

connecting credentials

MOVING HIGHER EDUCATION to a LIFELONG LEARNING PARADIGM

Expert Group meeting on Interregional Credit Transfer Mechanisms and Learning Outcome
Systems; Lyon, France
November 5, 2019

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Senior Vice President for Academic Affairs
King Mongkut's University of Technology Thonburi



DIGITAL ERA

THE
EDUCATIONAL QUALITY
THAT MATTER IS
LEARNING

the
WORLD
in
Flux

$B) + n(C) - n(B \cap C)$

002602
1.989769
1.948

“LEARNING OUTCOMES”

evidence of learning ...



What must my students know and be able to do
by the end of this course/programme ?

it's time to
BE-VISION

— not —
REVISION



Intellectual

LEARN
to KNOW

EFFICIENCY
and
PRODUCTIVITY

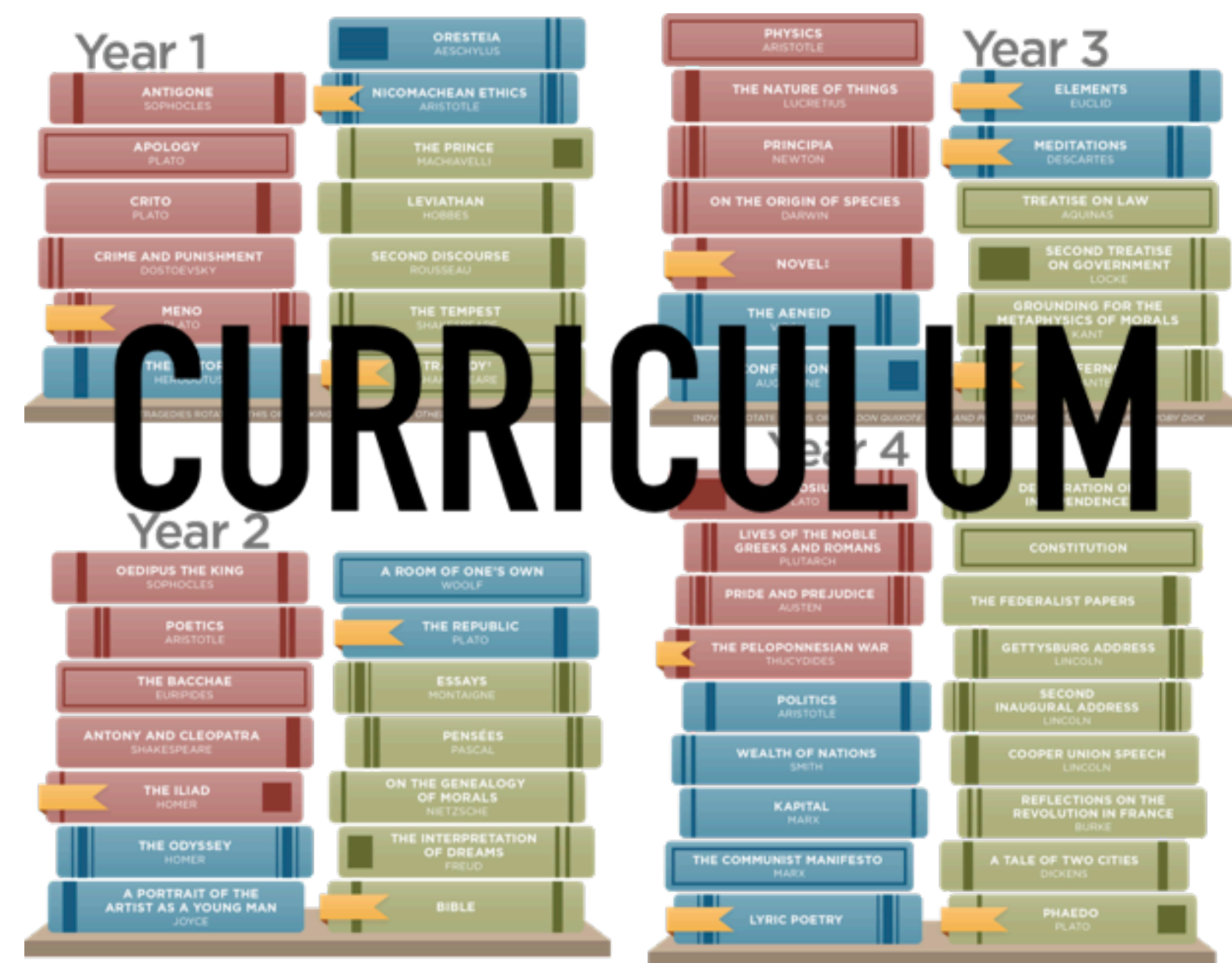
↑
KNOWN

↓
INFORMATION

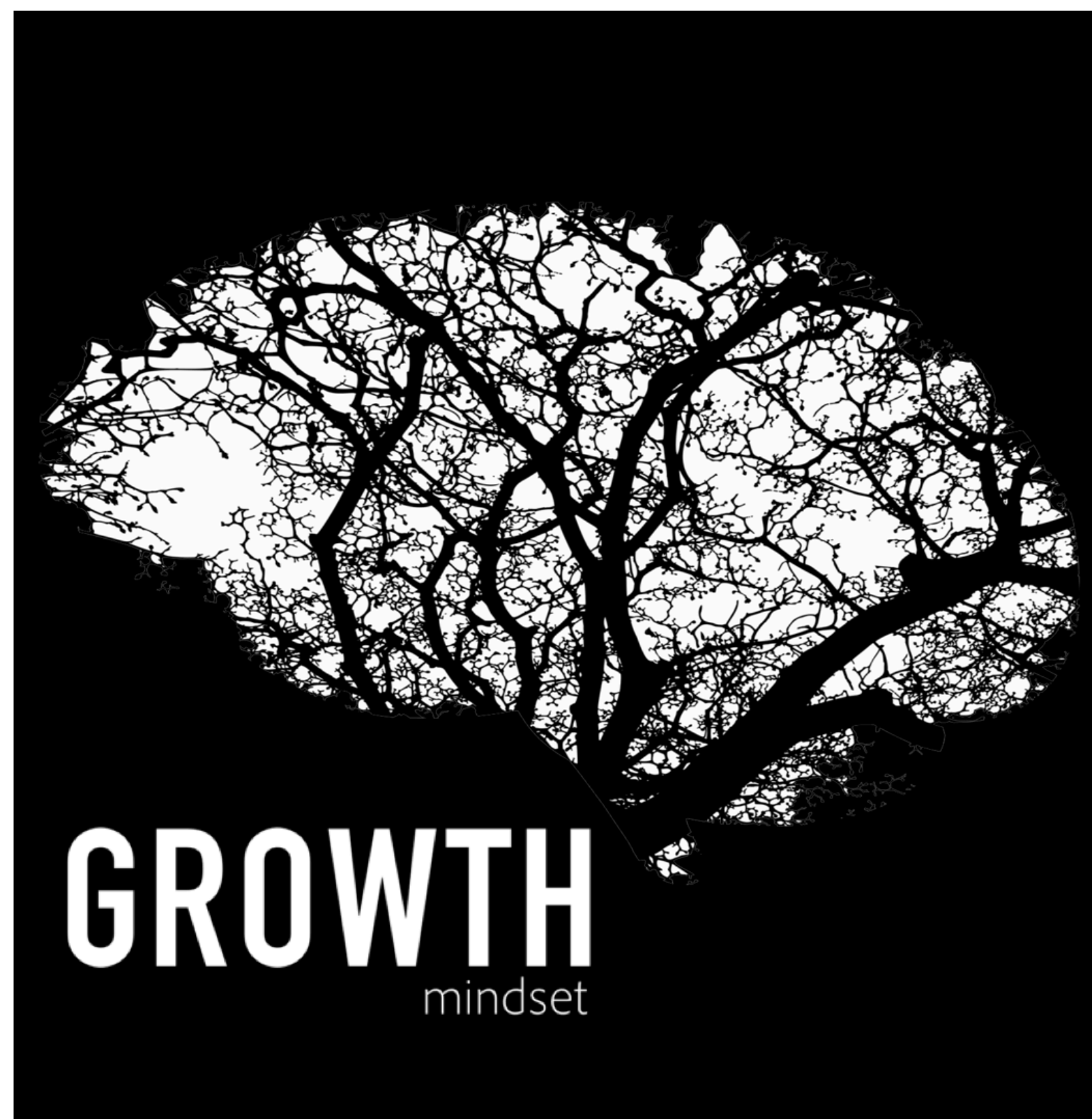


CONSTRUCTING
KNOWLEDGE

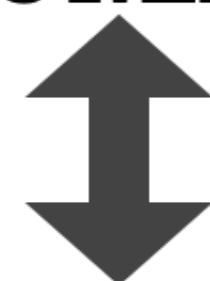
Courses



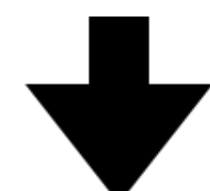
TRANSFORMING KNOWLEDGE



INFORMATION



UNKNOWN



INNOVATIVE

and

GROWTH

The 21st century learning

A STRUCTURE OF
COMPETENCES

to SUCCESSFULLY

THRIVE

in the world in flux ...

LEARN *character*
to BE

it's time for
CHARACTER
—not the—
INTELLECT

“HOW”

—they—

BEHAVE

and

ENGAGE

in our society/world

learn to

BE

hand, mind, and spirit

บัณฑิต

พันธุ์ใหม่

“COMPETENT”
SCHOLAR

It is about **WHAT**
students
CAN DO
with **WHAT** they
KNOW ...

บันทึก พันธุ์ใหม่

FOCUSING ON
COMPETENCE
not
KNOWLEDGE

transforming
KNOWLEDGE
leading to **CONTINUOUS** **EDUCATION SYSTEM**

connecting credentials

connecting credentials

connecting credentials

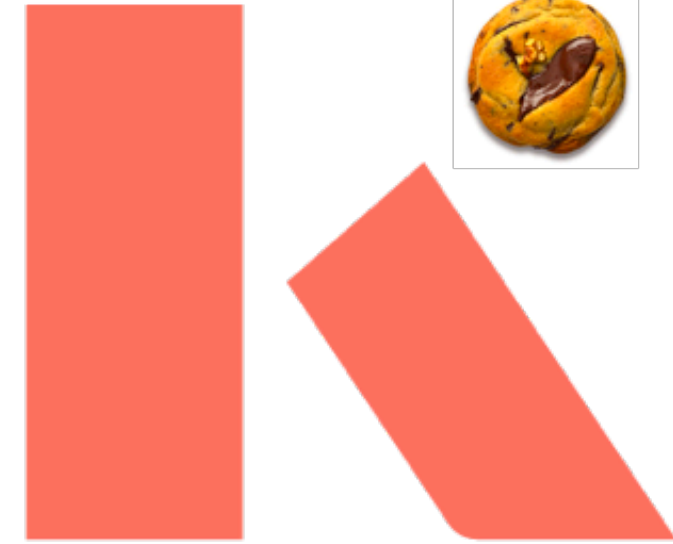
the world in “FLUX”



REDEFINITION

creation of new services
which previously

INCONCEIVABLE



YOUR
**KMUTT
4 LIFE**

MODIFICATION

