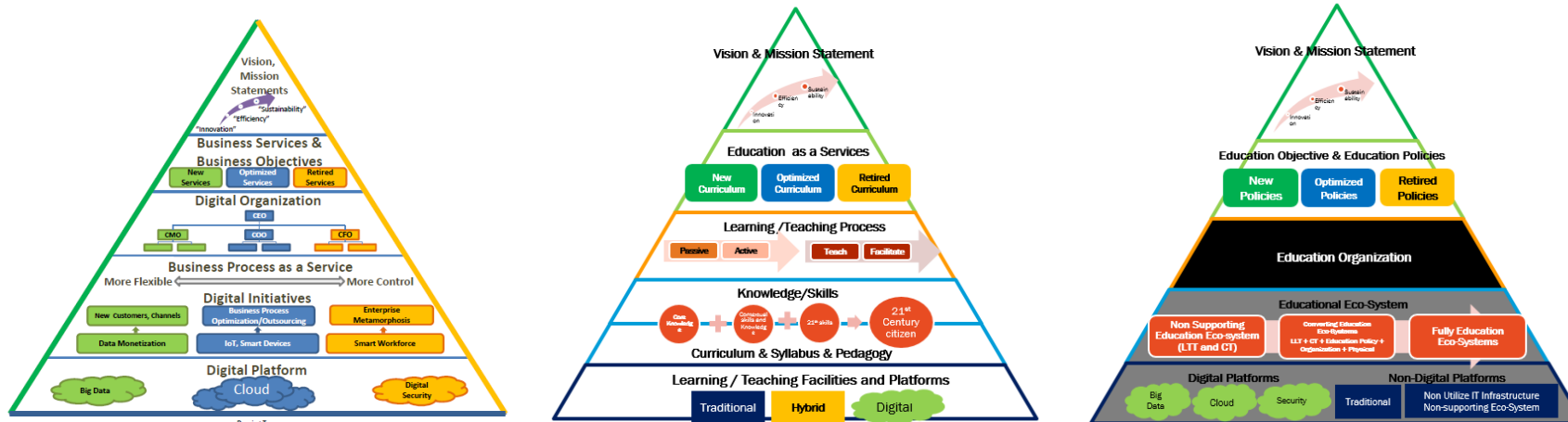


Changed and Developed Log

Version	Description
V.0 > V1.0	Developed from Digital Transformation Reference Model from K. Danairat Thanabodithammachari to be Educational Transformation Reference Model by Paramintara Yaoyuenyong
V1.0 > 1.1	Level ET; Education Transformation into 4 phases and developed to Template for Level 1-2 (LTT and CT) By Paramintara Yaoyuenyong
V.1.1 > V.1.2	Suggest Wording from Deliverable keys to be Key concepts/Key Activities by AJ. Winai (PSU-HKT)
	Developed Excel Based sheet by AJ.Teerapat Suwannaroochi (Ratjabhat Thepkasatri University)
V.1.2 > V.1.3	Add Don't Do this (Risk) to remind Lecturers to list what you shouldn't do in this syllabus, Pedagogical, Curriculum Add Activity Design form
V1.3> 1.5	Developed Activity based planning sheet Developed 5 pillars and 4 generations to extend from Only LTT in ET V1-2 to transform to Level 3-4 Add Agile Methodology (To be discussed) Add AUN-QA Standard in

**TIME
FOR
CHANGE**





TH Education Transformation (V1.7)

applied from Digital Transformation Framework of
Danairat Thanabodithammachari

BY PARAMINTARA YAOYUENYONG
MONSOONSIM THAILAND



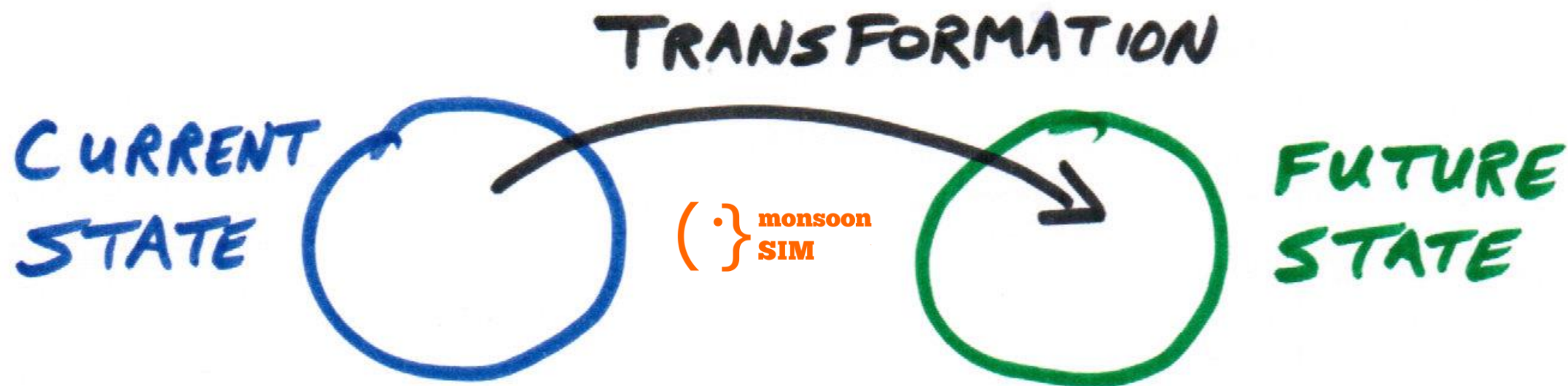
League of Thailand
Education
Transformation

Note:

- This Education Transformation framework still in the developing process. Anyone able to change and develop. But please share back to community. (League of Thailand Education Transformation Community: <https://www.facebook.com/groups/1195086257263824/>)
- This framework is **OPTIONAL** for Education Transformation. You are able to choose either option way for your own transformation based on your limitation over resources and factors.

