

HOW:

Educate to Innovate

***Transition from Education 1.0 to 4.0
Case Study of Chula Engineering***

Supavadee Aramvith, Ph.D.
Associate Professor in Electrical
Faculty of Engineering
Chulalongkorn University, Thailand
Supavadee.A@chula.ac.th



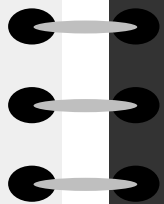
- The oldest university in Thailand (founded 1917)
- Public and autonomous research university
- 19 faculties/23 colleges and research institutions
- Over 38,000 students

CU Vision

9/09/2017

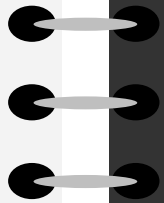
“World class national university that generates knowledge and innovation necessary for the creative and sustainable transformation of Thai society”

1



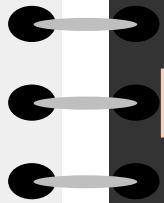
Human Capital

2



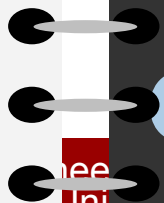
Knowledge & Innovation

3



Local Transformation

4



Global Benchmarking



Learning Innovation for ALL

Impact #1 **Next Generation of Learning**

Teaching Techniques

Research Grants

Authentic Assessment & Evaluation

Community & Global Network

Impact #2 **Digital Learning Experiences**

Smart & Interactive Classroom

Media, Instructional Technology & VDO

e-Learning & LMS across campus

Big data, Business Intelligence & Stats

Impact #3 **University Anywhere Anytime**

Open Education Resource (OER)

Massive Open Online Courses (MOOCs)

Nano & Micro degree, Certifications, etc.

Virtual University



Summary: CU LIC Strategy = LILLE

- **On Campus Transformation** through
 - Active Learning Grants
 - Local and Global network of Teachers, Innovators, and Learners
 - New and extensive use of Learning spaces
- **Online Platform for ALL** through
 - Online (VDO) Library
 - Online Courses to Publics or MOOCs
 - Digital learning experiences by homegrown Online Lecture platform

Our Goals are:

1. Support “Next Generation of Learning” within HE ecosystem
2. Enable “Digital Learning Experiences” within Chulalongkorn University
3. Provide “University Anywhere Anytime” for Thailand and ALL

Education 1.0 Traditional learning

Education 2.0 + E Learning

Education 3.0 + Knowledge creation

Education 4.0 + Innovation



The way things were...

Knowledge

then

Skills

and some

Attitude

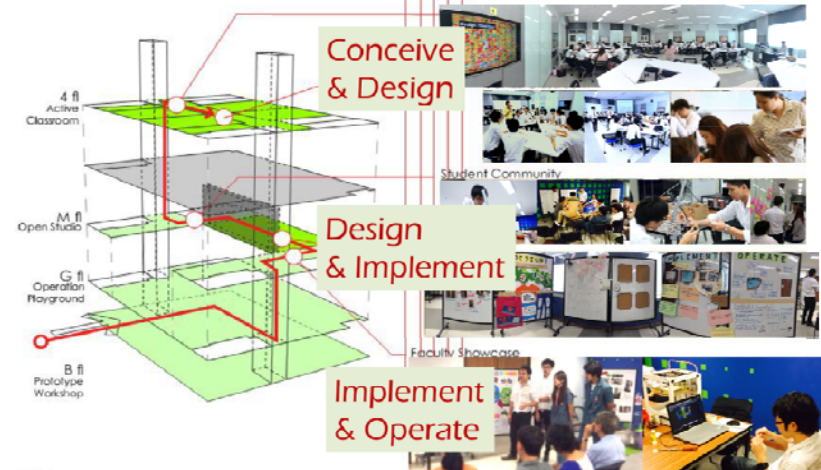
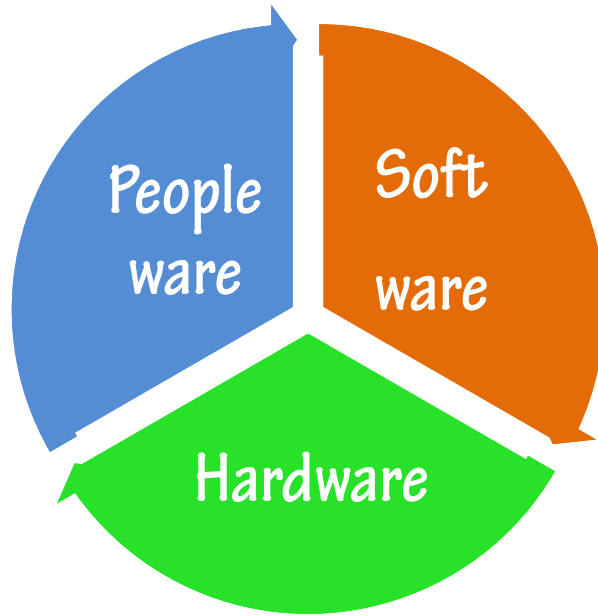


The way to go...
flip!

one thing
to rule them all...