significant services

REDESIGN



**DIGITAL
TRANSFORMATION**

MODIFICATION

significant services

REDESIGN



Competence based
education



KMUTT 3.0



creating
Student
learning

from
Teaching
to

A person wearing a blue hoodie is seen from behind, with their arms raised in a celebratory gesture. They are standing on a beach or near water, looking out at a sunset or sunrise. The sky is filled with soft, colorful clouds in shades of orange, yellow, and blue. The overall mood is one of achievement and hope.

OBE:

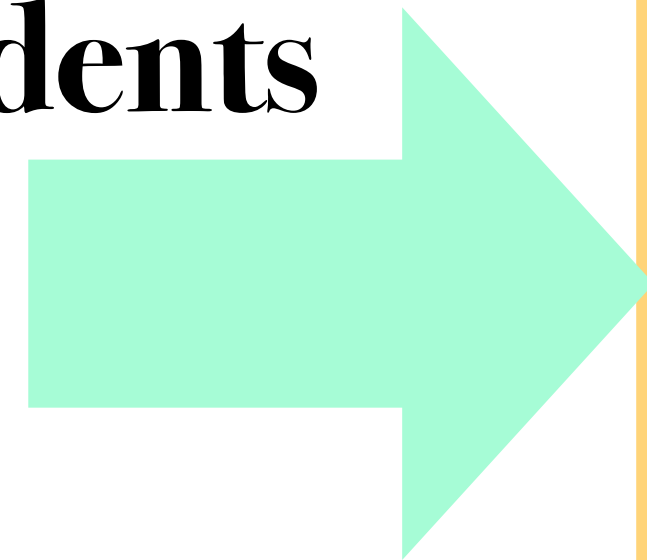
outcome based education

**PERFORMANCE
BASED**

**ACCOUNTABILITY
FRAMEWORK**

HIGHER EDUCATION SYSTEM

High School
Students



4

"COURSE"
AND
"CURRICULUM"
assessment

Curriculum

Culture
and
Environment
Hidden Curriculum

"INSTITUTIONAL"
assessment

2

LEARNING PROCESS

"INSTITUTIONAL"
assessment

Management
and
Policies

Academic
STAFF

"INSTITUTIONAL"
assessment

3

ASSESS
PROGRESS
of students from learning ...

1

LEARNING
OUTCOMES

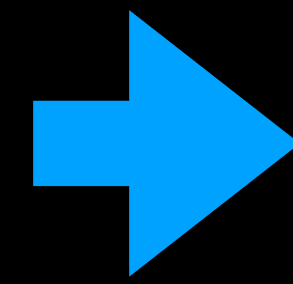


Teaching Culture

content to be **covered**

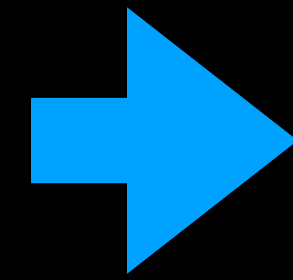
“what” will **happen** in this
course and **“when”**

teacher-directed

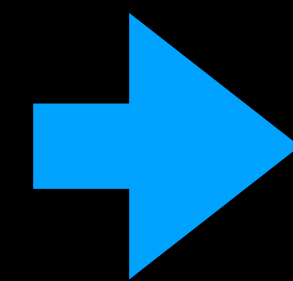


Learning Culture

how to **learn effectively**



“why” is this course **relevant**
and **“how”** can students be
successful ?



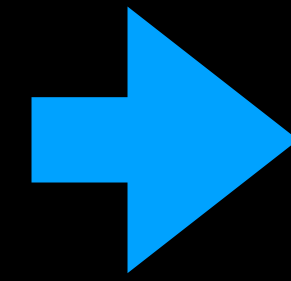
partnership between teacher
and students

Teaching Culture

grades, punishment

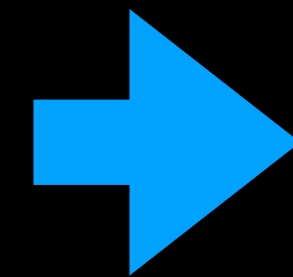
dry/boring and/or

punitive/controlling



meaningfulness,
curiosity, student

autonomy, community



positive, encouraging,
inviting, engaging

The 20th century learning
A STRUCTURE OF
KNOWLEDGE
to WORK for
LIVING
after graduating from university ...