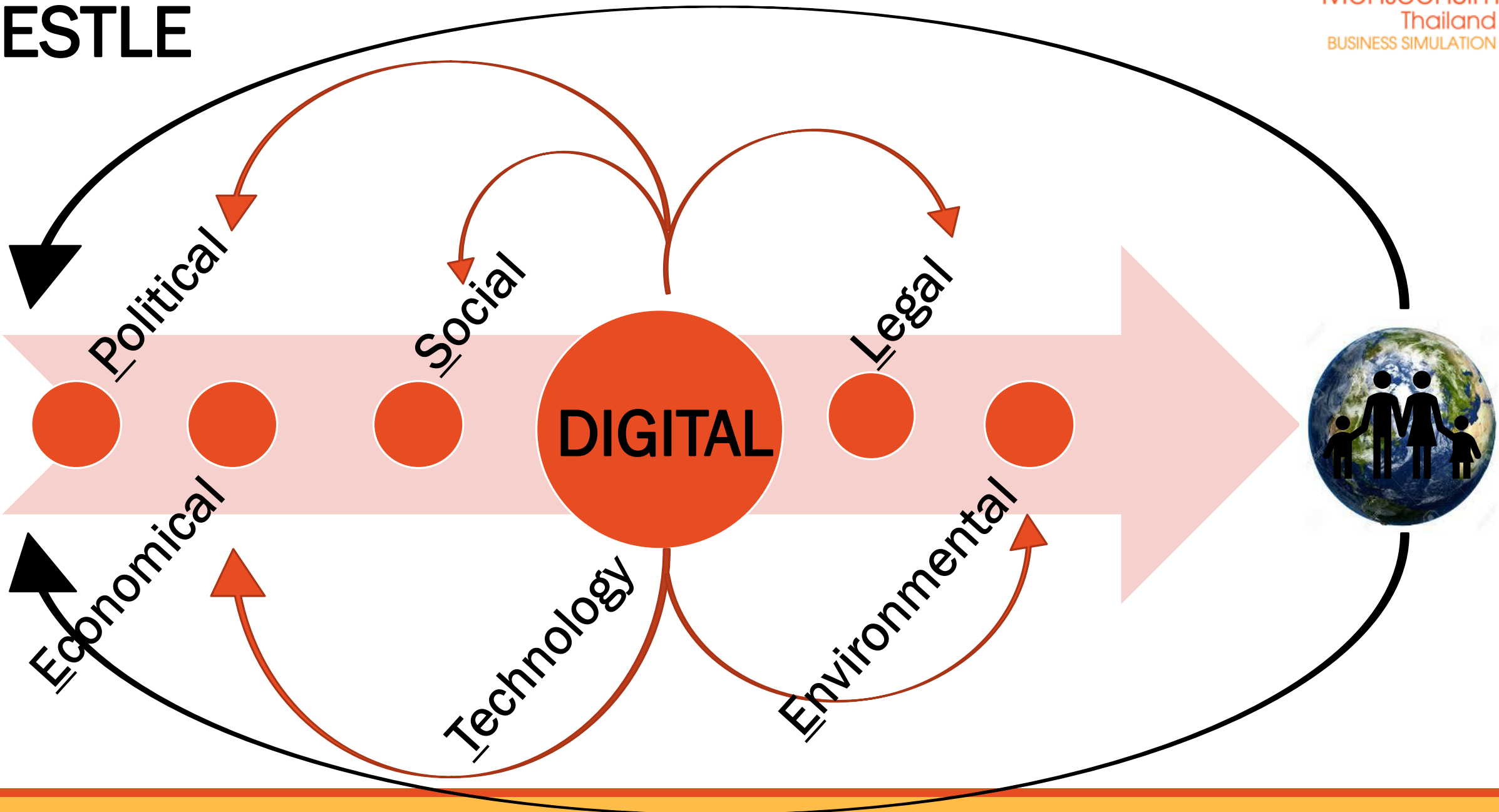
OPTIONAL

Education



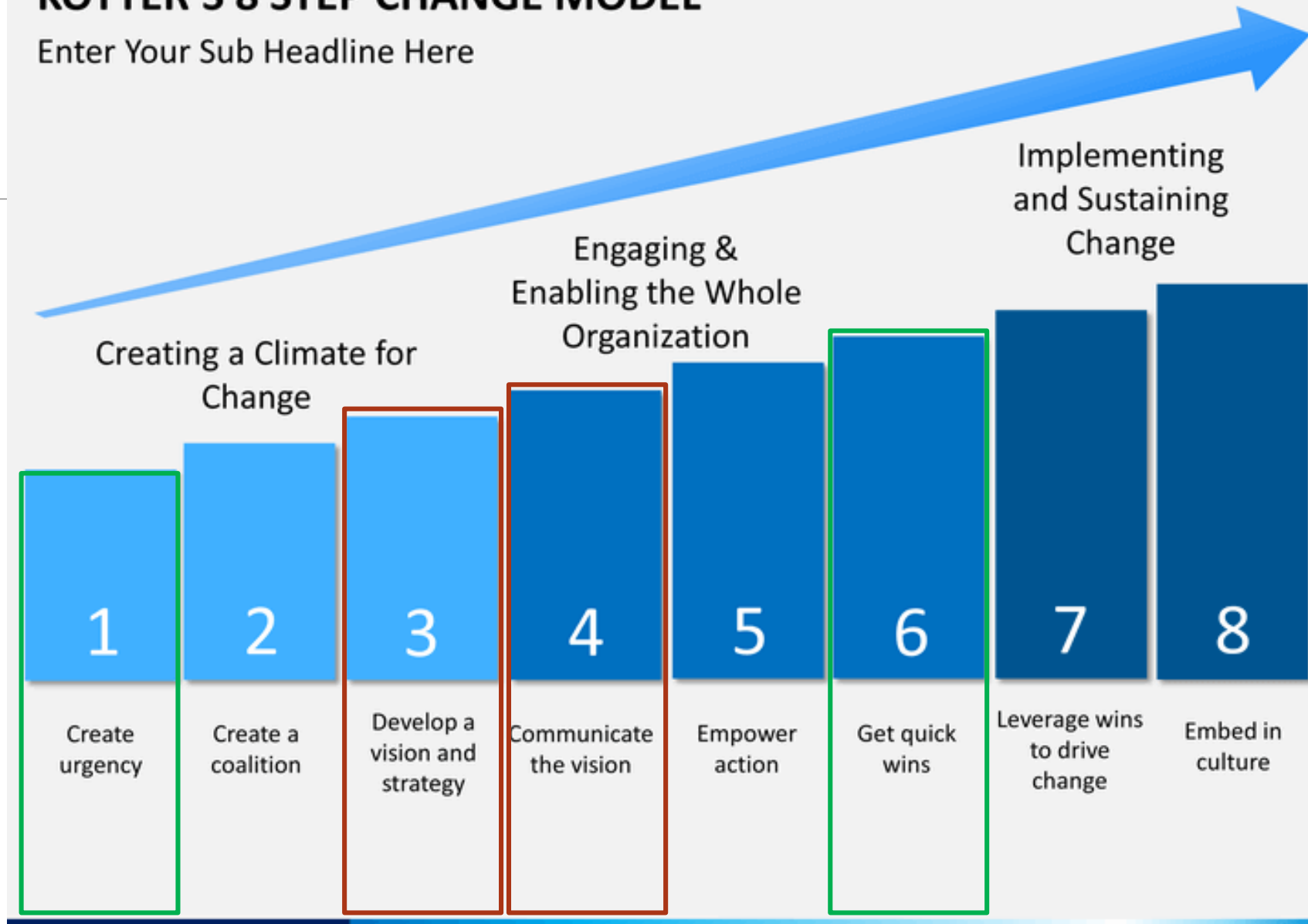
“เปลี่ยน” เพื่อ “ผลลัพธ์” ที่ดีขึ้น

PESTLE



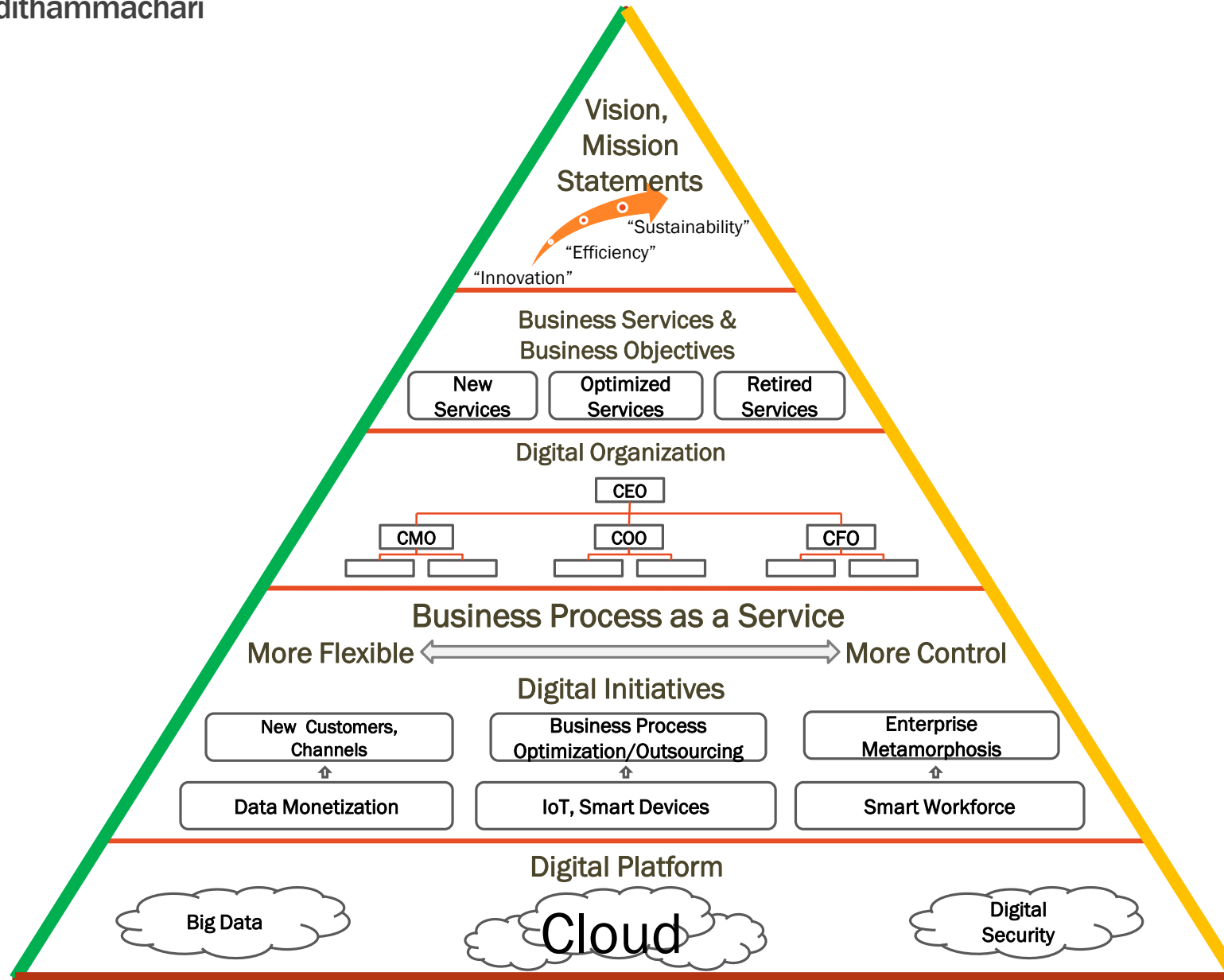
KOTTER'S 8 STEP CHANGE MODEL

Enter Your Sub Headline Here



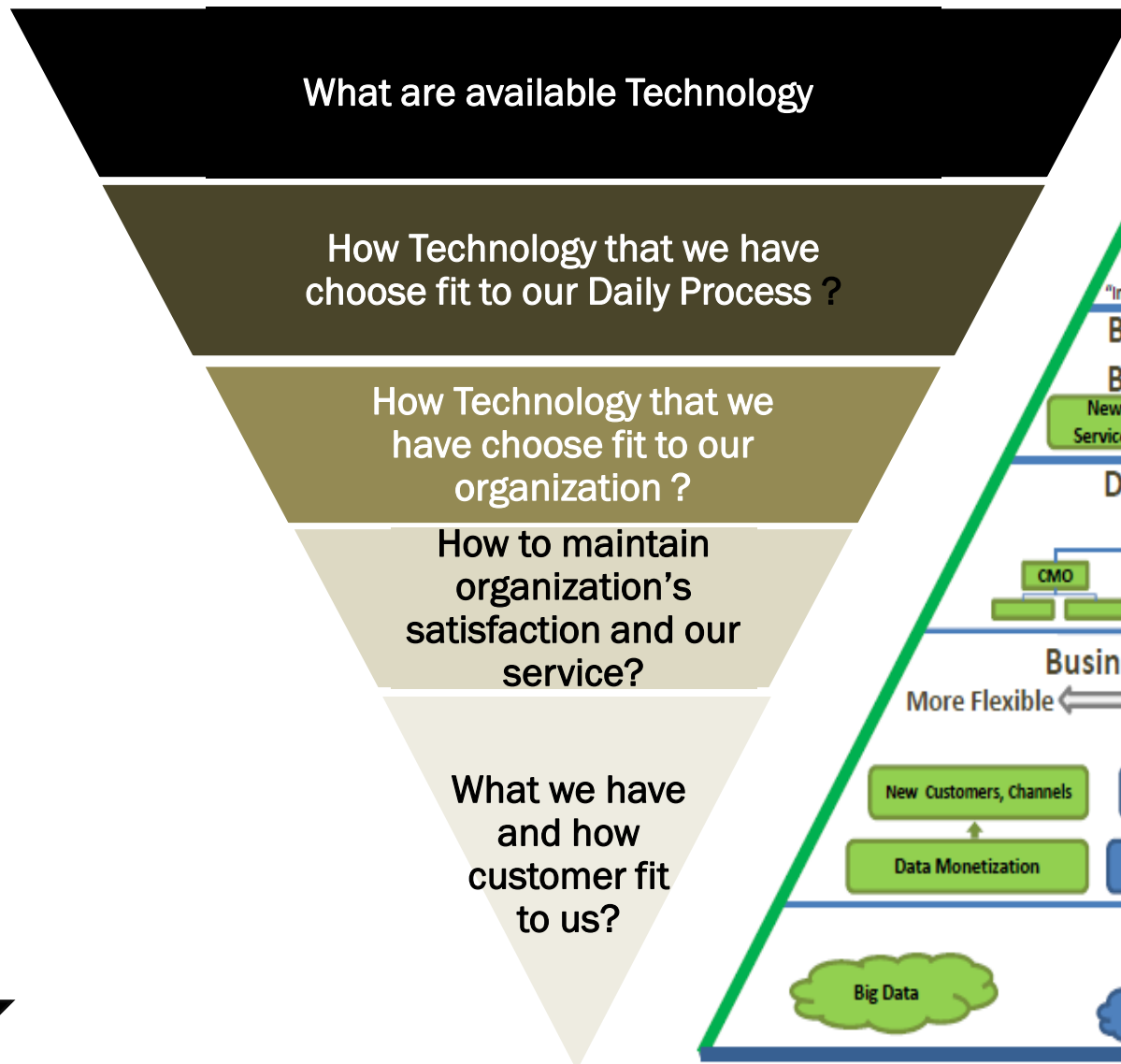
Digital Transformation Reference Model

by Khun Danairat Thanabodithammachari

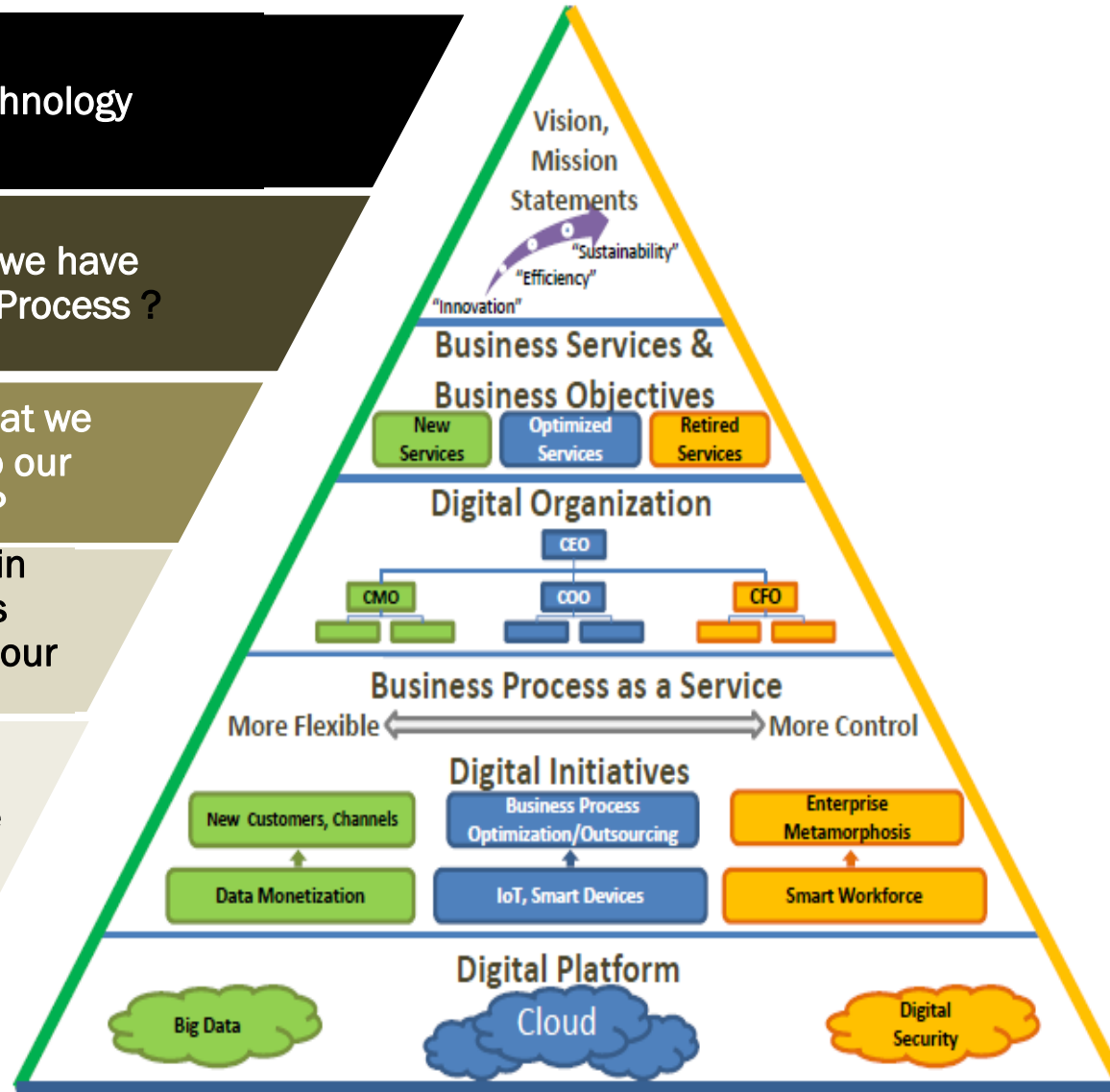


Understanding Digital Transformation concepts & Digital Transformation Reference Model