Attitude

HOW Exactly: *3-Prong Approach*



Efficient Graduate: *Conceive-Design-Implement-Operate*

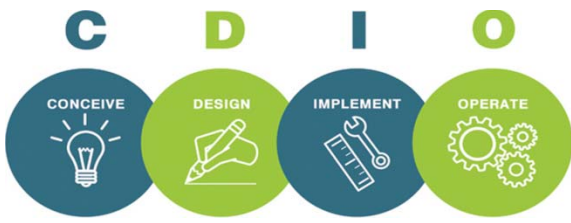


Jigsaw technique

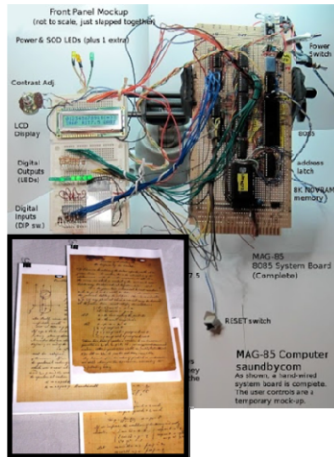


PEOPLEWARE

CDIO Framework (Conceive-Design-Implement-Operate)



Knowledge



(...Then)



“Big world atmosphere”

- less **content** coverage
- Real world **context**
- Big world **atmosphere**
- Same paper exam
- Comparable results

✓ **Disciplinary**

Knowledge

SOFTWARE

ACTIVE LEARNING

- Concept Inventory
- Small group activities
 - one-minute paper
 - think-pair-share.
- Flipped classroom

C) Lecturer to review task

D) Lecturer to provide
In-class activities.

Pre-class Task =
Evidence of their preparation
+
Indicator of level of understanding

Active Learning
Experiential Learning
• Discussion
• Experiment/Projects
Towards higher-level cognition

Task assessed. Issue identified.

Experiential Engagement



In class



Jigsaw technique

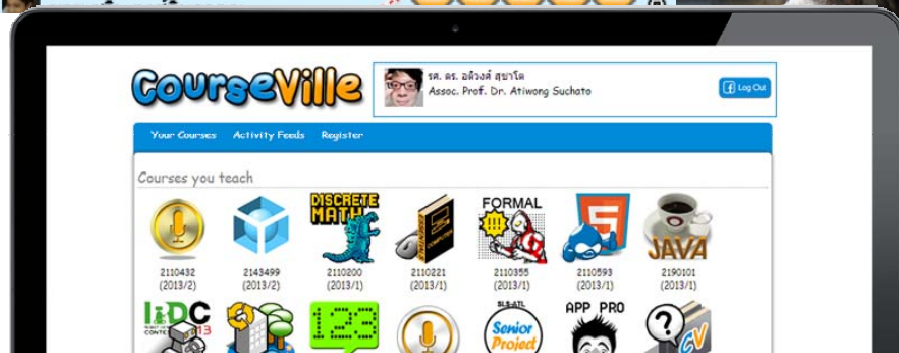
COURSEVILLE – the social LMS

Assignment 2: การสำรวจความก้าวหน้าระบบคอมพิวเตอร์ ที่ใช้ Speech
ป้อนในปัจจุบัน ?

Name	Grade	Assignment
นาย ฤกษ์ 7	3	★ ★ ★ ★ ★
น.ส. สุวิชา เหมรัตนธ		★ ★ ★ ★ ★
นางสาว กมลลักษณ์ สุขเสน		★ ★ ★ ★ ★
นาย กรกฎ ศิรินาม		★ ★ ★ ★ ★
นางสาว กรกนก ขาวฮาไฟ		★ ★ ★ ★ ★
นาย คณตม์ บุญกลิ่นขจร		★ ★ ★ ★ ★
นาย ชวิน บุญนาสุขสกุล		★ ★ ★ ★ ★