The Future
of **HIGHER**
Education

The 21st century learning
A STRUCTURE OF
COMPETENCES
to SUCCESSFULLY
THRIVE
in the world of 4.0 ...

OUTCOMES

ACHIEVEMENT
of student from
LEARNING

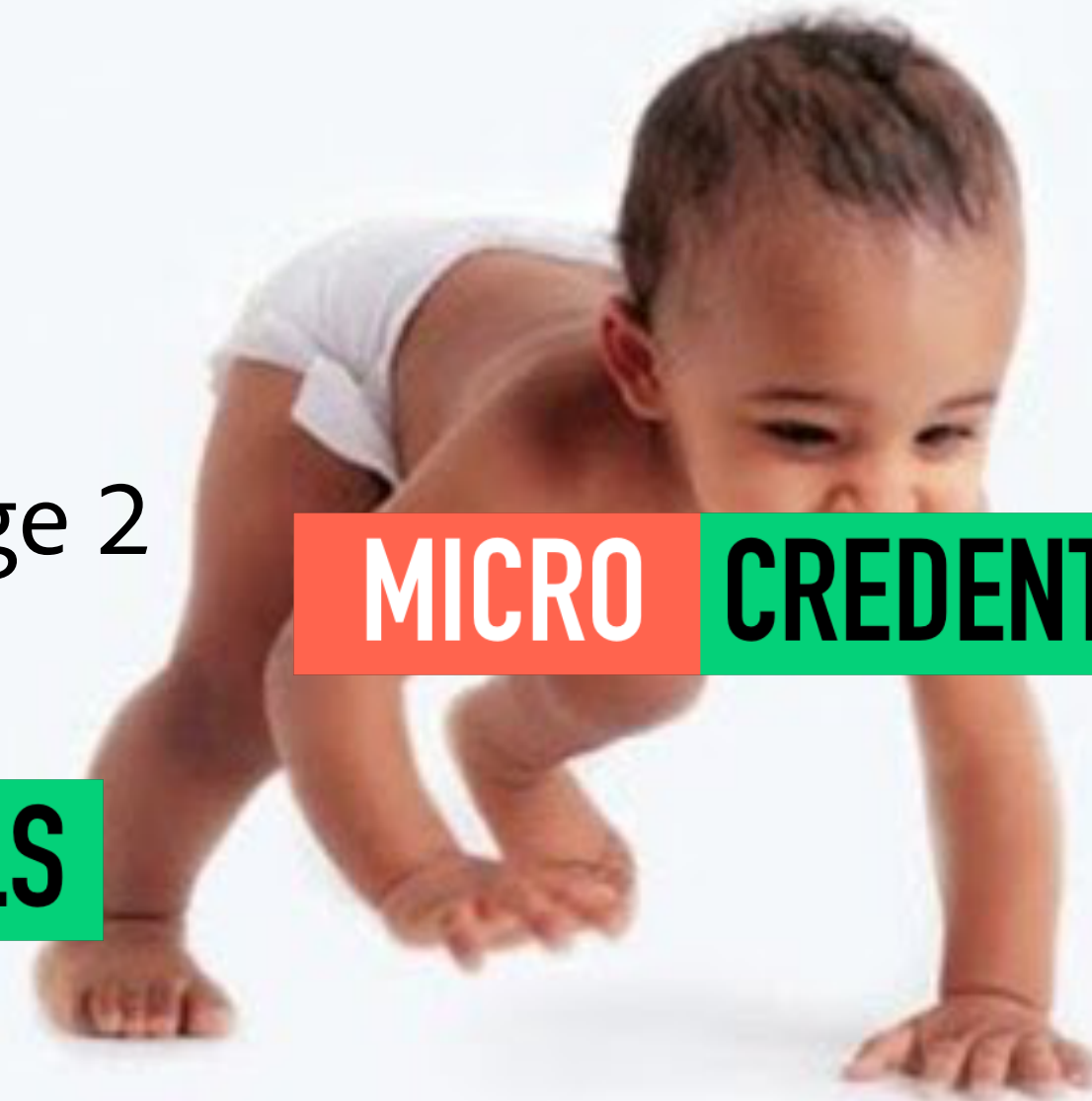
Growth of Student

stage 1



MICRO CREDENTIALS

stage 2



MICRO CREDENTIALS

stage 3



MICRO CREDENTIALS

final day



CULMINATING
LEARNIN
OUTCOMES

from learning
Development

CREDENTIAL

“PLO”
Programme Learning Outcomes
(or Expected or Intended Learning Outcomes)

Make our degrees be more transparent with explicit definition of the competences they represent, so that all stakeholders can see the value of these competences.

CREDENTIAL

SHIMAN COMPOSTH			
AL GEOM-CALC II			
NTRO PHYSICS II			
AMER NATL GOVERN			
ETHICS&POLIT&RHET			
term gpa: 3.33	accum gpa: 3.61	accum hours:	
Fall-----			
130 MODERN PHYSICS			
129 SOPHOMORE LAB			
100 ANAL GEOM-CALC			
065 INTRO TO CO			
149 UNIV/COMM CHO			
term gpa: 3.50	accum		
Status: Dean's List			
Spring-----			
PHY -133 ELECTRONICS			
01 MATH REASONING			
TORIC & WAR			
CON-I			