DIGITAL TRANSFORMATION REFERENCE MODEL FROM
DANAIRAT THANABODITHAMMACHARI

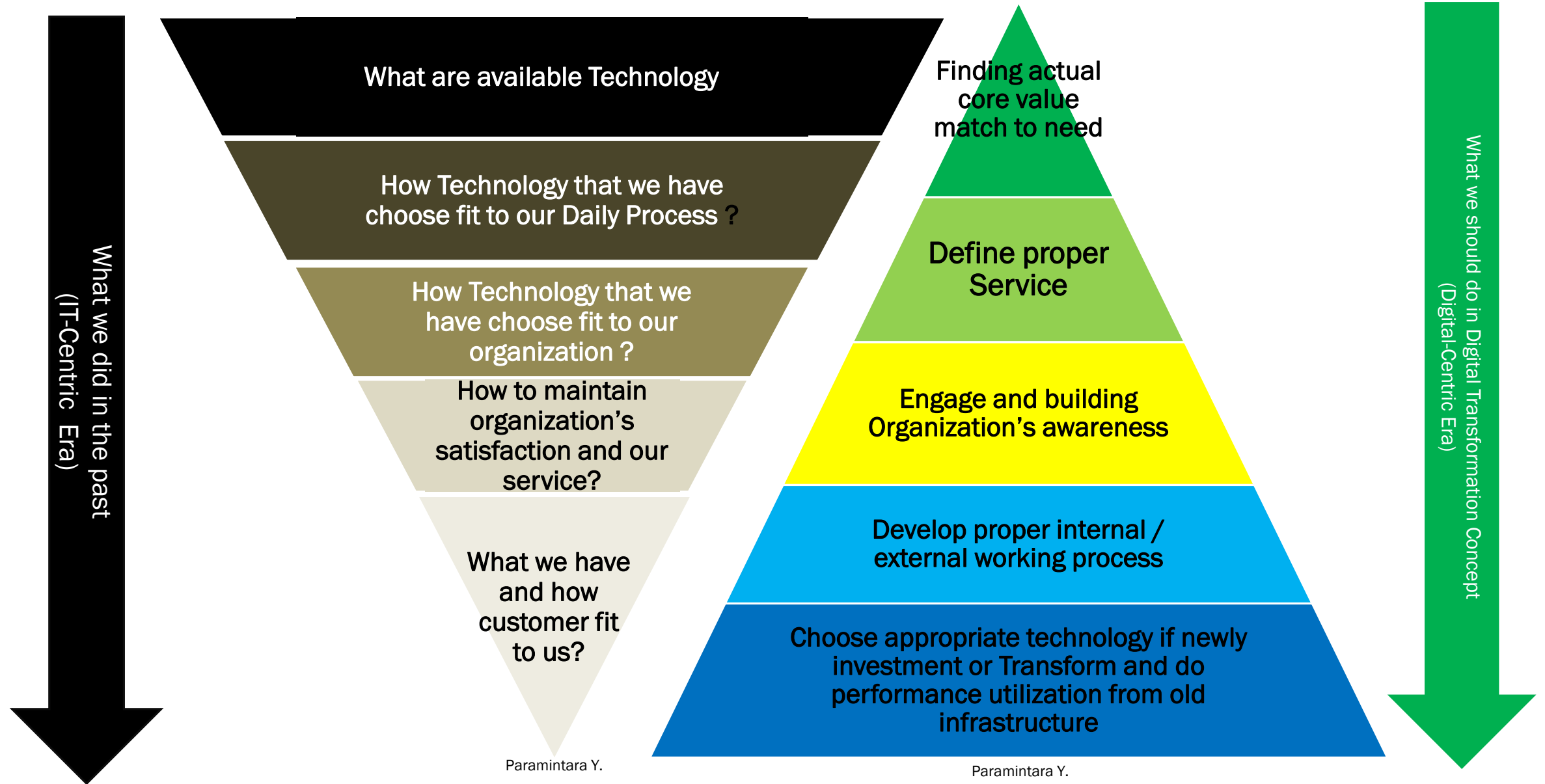


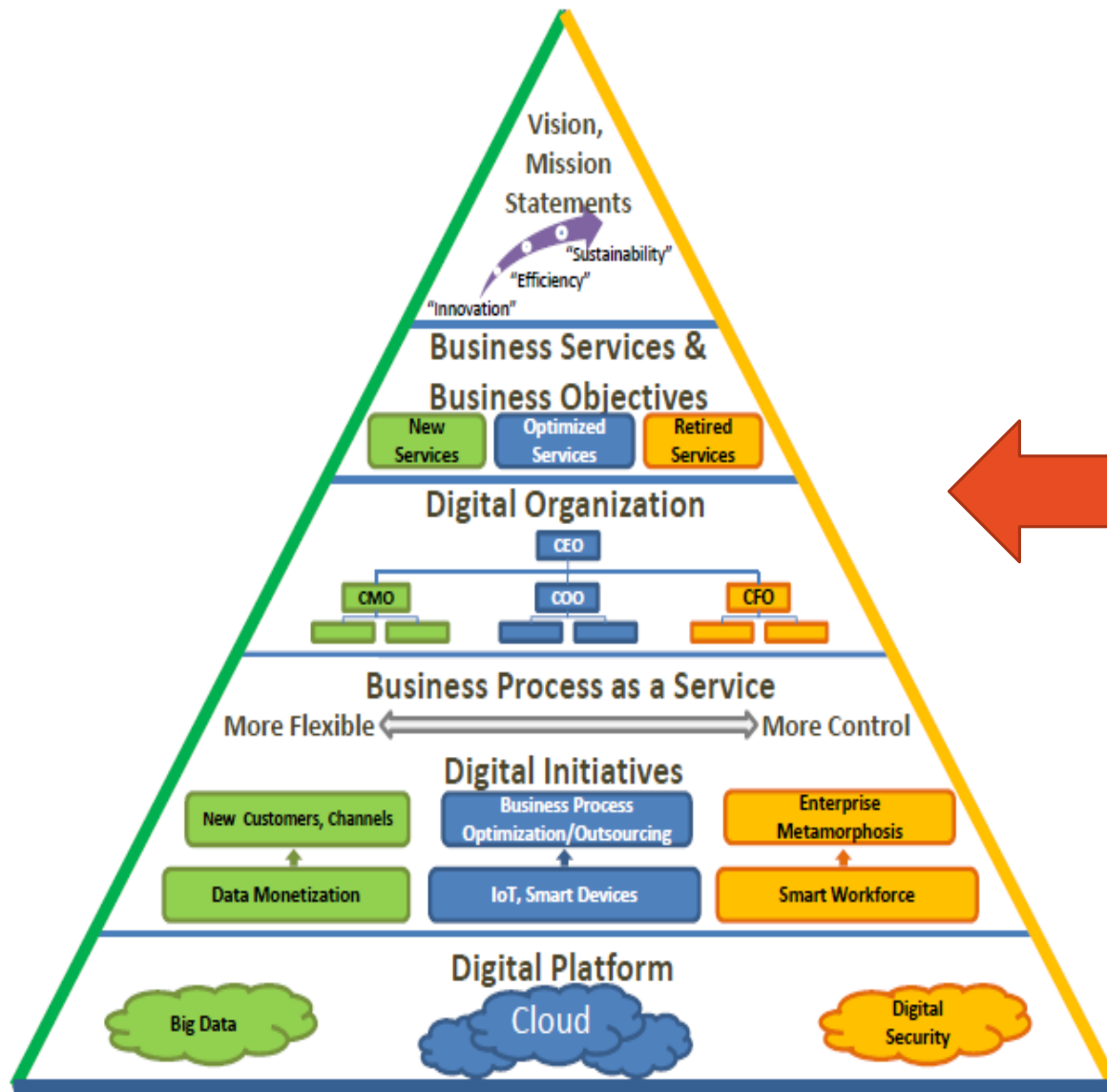
Paramintara Y.



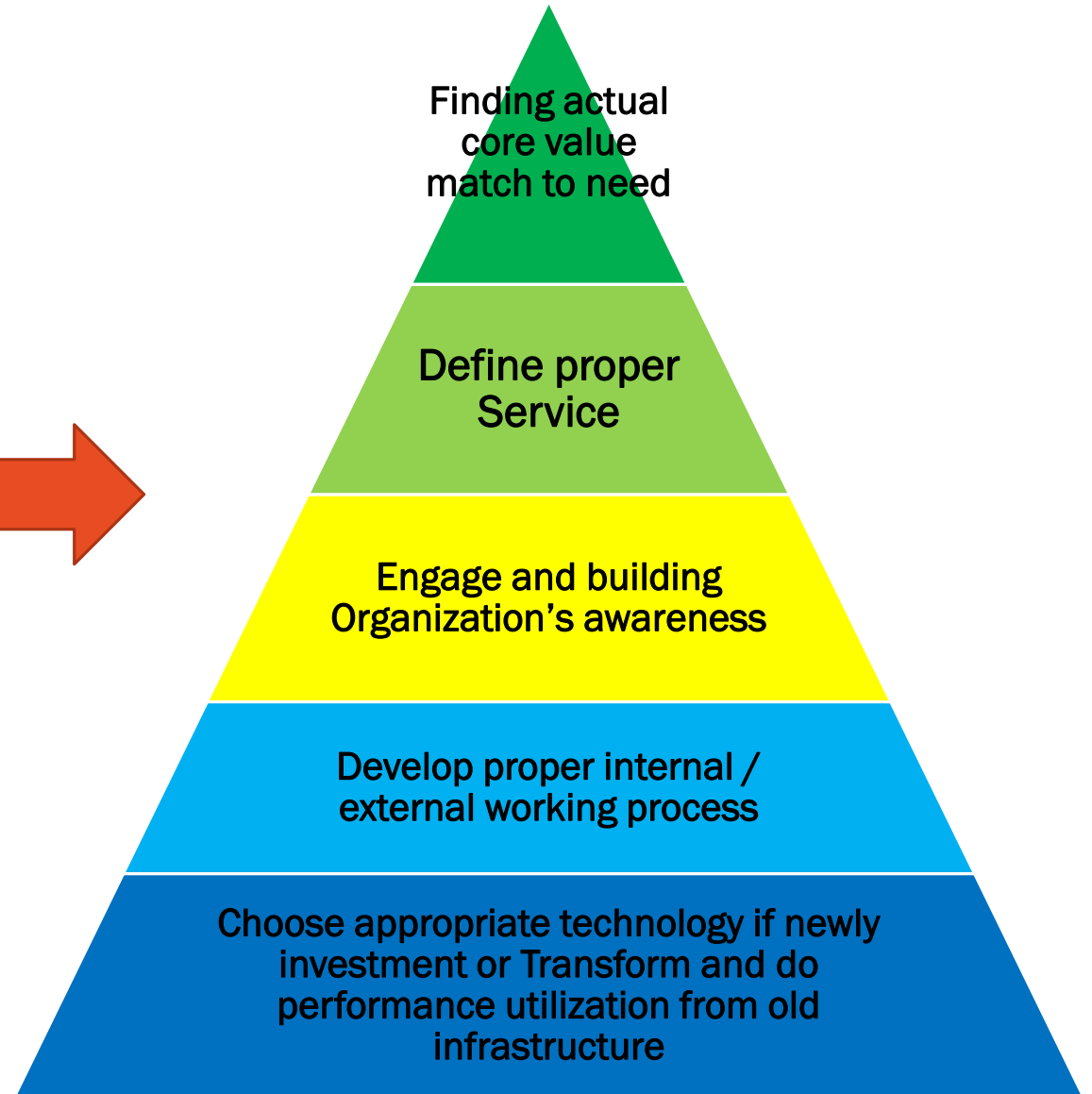
Danarlat T.



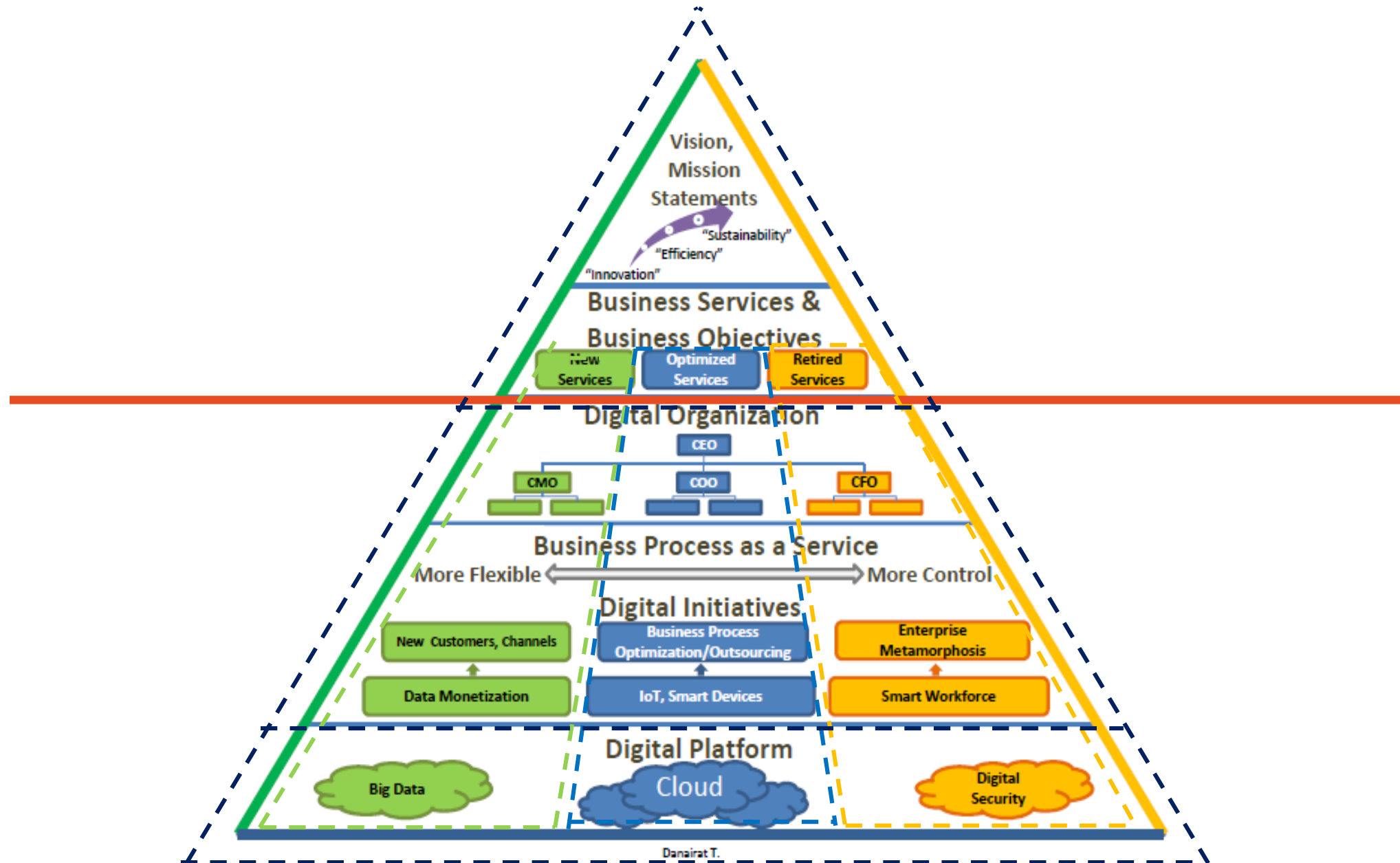




Danairat T.



