When Futures Meets Engineering: Pedagogical Journey and Learning

Mei-Mei Song, EdD
Graduate Institute of Futures Studies, Tamkang University

Shang-Hsien Hsieh, PhD
Department of Civil Engineering, National Taiwan University

Course Background
Three-Year Project

- Year 1: Hello, you!
- Year 2: Let’s go!
- Year 3: Let’s tweak.
2nd and 3rd years

Theme: Revitalization of an old community in Taipei with visions for the future

Case: Nanjichang (Southern Airport) community

- Constructed 50 years ago
- Aging population
- Underprivileged families
- New immigrants
Tweaking…

Professional groups

3-day futures workshop
Conceptual Design in Civil Engineering

Course Designs & Implementation
Course objectives

Interdisciplinary Teamwork

Emerging Technologies

Problems Solving

Creative Thinking

Futures Thinking

Five stages

Stage I: Pre-course Workshop (Three days)
Outcome: interdisciplinary teams building

Stage II: Community Scanning (Week 1-3)
Outcome: scanning report

Stage III: Site Selection (Week 4-6)
Outcome: professional groups’ analysis report

Stage VI: Building Project Planning (Week 7-9)
Outcome: mid-term report

Stage V: Design Proposal (Week 10-15)
Outcome: building project proposal (final report)
Pre-course workshop

- Futures thinking workshop

- Community observation

- Design & prototyping
Professional & project groups

Professional groups

Pedagogical Learning
Application of Futures Thinking

From the Perspective of Futures Education

- Teach engineering students to think differently?
- How to enhance futures thinking?
  - Speaking the same language?
  - Integration of engineering curriculum and futures thinking
  - Experiential futures
14.6.2017

M HKA

Antwerp

DDT
Conclusion

Results after course

Interdisciplinary Teamwork

Emerging Technologies

Problems Solving

Creative Thinking

Futures Thinking
THANK YOU!
song@mail.tku.edu.tw