MICRO CREDENTIALS



MICRO CREDENTIALS



MICRO CREDENTIALS



MICRO CREDENTIALS



MICRO CREDENTIALS



MICRO CREDENTIALS



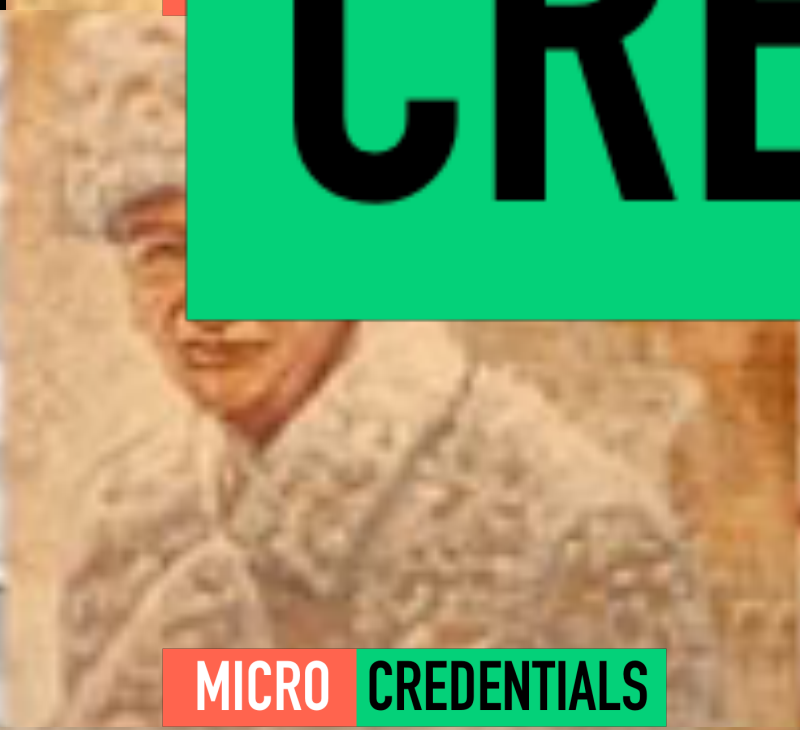
CREDENTIAL



MICRO CREDENTIALS



MICRO CREDENTIALS



MICRO CREDENTIALS



MICRO CREDENTIALS



MICRO CREDENTIALS



MICRO CREDENTIALS



MICRO CREDENTIALS



MICRO CREDENTIALS



MICRO CREDENTIALS



MICRO CREDENTIALS



MICRO CREDENTIALS

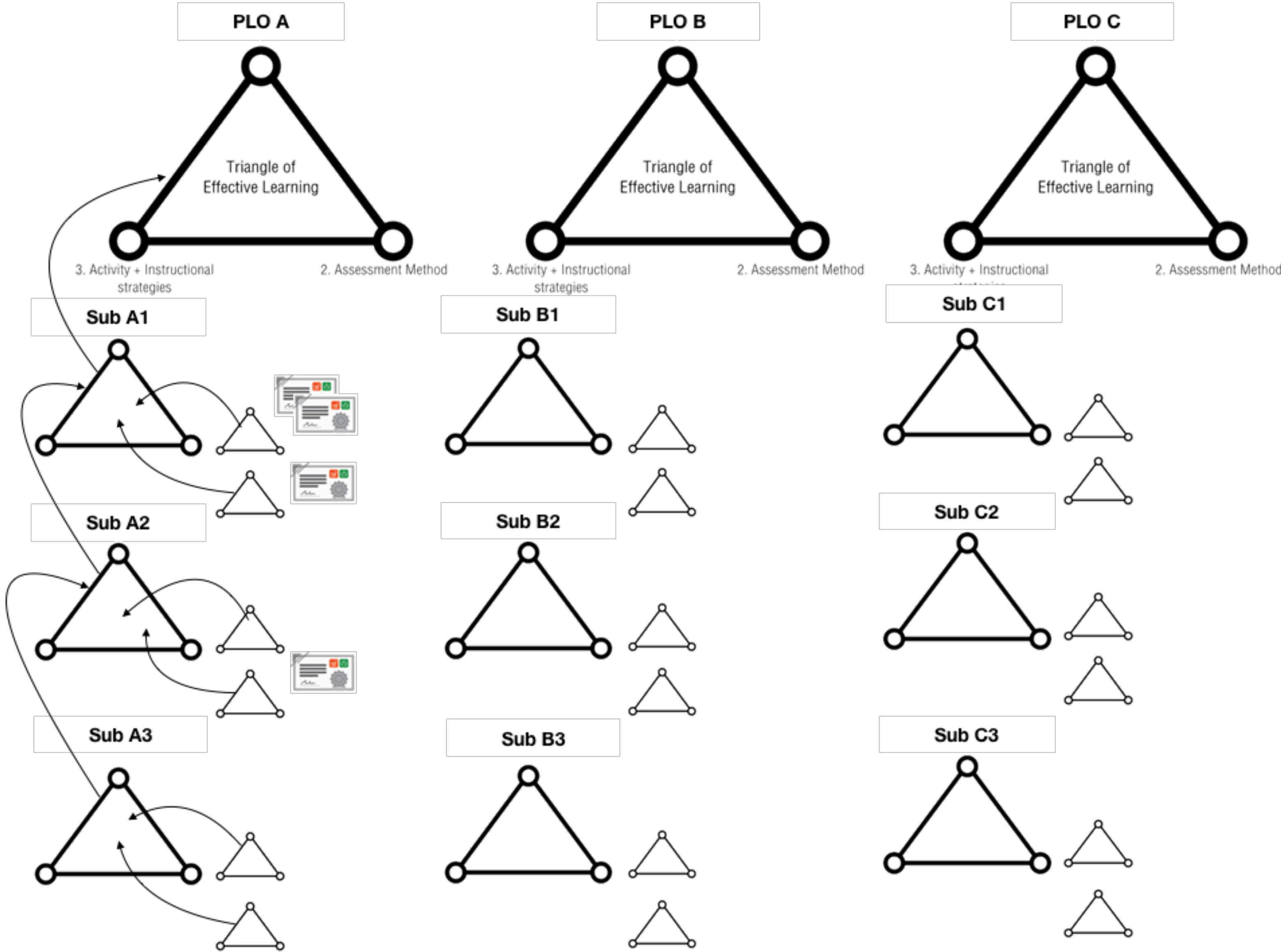