Paramintara Y.



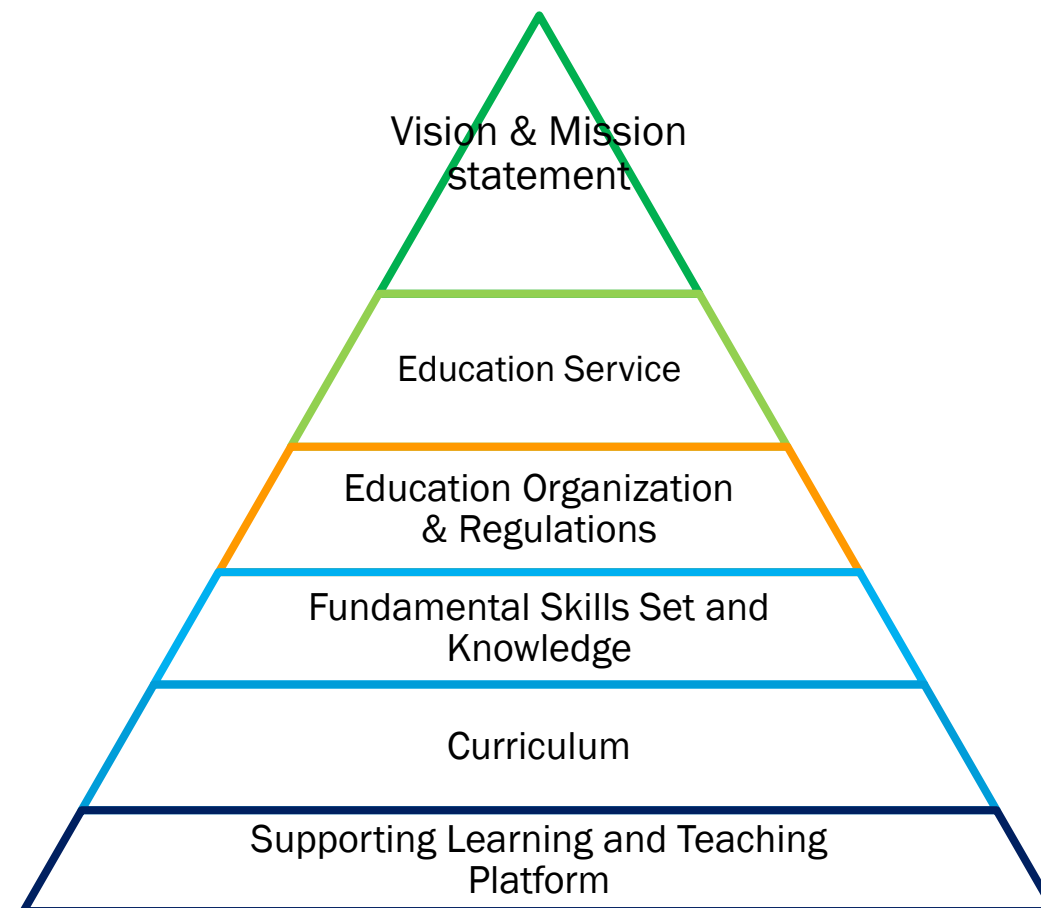
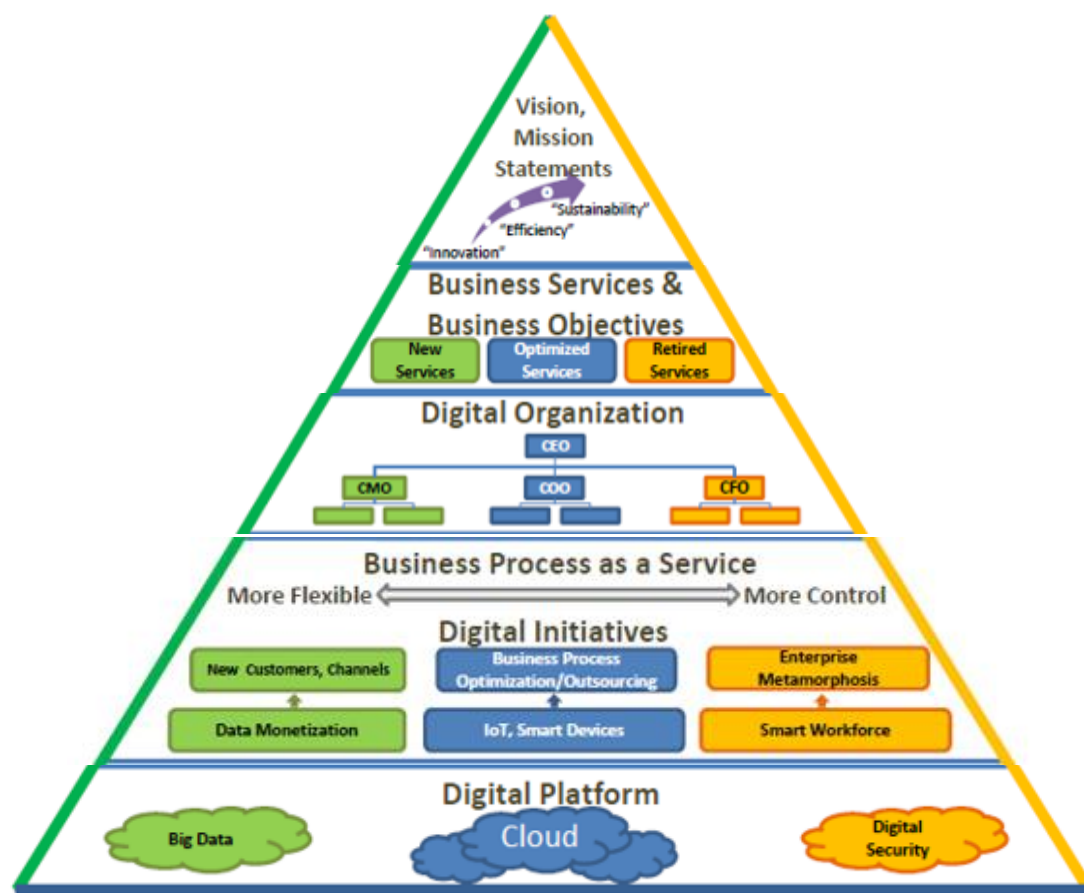
Objectives

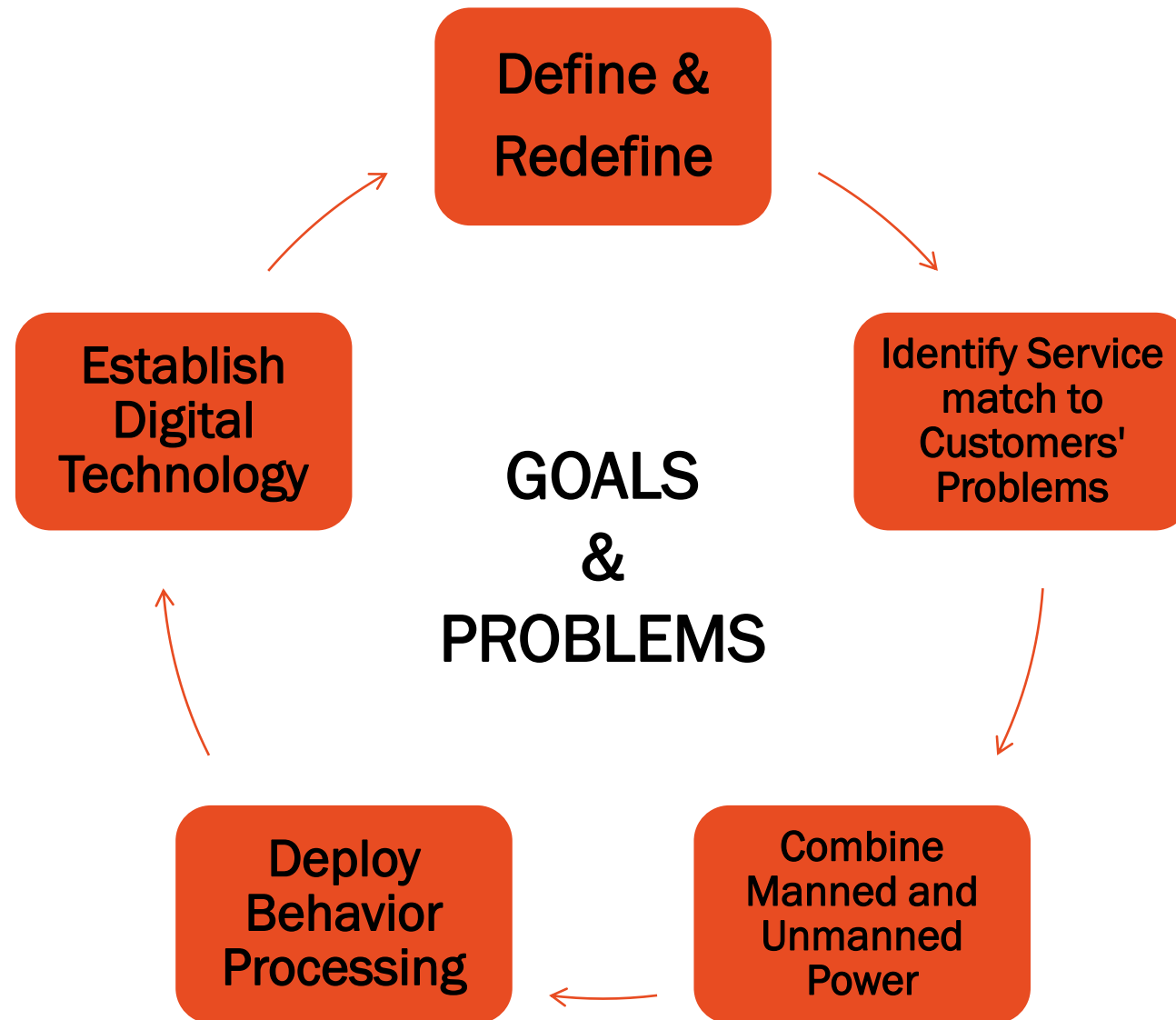
- let's every educational parties re-think about *present* “*paradigm-shift*” of Thailand education changing
- Digital transformation for Education is not digital touch point. Universities and Lecturers are need to build

