Sustainable Future
Tested data from 9 water sources and stakeholder insights for future community projects. We turn limitations of time, materials and knowledge into actionable procedures.

Our Word
Locally sourced rainwater harvesting is capable of strengthening local resilience and self-sufficiency. By relying on their own water resources, the community can reduce dependence on buying water, manage resources sustainably, and maintain access even in challenging conditions.

Wong King Seng 4070200 Hsu El Chan Hsue 4178178 Gao Weirong 4177927 Yip Kaedrew Kai Chun 4807118 conk cfa Right 4805460

4 QUALITY EDUCATION

3 GOOD HEALTH AND WELL-BEING

PSY3301 Positive Psychology and Positive Living

Winter Academy (Philippines)

Project WATER (Rainwater Harvesting)



Winter Academy (Philippines)

Project DEPLOY (Baby Incubator)

CLA9021 Inn&EntrepGlobGrandChallenges

INCUVIA (BABY INCUBATOR V4.0)

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CHALLENGES

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- Chamber cannot be completely sealed
- Too wide and not fit for motorbike

PERFORMANCE DATA ANALYSIS

The Target temperature is 37.0°C (blue line). The Body temperature (green line) closely follows it with slight fluctuations. The Chamber temperature (red line) consistently stays below the target.

REFLECTION

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NEW FEATURES of V 4.1

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HUMANITARIAN TECHNOLOGY



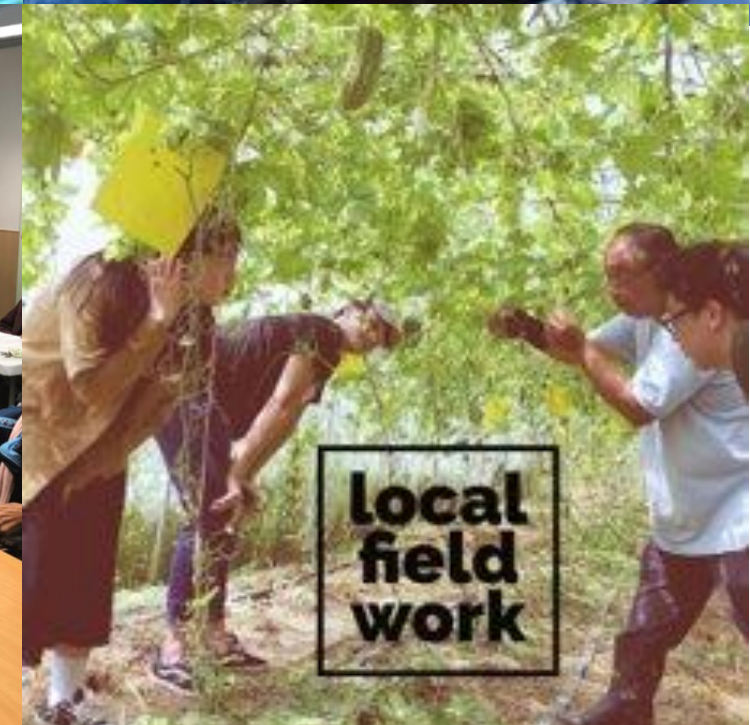
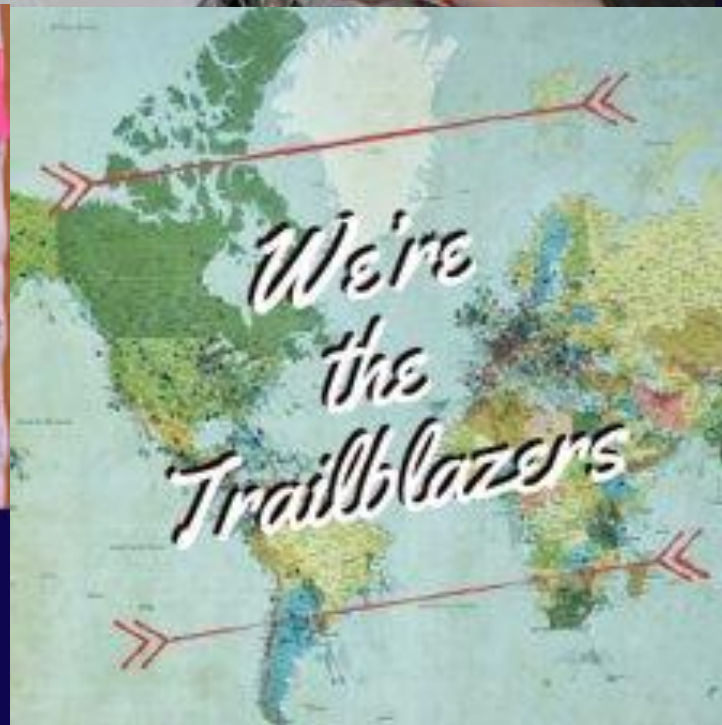
without innovation
we cannot
advance



#underwater
#robotics



Design Thinking
FAIL OFTEN SO YOU CAN
SUCCEED SOONER
TOM KELLEY



local
field
work



#BRAINSTORMING



#empathy



INCLUSIVE
ENTREPRENEURSHIP



SUSTAINABLE DEVELOPMENT GOALS



Evaluation





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Thank You!



Q & A