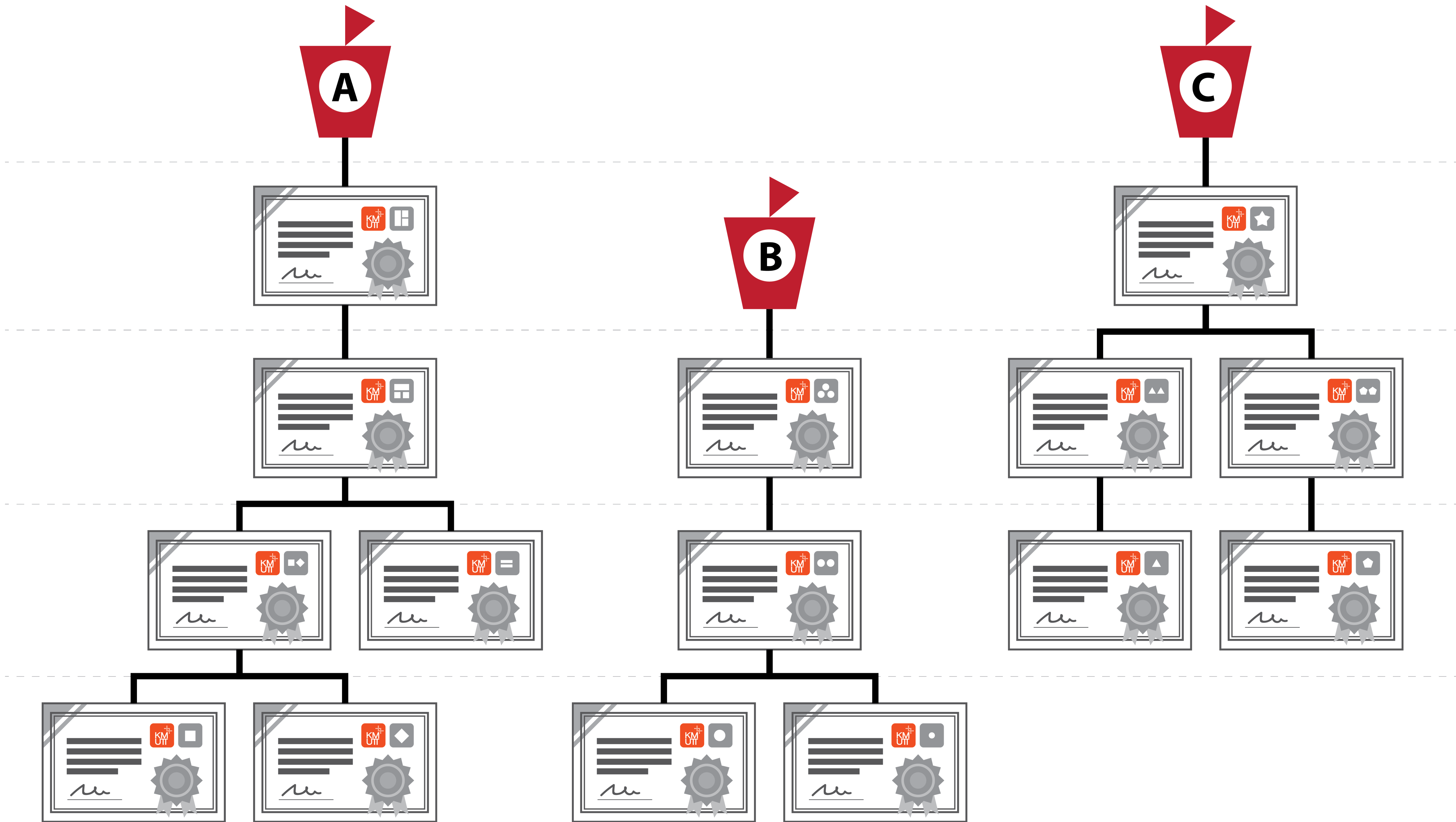
MICRO

CREDENTIALS

Micro Credential and OBE backward design

4 years





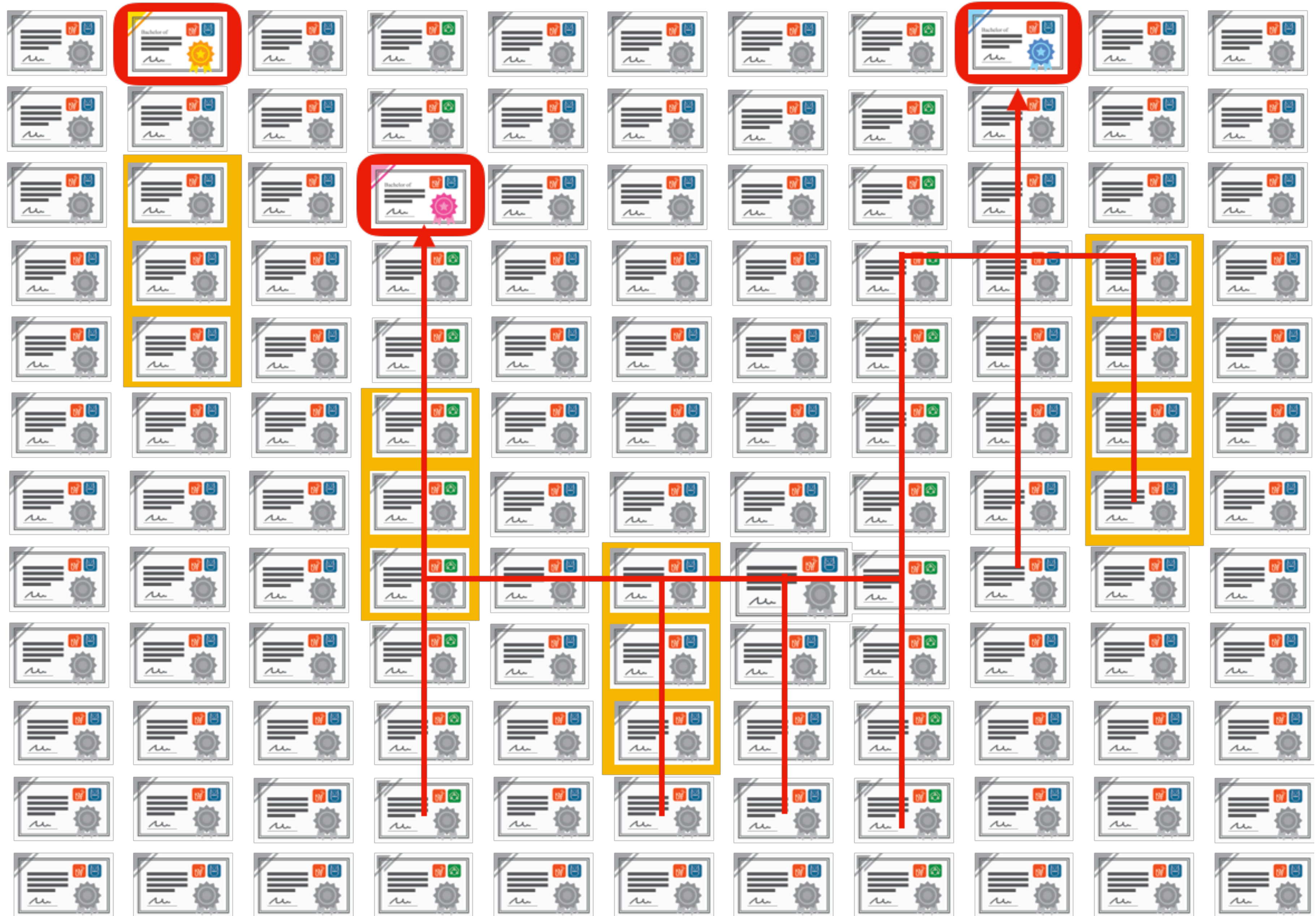
KMUTT Service Menu

Credential + Micro credential

Advance

Intermediate

Beginner





REDEFINITION

creation of new services
which previously

INCONCEIVABLE



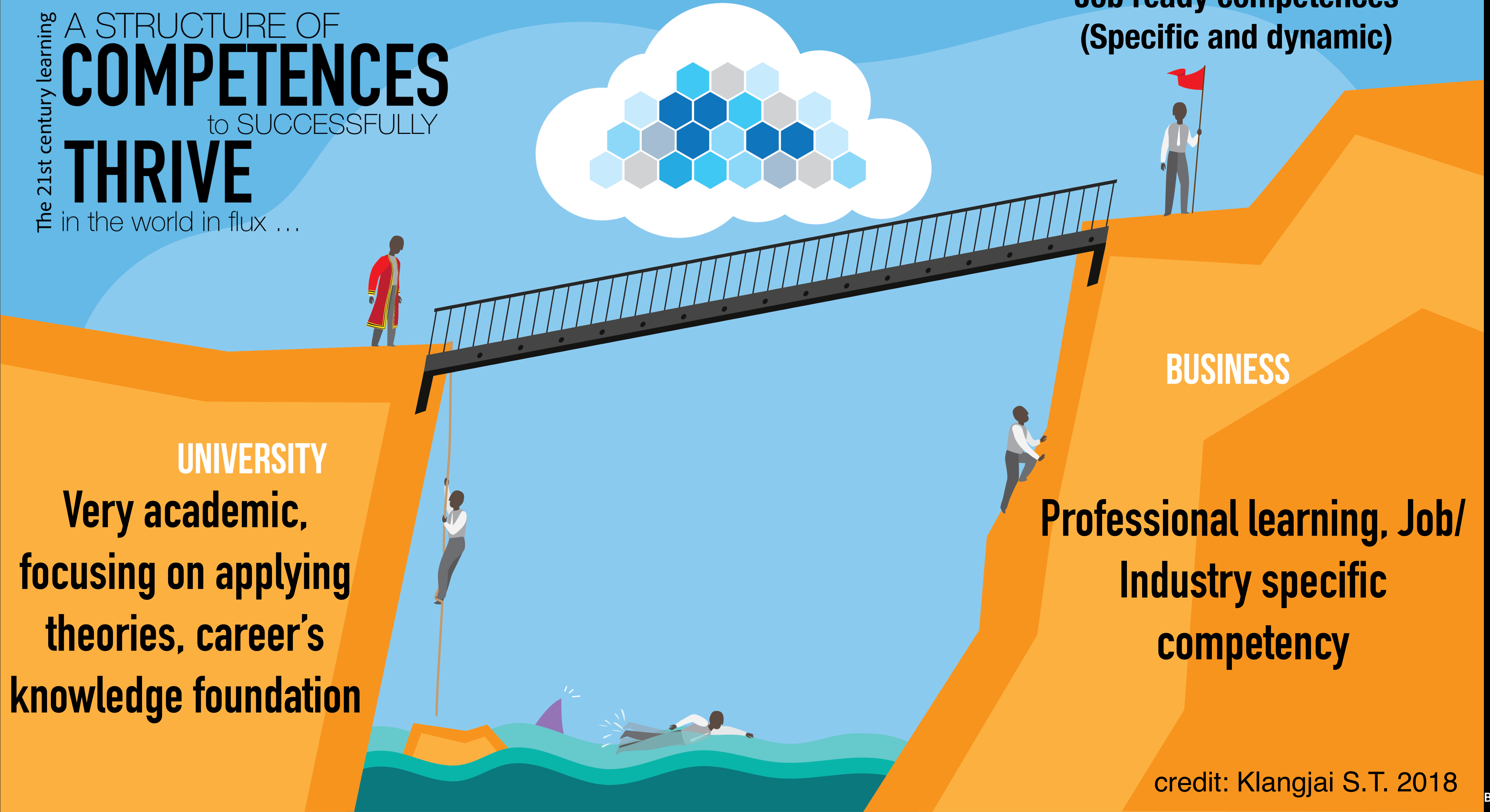
YOUR

KMUTT
4 LIFE

KMUTT Micro Credential System

Job ready competences
(Specific and dynamic)