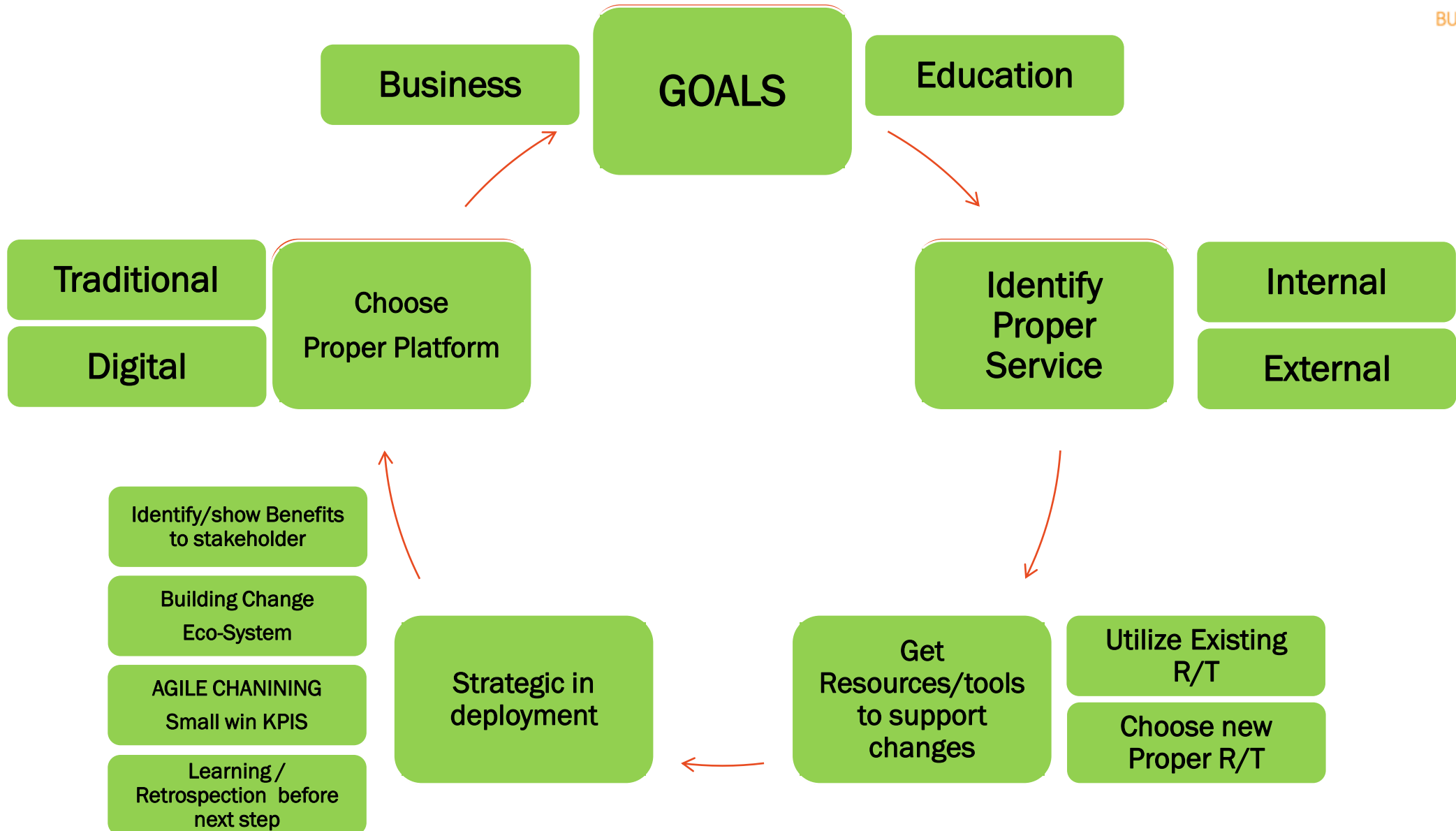
Conversion DT2ET

EDUCATION TRANSFORMATION REFERENCE MODEL ABLE TO CHANGE, ADJUST, CUTTING OR ADDING BASED ON YOUR PROPOSITION. ABLE TO SWAP LAYER AND TRANSFORM SOME LAYER MATCH TO YOU PLAN.

DT2ET

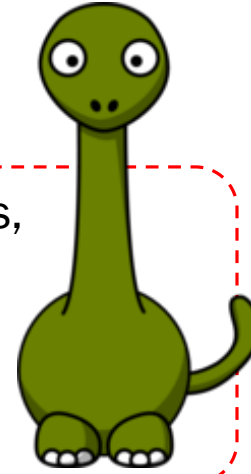






Education Transformation step

- **Most difficult step** to fight with out-of-date rules and regulations, Waiting **'Hero'** to unlock this barrier.
- Do not waste the time to wait
- Will become **disruptive factors** to Thai-Education system
- **USE Education Transformation Model as Guideline**



4

Fully Education Transformation

- **Hopefully will have some kick off's impact ASAP**
- **USE Education Transformation Model as Guideline**



3

Semi-Education Transformation

- **Easier to do** with Division/Faculty's autonomy this steps can be done ASAP
- **Can suddenly do** without changing in what teacher could not control = Teacher have fully autonomy in their class

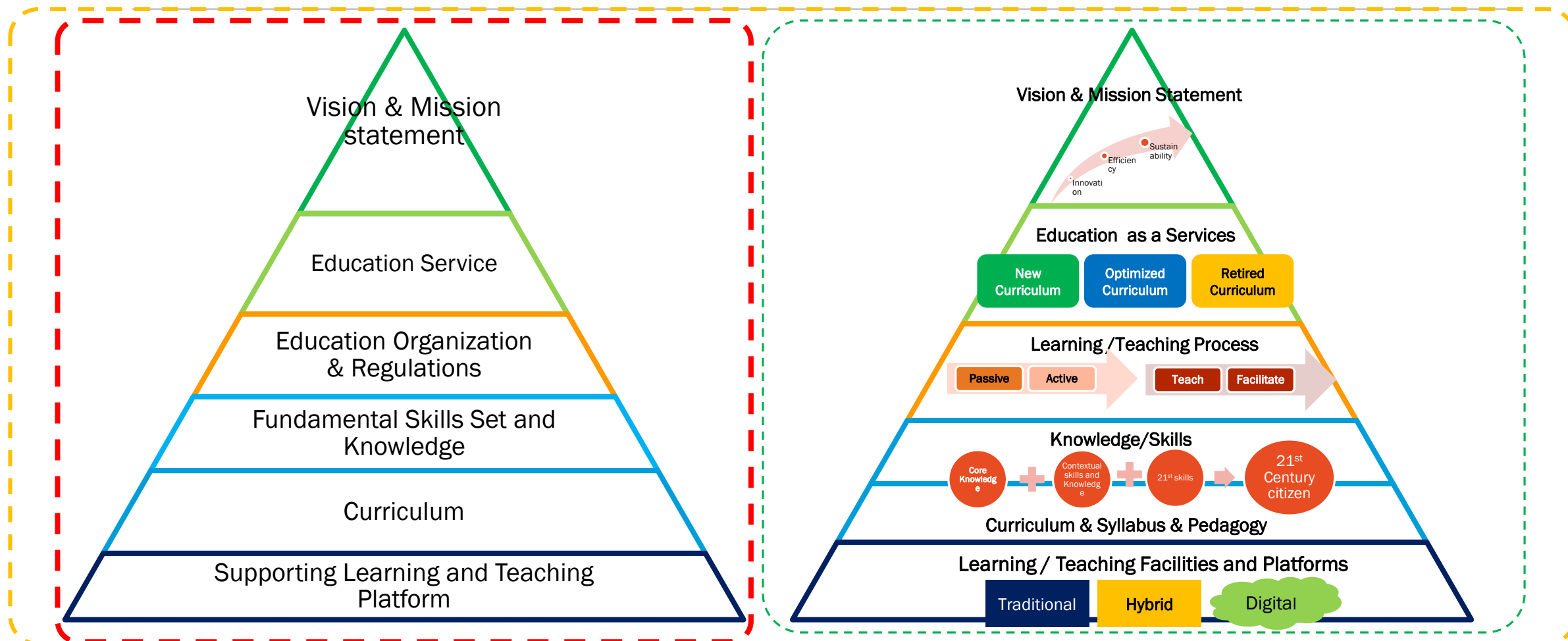
2

Curriculum Transformation (CT)

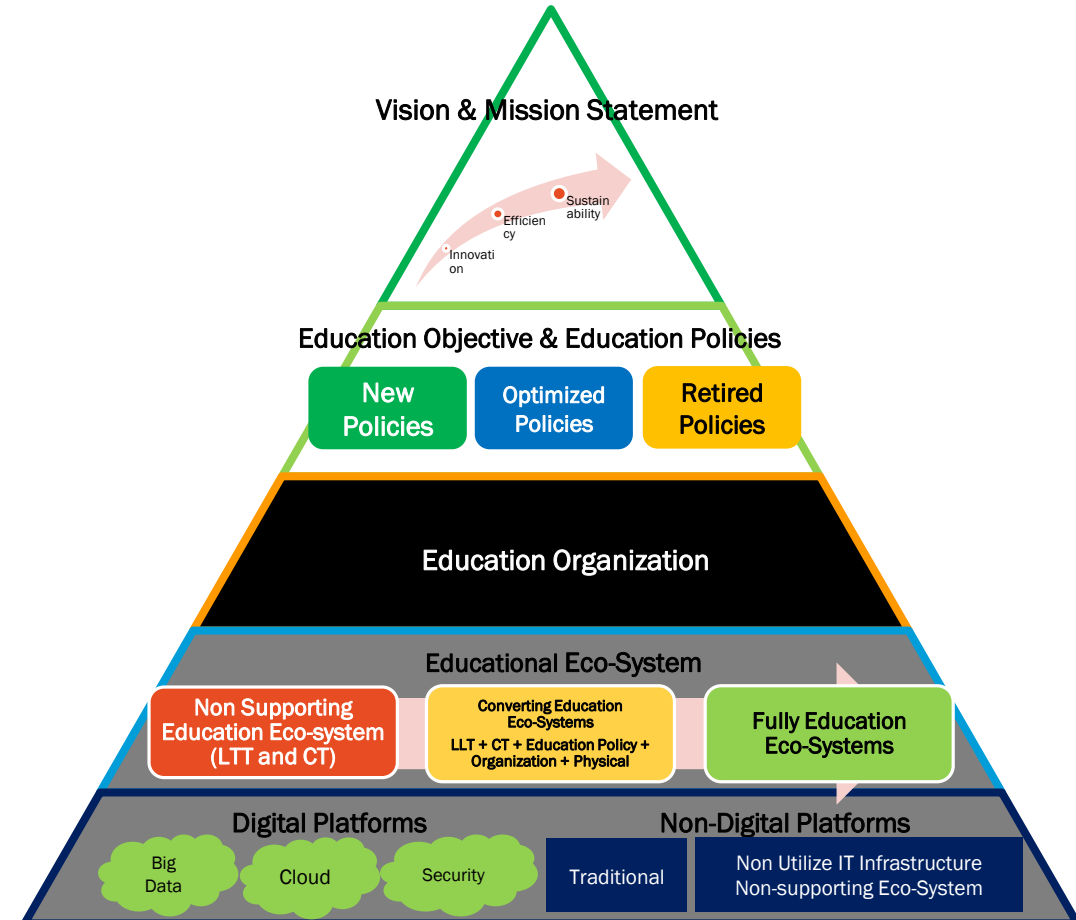
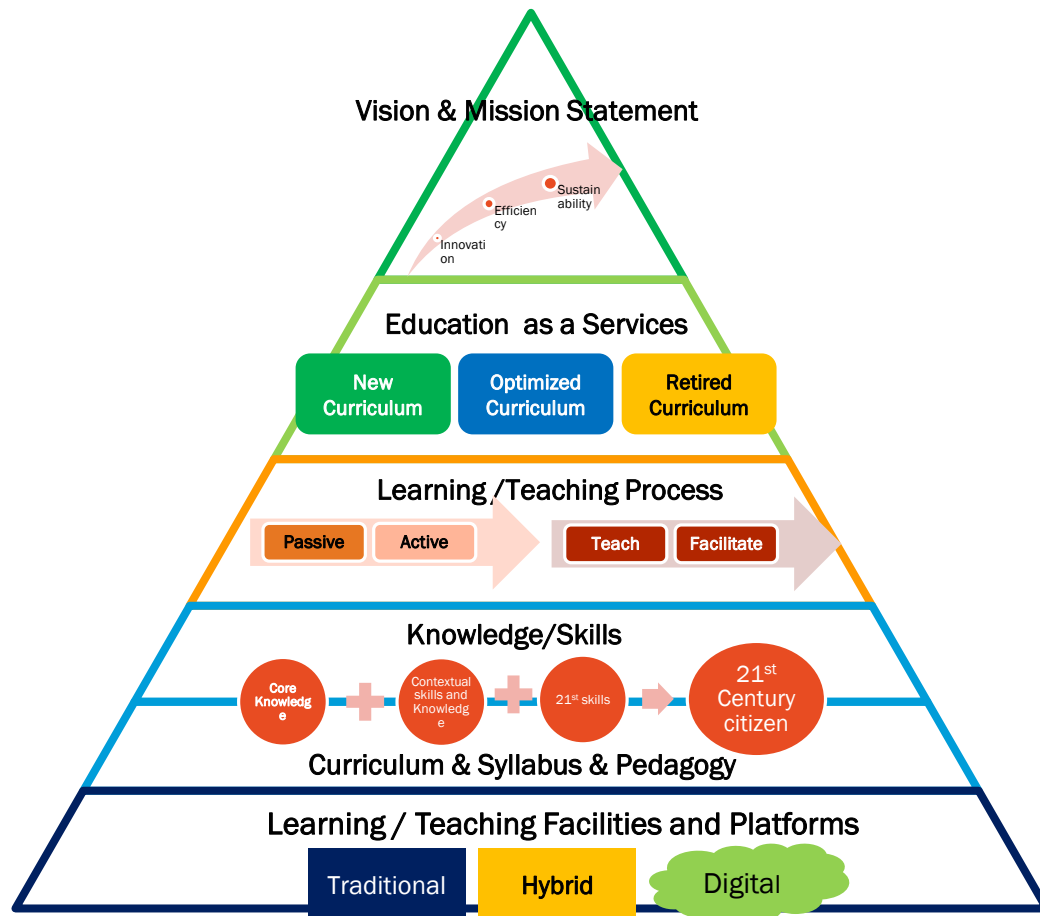
1