I AM DIGITAL
NATIVE

- Around-the-clock access
- Instant feedback
- Social network



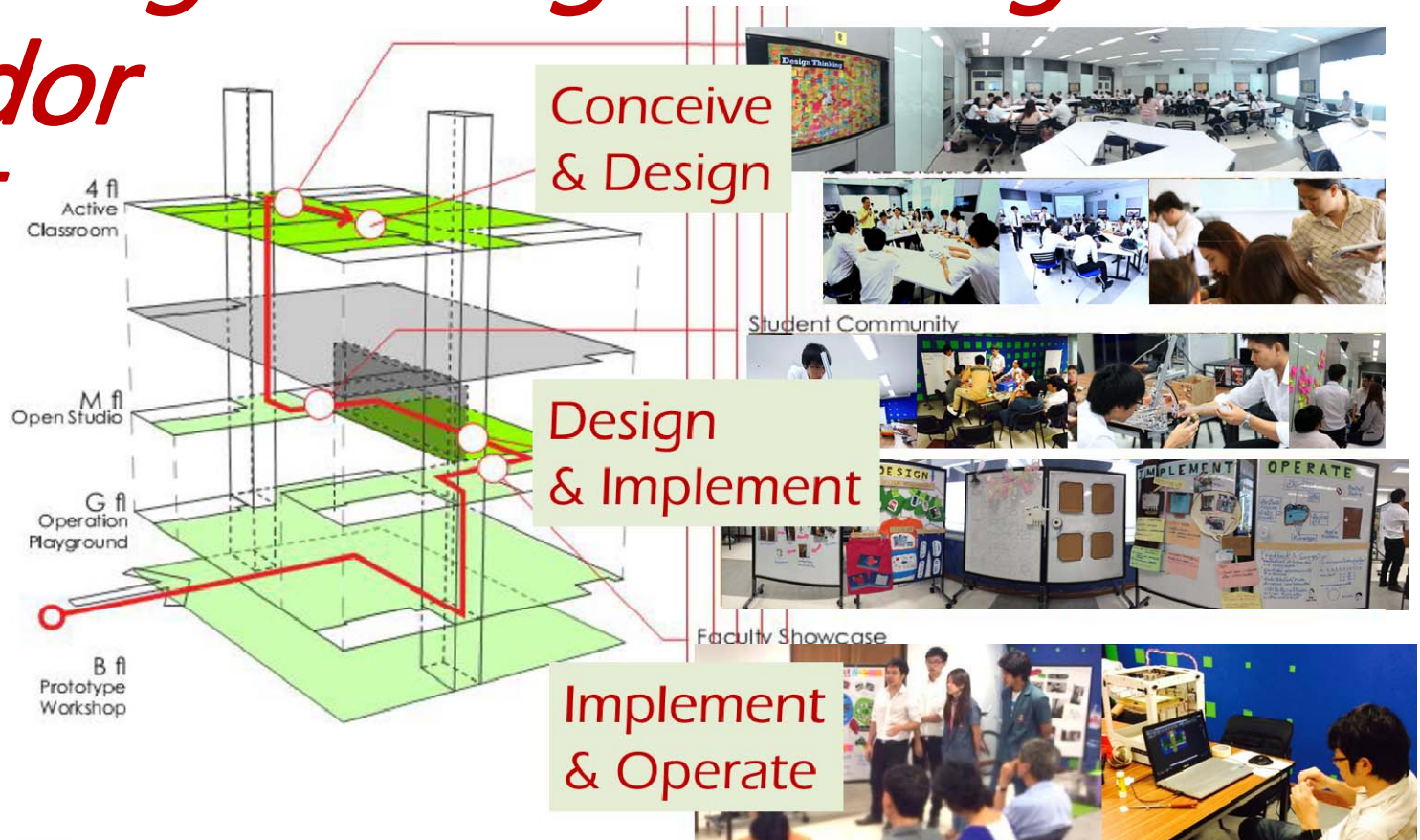
www.mycourseville.cc

HARDWARE

Chula Engineering Learning

Corridor

iDW



Efficient Graduate: *Conceive-Design-Implement-Operate*

HARDWARE

A) *iSCALE* (i-Student-Centered-Active- Experiences)



HARDWARE

**Mantra of the Innovators:
*Fail early, Fail often***

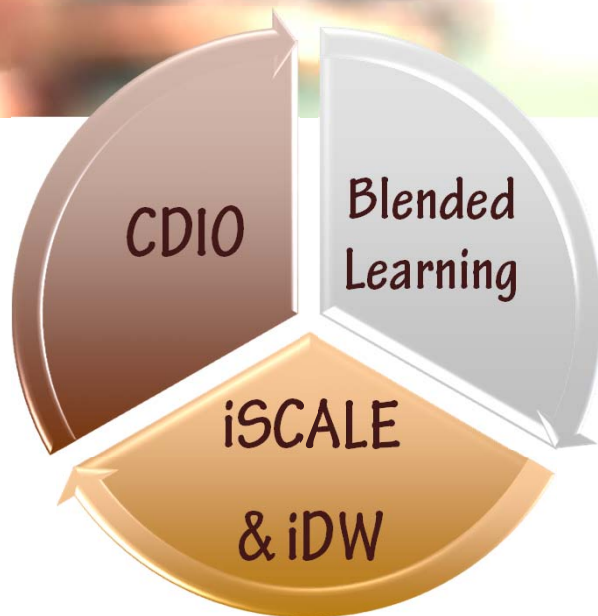


**Mantra of the i-DW:
*Failing with styles***

HARDWARE

B) *iDesignWorkspace* Quick realization of student's DREAM Prompt self FEEDBACK & LEARNING





CDIO framework

Thinking behind innovation

Blended Learning

Delivery of Knowledge, Skills
& Attitude – Think like an engineer

iSCALE & iDesignWorkspace

Maker's space – Failing with styles

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