The 21st century learning
A STRUCTURE OF
COMPETENCES
to SUCCESSFULLY
THRIVE
in the world in flux ...



credit: Klangjai S.T. 2018



ETS

EDUCATION TECHNOLOGY
DEVELOPMENT AND
INTEGRATION SUPPORT

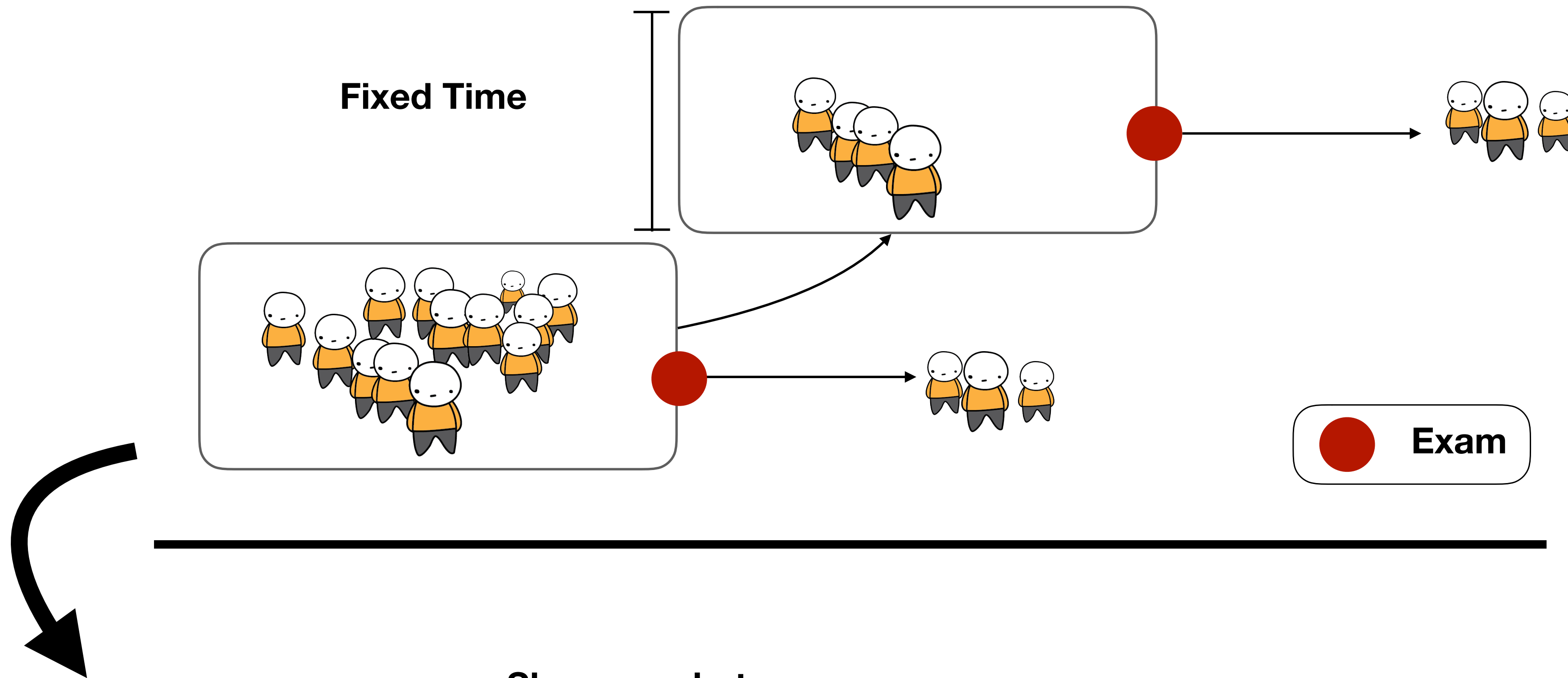
MAKE A

**BIG
IMPACT**

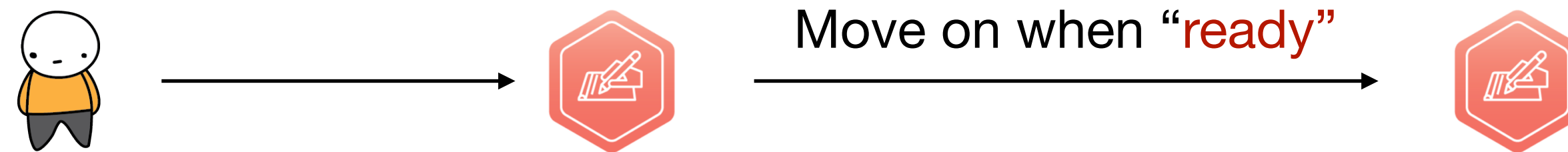
Learning for Life with KMUTT Micro Credentials



*by
thinking
small*



Show us what you can



Learn what you need

Self-paced learning

☐☐☐☐

Evidence based measurement

NOT your ordinary skill training

Training = Knowledge for the sake of knowledge....

Micro-credential = Competence to do something and/or become someone from utilizing practical structured knowledge

Micro-credentials (also referred to as competency-based credentials) allow earners to earn an endorsement in a way that is **specific, job-embedded, performance-based, and less expensive and time-consuming** than coursework.

Digital Promise

KMUTT Credential system

Non Degree

Big Stack

eg, Instrument calibration for
ปิโตรเคมีอุตสาหกรรม

Small Stack

eg, IOS app development
(Similar to Udacity)

MICRO CREDENTIAL

Single competency development, small
enough to provide design flexibility, big
enough to add value to industry (can be
viewed as part of stack or nano-degree

Degree Based

Degree level

Degree ต่างๆ ที่เรามีให้อยู่แล้ว เช่น
Bachelor, Master, PhD ใช้
เวลาที่แน่นอนในการสร้าง

Nano Degree

เป็นส่วนหนึ่งหรือส่วนประกอบของ
Degree ที่เน้น Competence หรือว่า
Competency ใหญ่ๆ ที่เป็นที่ต้องการ
ของตลาด เช่น เรื่องการออกแบบและ
ติดตั้ง Sensor สำหรับปิโตรเคมี
อุตสาหกรรม, Instrumental
mantainance - electrical industry



Digital Credential with “DATA” inside...