Learning / Teaching Transformation (LTT)

ET1.0 to CT; Curriculum Transformation Context

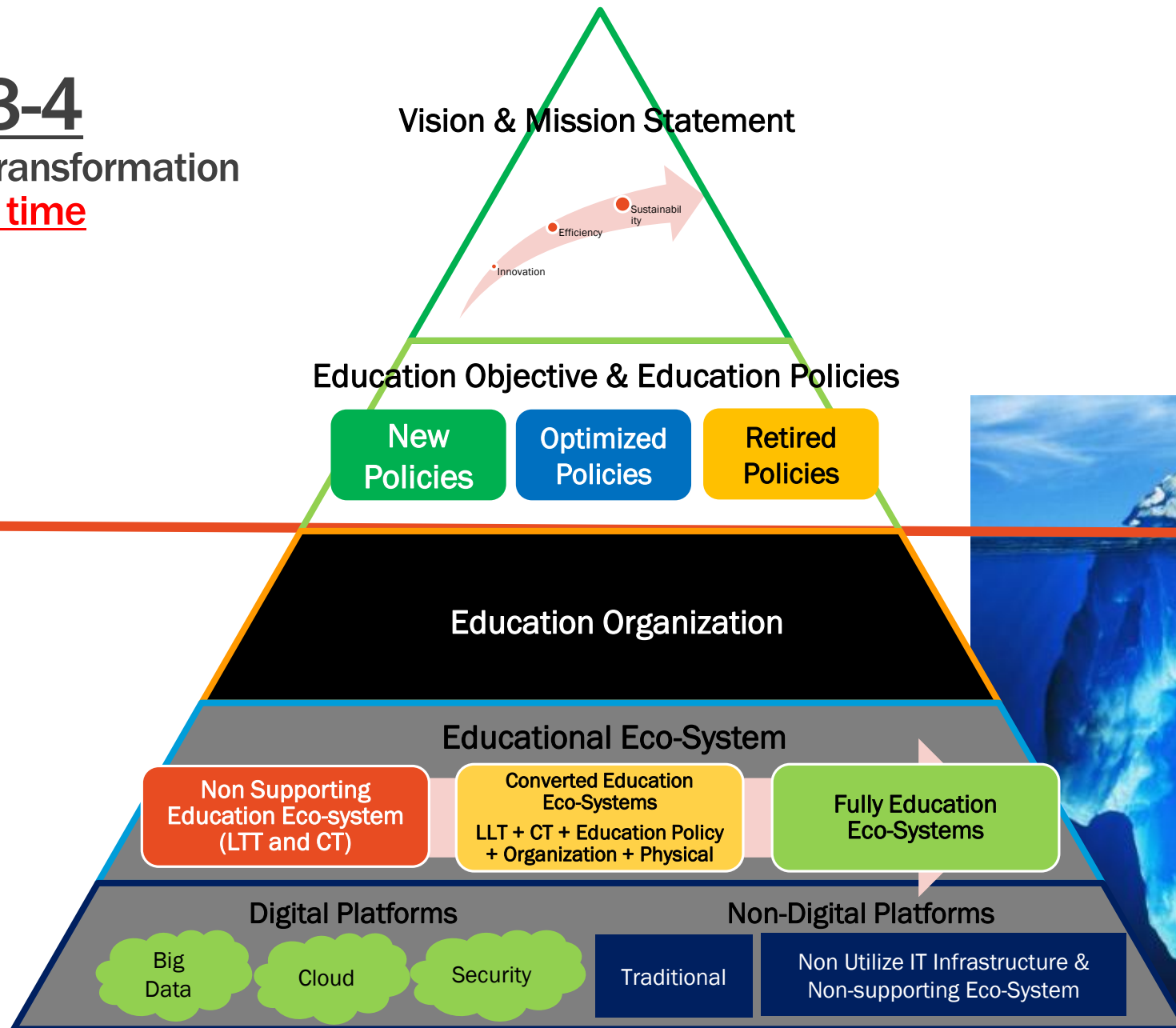
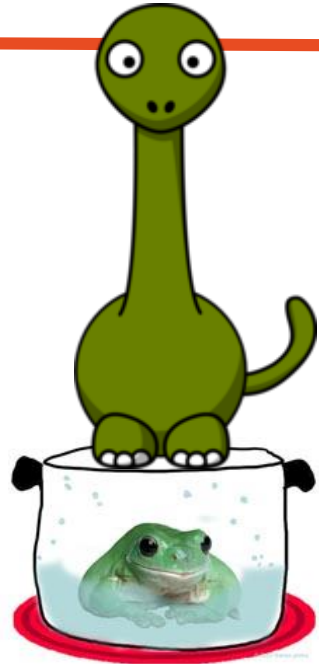


ET Level 1-2 to ET Level 3-4;

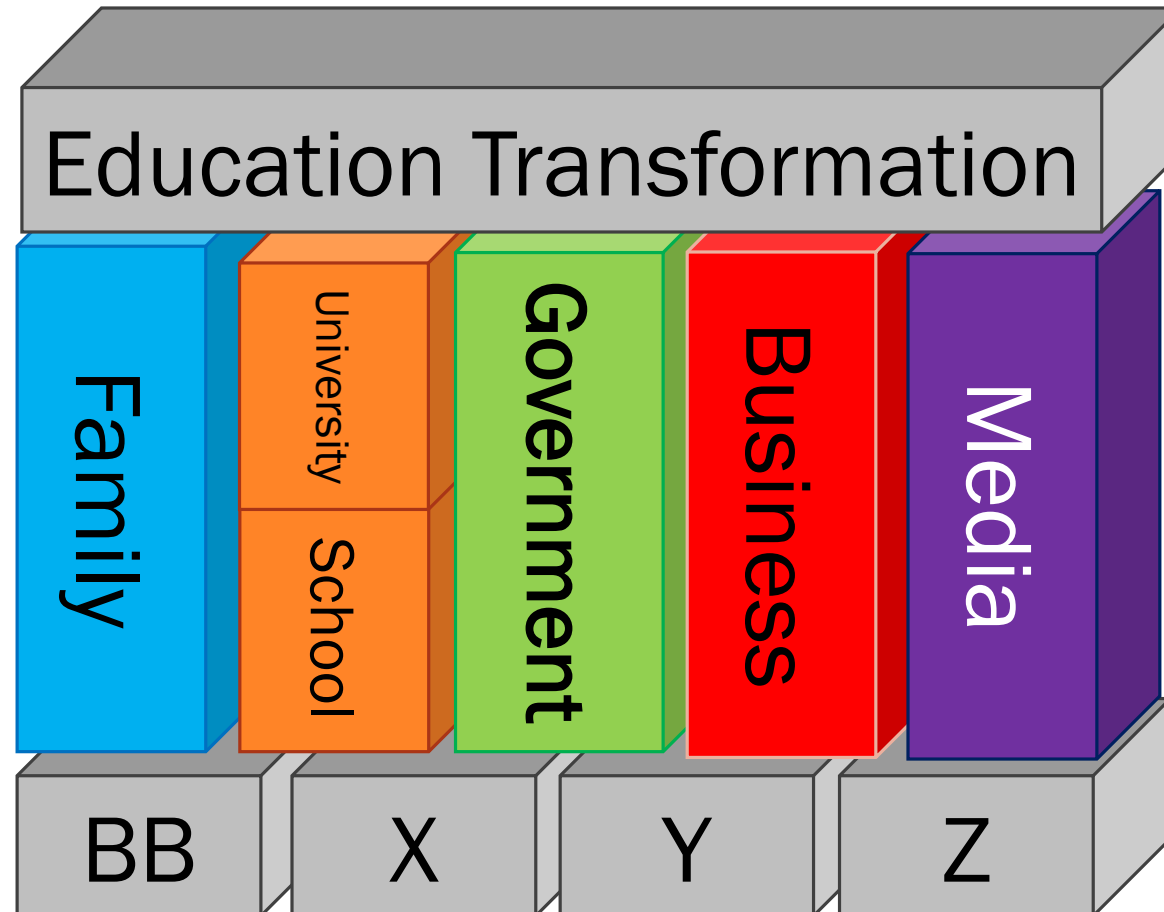


ET1.3 Level 3-4

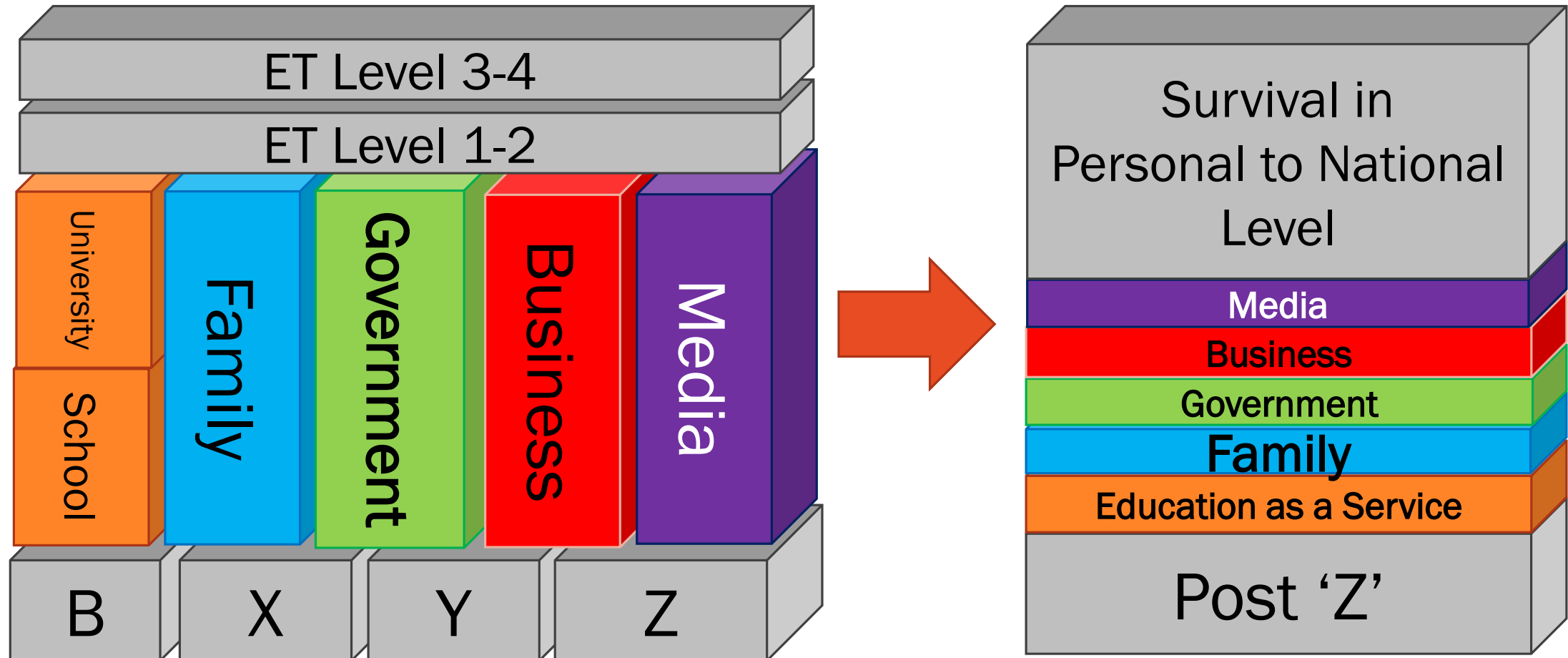
Semi2Fully Education Transformation
2017; **Do not waste the time**



5 Pillars and 4 Generations of TH Education Transformation

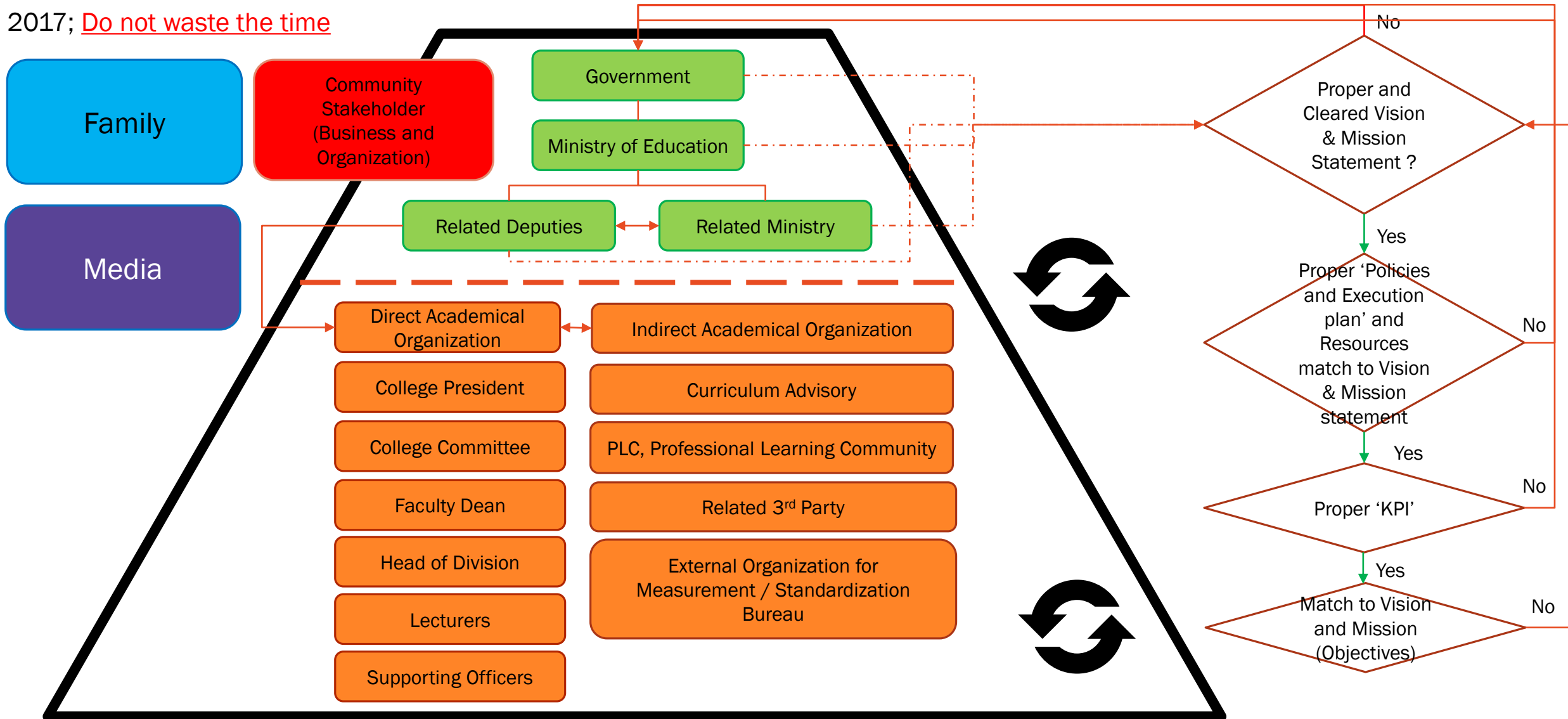


5 Pillars and 4 Generations of TH Education Transformation Level 1-4



ET Level 3-4; TH Education Organization Layer

2017; Do not waste the time



ET Level 3-4; Education Eco-System Layer

2017; Do not waste the time

Educational Eco-System

Non Supporting
Education Eco-system
(LTT and CT)

Converted Education
Eco-Systems
LLT + CT + Education Policy
+ Organization + Physical

Fully Education
Eco-Systems

LTT Approach Learning and Teaching Transformation

EDUCATION TRANSFORMATION REFERENCE MODEL ABLE TO CHANGE, ADJUST, CUTTING OR ADDING BASED ON YOUR PROPOSITION. ABLE TO SWAP LAYER AND TRANSFORM SOME LAYER MATCH TO YOU PLAN.

LTT Definition

Learning



Teaching

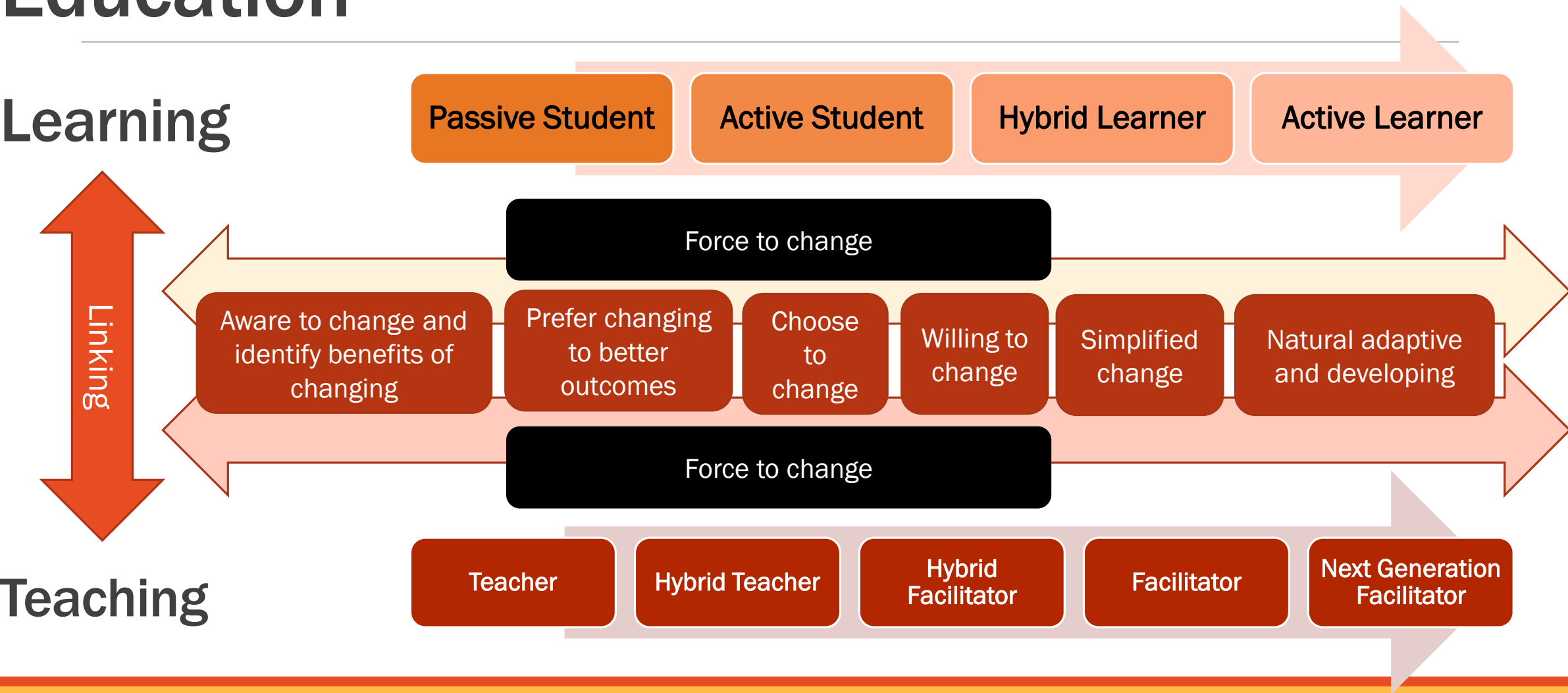
Passive

Active

Teach

Facilitate

LTT Methodology to Ordinary Thailand Education



BASIS FOR COMPARISON	SYLLABUS	CURRICULUM
Meaning	Syllabus is the document that contains all the portion of the concepts covered in a subject.	Curriculum is the overall content, taught in an educational system or a course.
Origin	Syllabus is a Greek term.	Curriculum is a Latin term.
Set for	A subject	A course
Nature	Descriptive	Prescriptive
Scope	Narrow	Wide
Set out by	Exam board	Government or the administration of school, college or institute.
Term	For a fixed term, normally a year.	Till the course lasts.
Uniformity	Varies from teacher to teacher.	Same for all teachers.

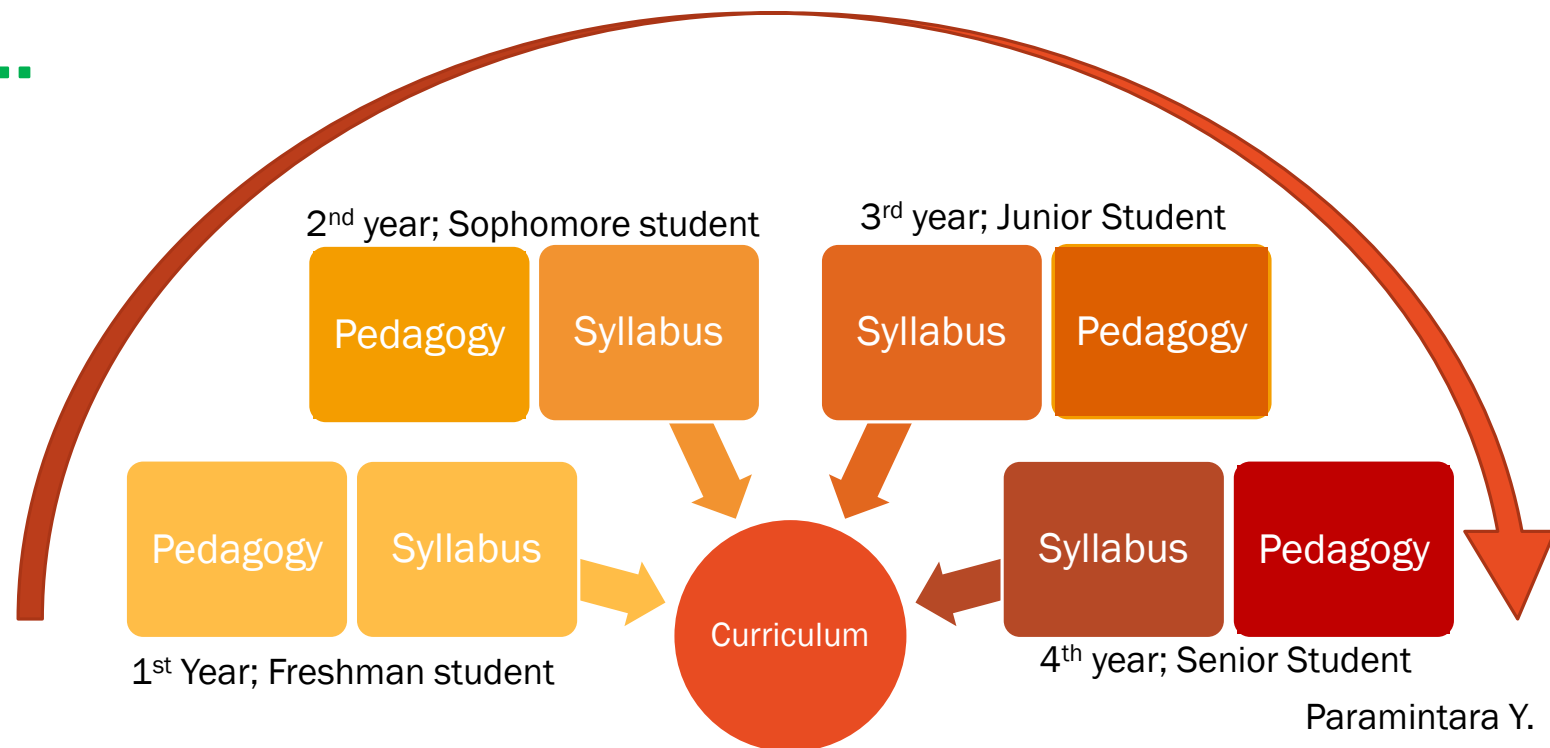
Key different Syllabus VS Curriculum

<http://keydifferences.com/difference-between-syllabus-and-curriculum.html>

Connected from LTT to CT

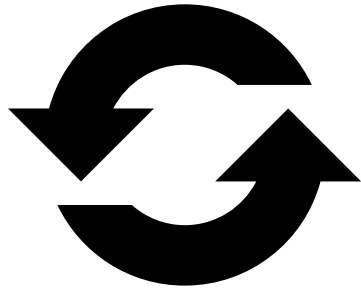
Objective: Define 'outcomes'
match to ...(Value)...