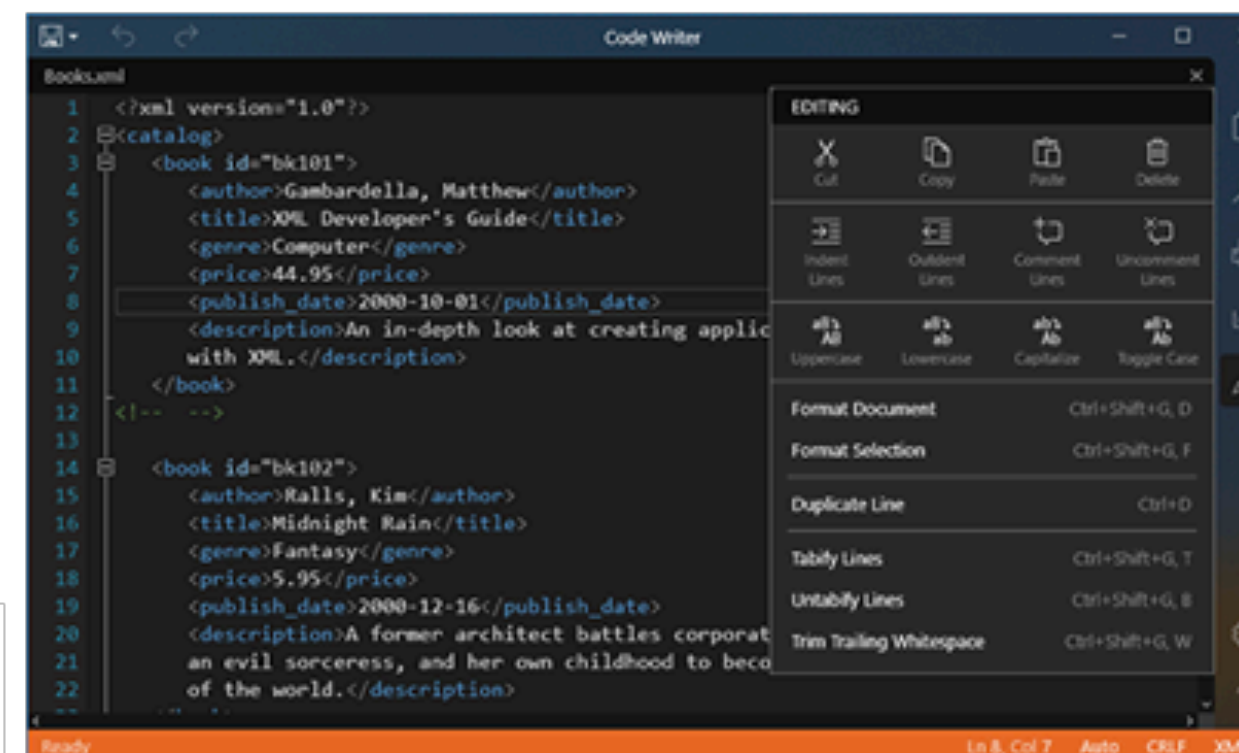


Evidence 1

```
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" />
<param name="allowfullscreen" value="true" />
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height="344"
src="http://www.youtube.com/v/oHg5SJYRHA0&hl=en&fs=1&"
allowscriptaccess="always" allowfullscreen="true">
</embed>
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```



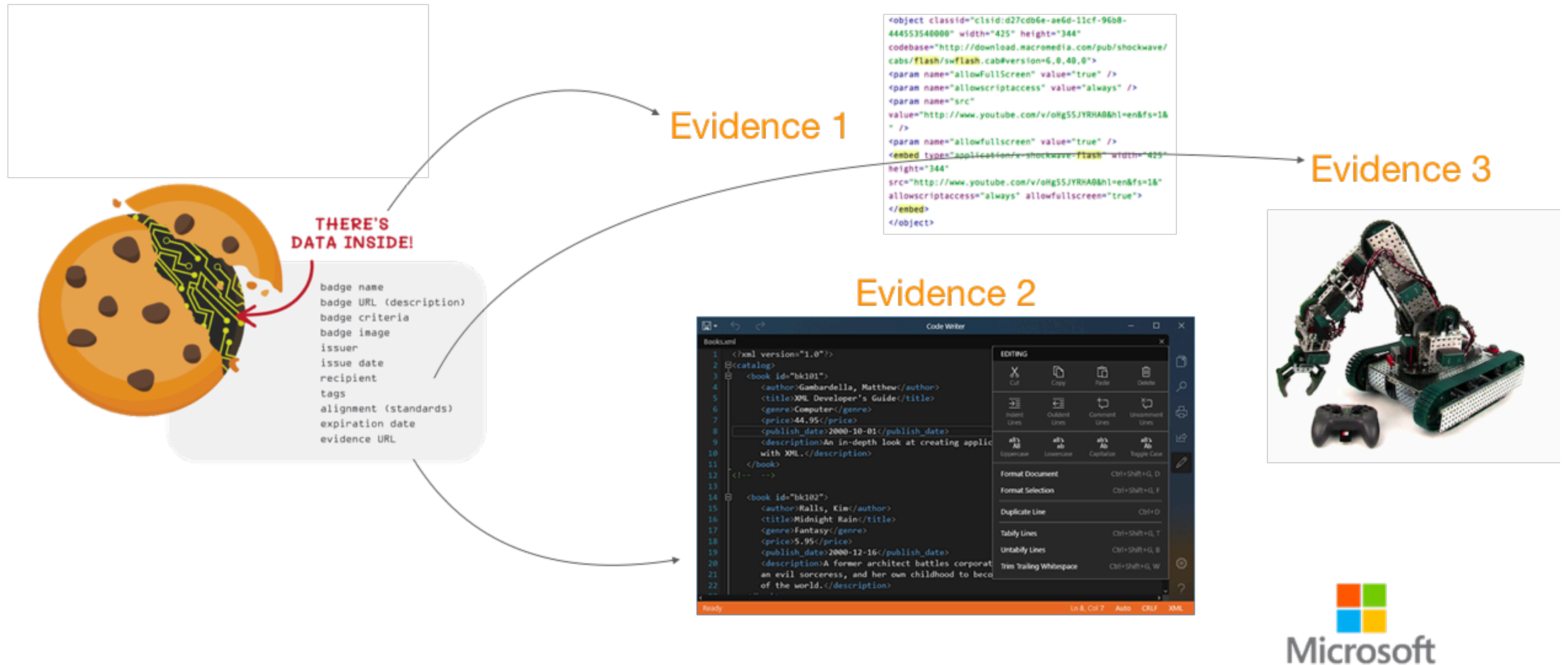
Evidence 2



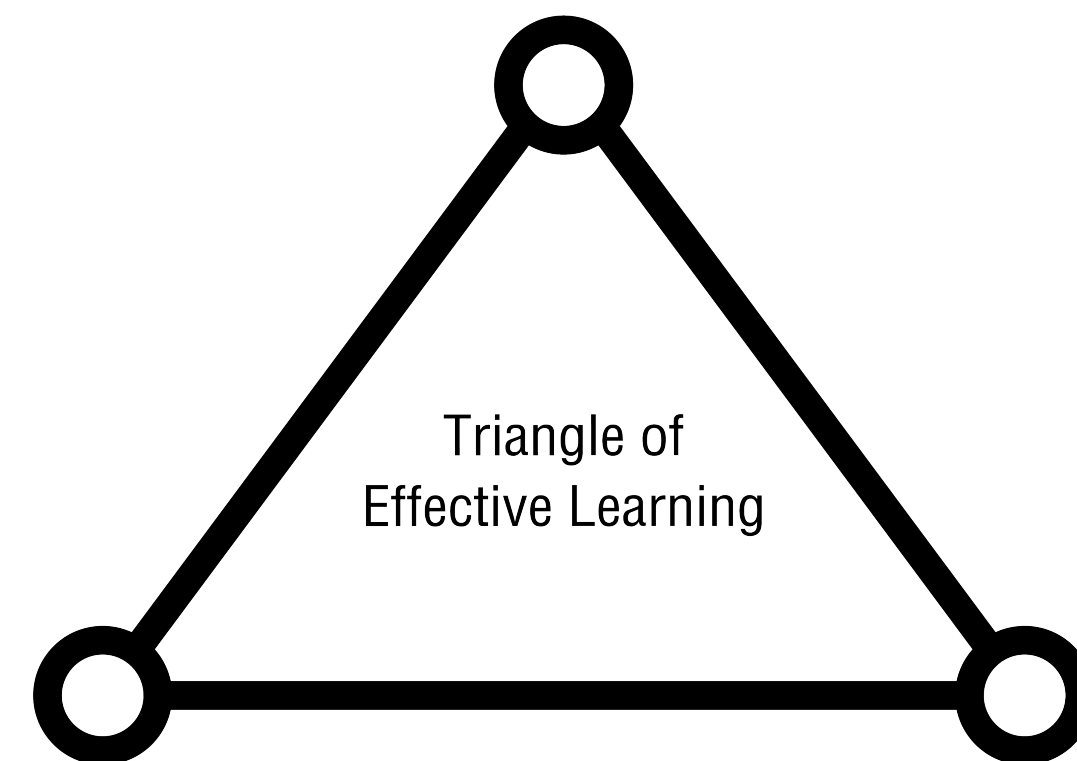
Evidence 3



We measure 'competence/competency' using evidence based method



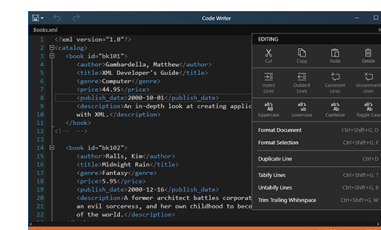
We design learning to make sure they can demonstrate the 'competency'



Competency-based Learning

(make sure they master the skill, guarantee competency)

```
<object classid="clsid:d27cbb6e-ae6d-11cf-96b8-444553540000" width="425" height="344"
codebase="http://download.macromedia.com/pub/shockwave/cabs/flash/swflash.cab#version=6,0,40,0">
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height="344"
src="http://www.youtube.com/v/oHg5SJYRHA0&hl=en&fs=1&"
allowscriptaccess="always" allowfullscreen="true">
</embed>
</object>
```



Evidences from job-related work
(aligned to your business goals)

Accumulated Wisdom

Cultivating wisdom, one
step at a time

Higher Order Thinking

Focus on higher order
thinking, problem
solving



**Measure and
endorse specific
ability**
using evidencing

Practical
Make sure they can do it

Demand Driven
Self paced and specific
learning for individual
needs

Learn. Build. Success.

Validate your skill and 'show' with Micro-credentials



Front End Developer

Learning Design

Android Basics

Blockchain

Front End Developer

Full Stack Developer

Mobile Web Specialist

React

Virtual Reality

Unreal

Artificial Intelligence

Deep Learning

Deep Reinforcement Learning

Machine Learning

Computer Vision

Learning Design

[Explore all](#)

Course Learning Outcomes

Design course with learning outcomes (LO) that vertically align with progra...

Free



Save to my list

Constructive Course Design

Design a lesson plan and course quality system based on constru...

Free



Programming

[Explore all](#)

Introduction to Programming

HTML, CSS, Python

Free



Front End Web Developer

JavaScript, jQuery, HTML5, HTML, CSS, Python, Object-Oriented Progra...

Free



Full Stack Web Developer

Python, JavaScript, SQL, HTML5 & CSS3, Python, Databases, Authentica...

฿599



IOS Developer

Swift programming, Core Data, UIKit, iOS networking, app

฿599



As Earner

My MC

My Badge


As Designer

Dashboard

My MC 1

Become Reviewer

Learning Design


 ✓


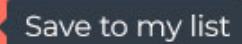
Course Learning Outcomes

Learning Outcomes , OBE

Design course with learning outcomes (LO) that vertically align with program learning outcomes (PLO) and LOs of related course(s) and content that is suitable with the course LOs

Free




 

Constructive Course Design

Learning Outcomes, OBE

Design a lesson plan and course quality system based on constructive alignment, desired competency, and anticipated learner profile

Free



Programming

 ✓


Introduction to Programming

HTML, CSS, Python

Intro to Programming is your first step towards careers in Web and App Development, Machine Learning, Data Science, AI, and more! This program is perfect for beginners.

Free




 +


Front End Web Developer

JavaScript, jQuery, HTML5, HTML, CSS, Python, Object-Oriented Programming

In the Front End Developer Nanodegree program, you will complete five projects and build a resume-worthy portfolio.

Free




 +


Full Stack Web Developer

Python, JavaScript, SQL, HTML5 & CSS3, Python, Databases, Authentication & Authorization, AJAX & APIs, Configuration of Servers, Linux Basics

In this program, you'll prepare for a job as a Full Stack Web Developer, and learn to create complex server-side web applications that use powerful relational databases to persistently store data.

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
 +

IOS Developer

Swift programming, Core Data, UIKit, iOS networking, app publishing, User interfaces, Local Persistence, APIs

Master the Swift programming language, and create a portfolio of iOS apps for iPhone and iPad to showcase your skills!

฿599




 ✓

Introduction to Programming

HTML, CSS, Python


Intro to Programming is your first step

 +

Front End Web Developer

JavaScript, jQuery, HTML5, HTML, CSS, Python, Object-Oriented Programming

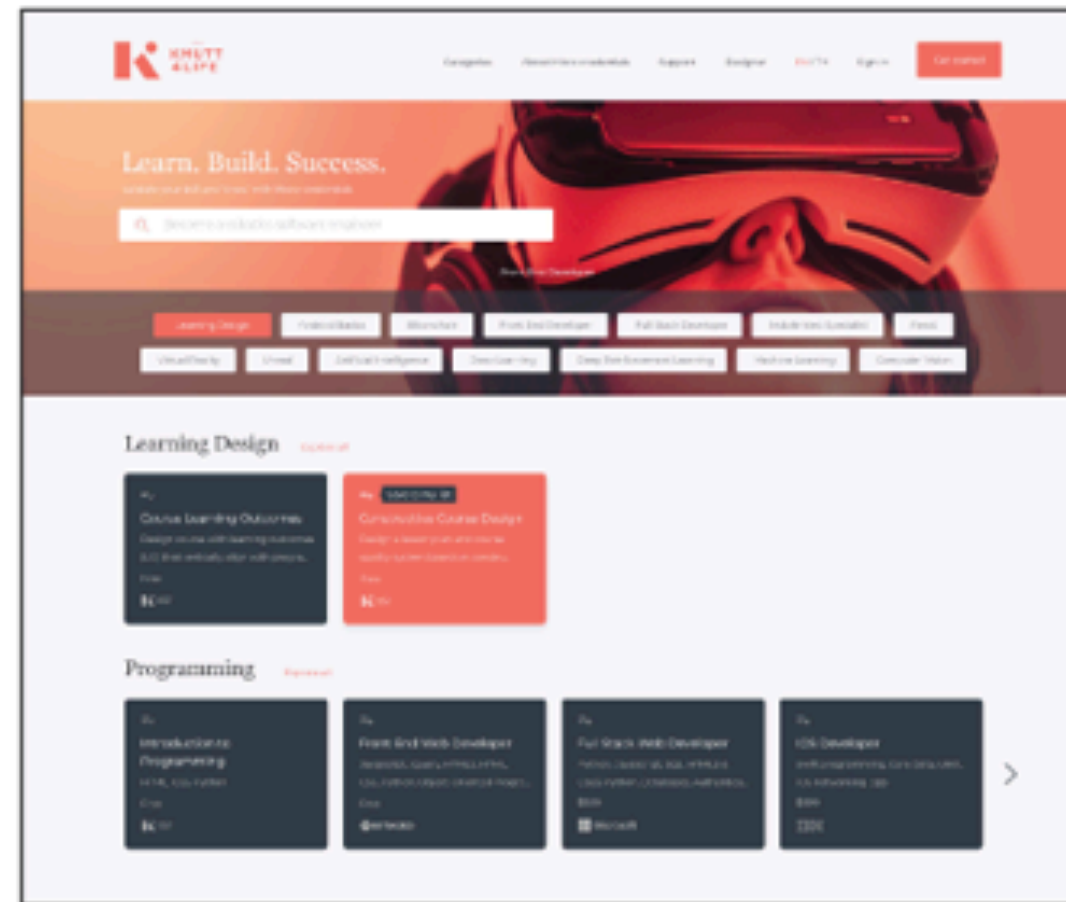
 +

 +

IOS Developer

Swift programming, Core Data, UIKit, iOS networking, app publishing, User interfaces, Local Persistence, APIs

Explore MC details



Show what you know
by Evidence submission



Learner
ability

I know I can do this -
I'm ready to be
evaluated

Evidence
Review & Evaluation



I'm
Confident

I'm not
Confident

Learning Unit



Free online
resources

Onsite or at
KMUTT or
somewhere
better!