- Activity (Pedagogy)
- Syllabus
- Curriculum

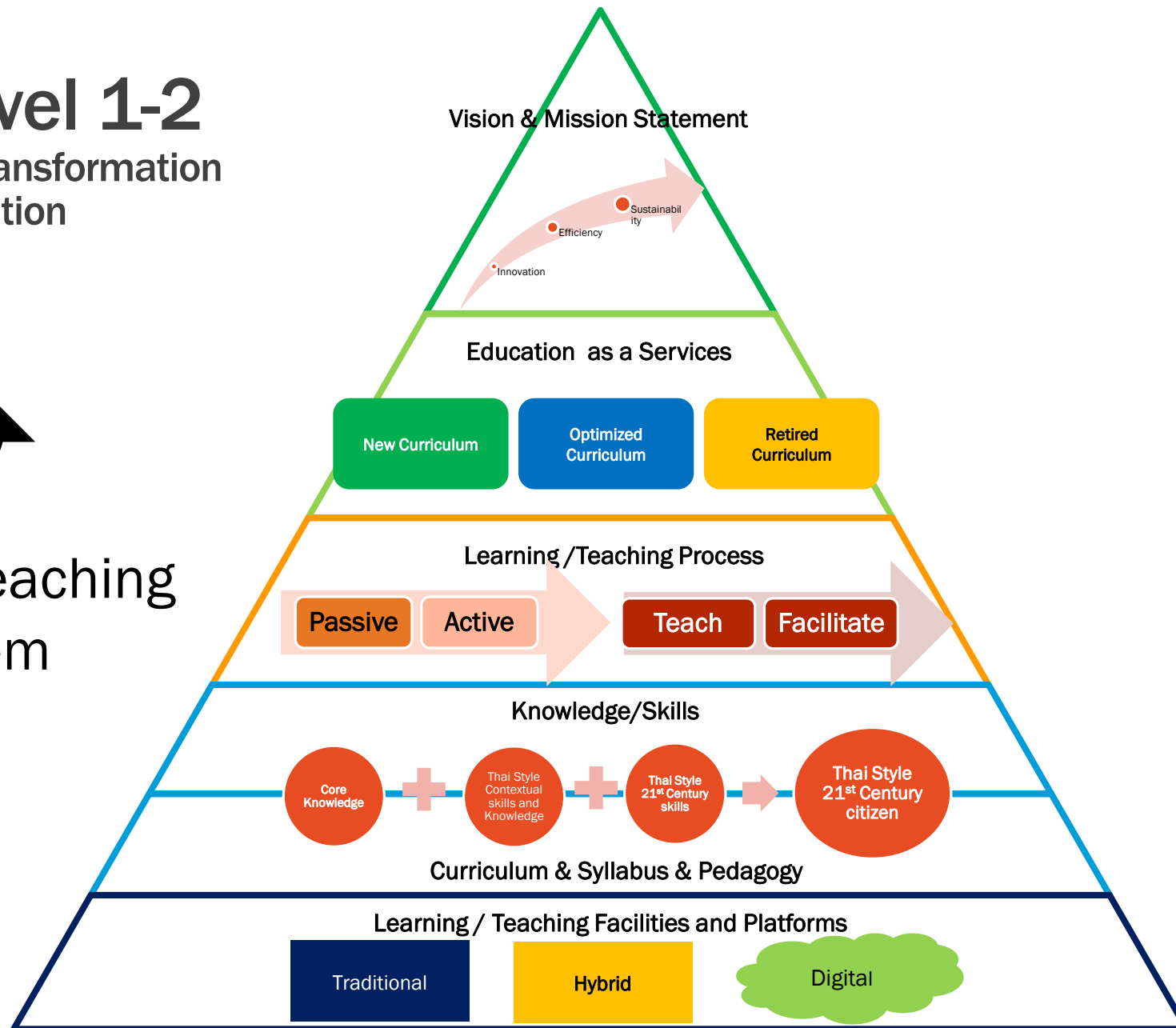


LTT & CT; Level 1-2

Learning & Teaching Transformation
Curriculum Transformation

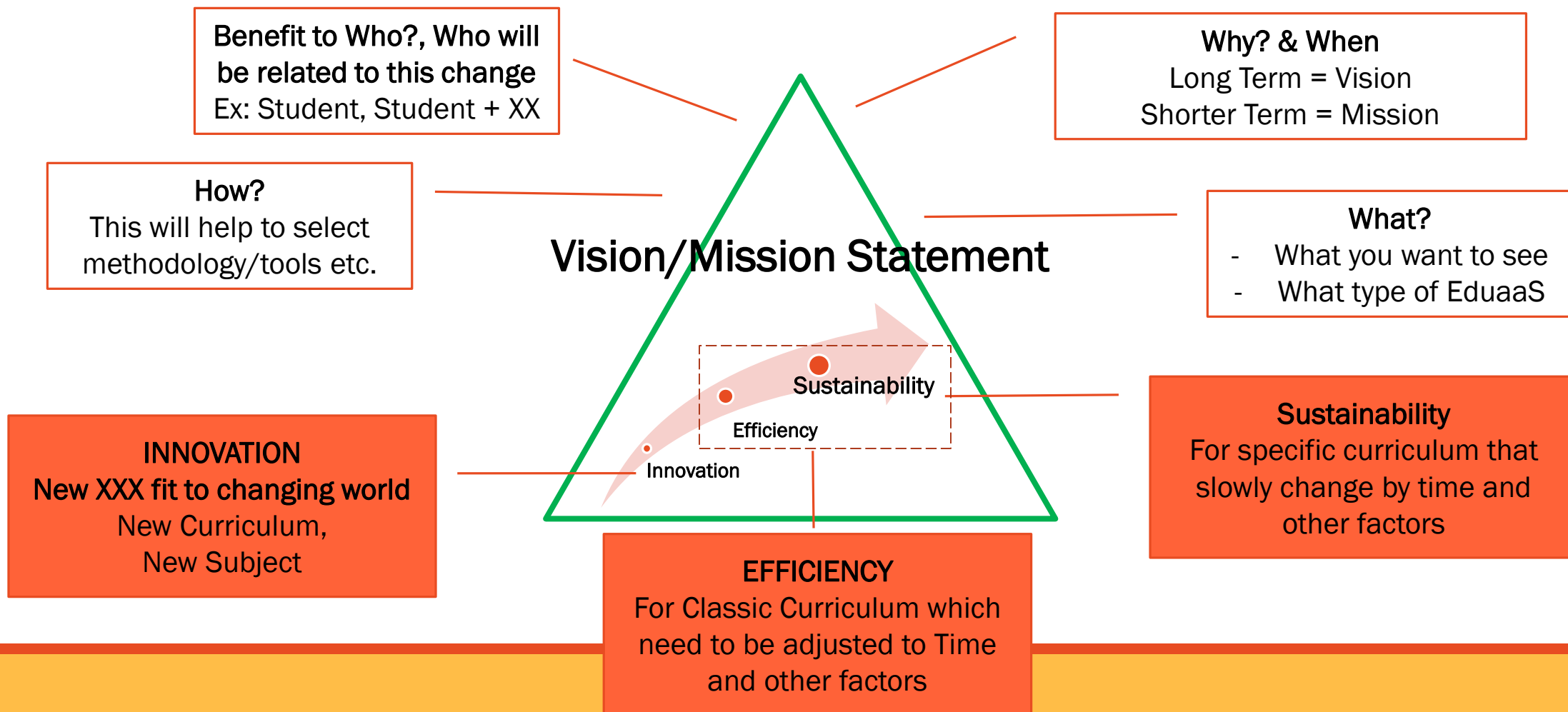


Learning and Teaching
Eco-System

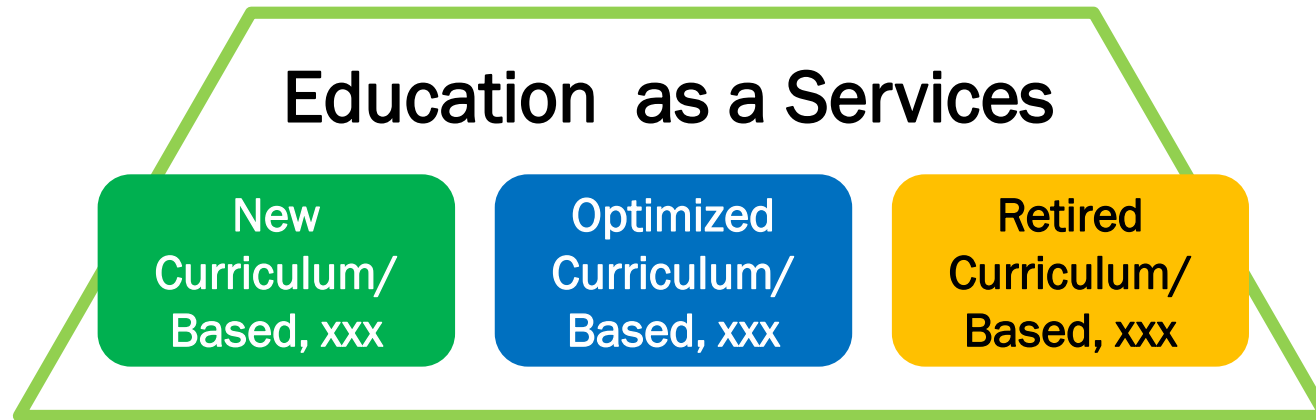


LTT&CT; Vision and Mission Statement

Sample of asking (Can ask more than sample)



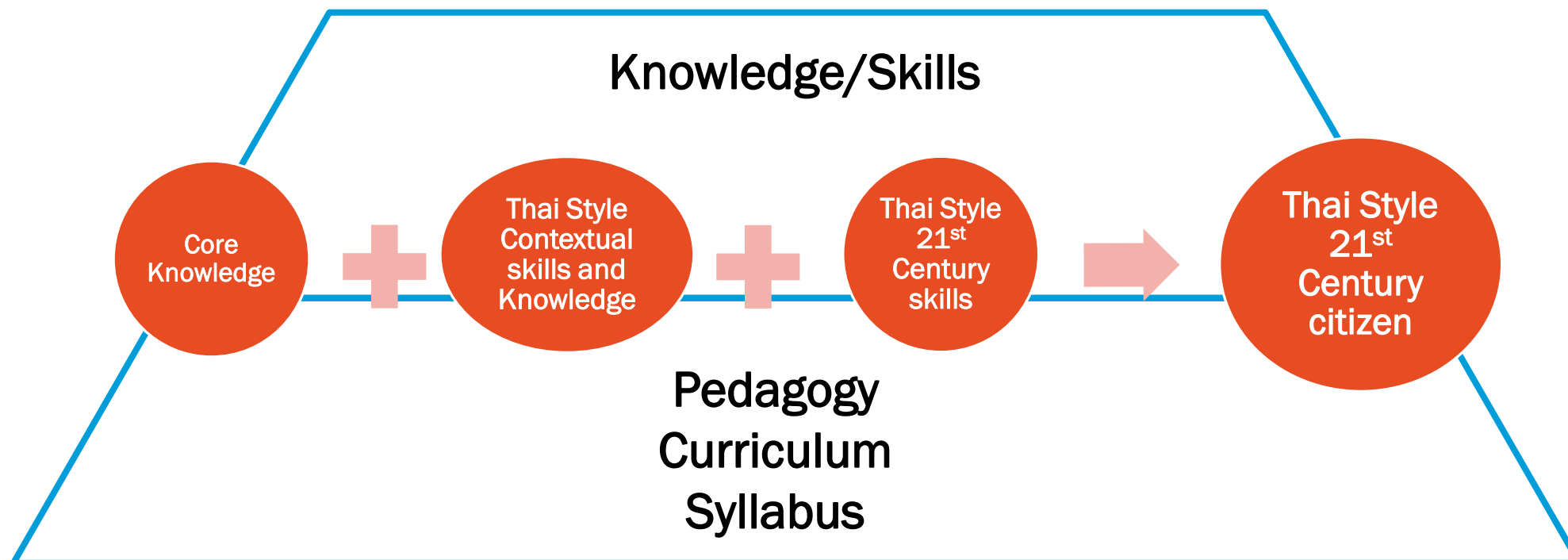
LTT&CT; Education as a Services (EDuaaS)



LTT&CT; Learning / Teaching Process



LTT&CT; Knowledge/Skill + Pedagogy/Curriculum/Syllabus



LTT&CT; Learning / Teaching Facilities and Platforms

Learning / Teaching Facilities and Platforms

Traditional

Hybrid
(Tradition + IT)

Digital

Excel form

based on LTT Template Version 1.3

ขอขอบคุณ อาจารย์ ชีรภัทร สุวรรณรุจิ, มหาวิทยาลัยราชภัฏเทพสตรี
ผู้สร้าง Excel ในการช่วยกรอก Template



PDF Template:

<https://drive.google.com/file/d/0ByIJDipucrIHaTFQVGVNZ29nOEE/view?usp=sharing>



Excel Filling Template:

<https://drive.google.com/file/d/0ByIJDipucrIHV2VpakpoYjZESDQ/view?usp=sharing>



Clip สาธิตการใช้งาน:

<https://www.facebook.com/ArtTeerapat/videos/10155633578399905/>

Curriculum Transformation Workshop Template V.1.3: Subject Level

MonsoonSIM Seminar 2017 (Paramintara Yaoyuenyong)

MonsoonSim
Thailand
BUSINESS SIMULATION

Version: _____

Date/Time: _____

Subject:

Outcomes:

.....

.....

Key concepts/Key Activities:

1.

2.

3.

4.

Type:

- ☐ New
- ☐ Optimize
- ☐ Retire

For:

- ☐ 1st year
- ☐ 2nd year
- ☐ 3rd year
- ☐ 4th year
- ☐

In charged
Team:

- ☐ Individual
- ☐ Cross
Division
- ☐ Cross-
schools
- ☐
- ☐

Embedded Skills:

- ☐ Critical Thinking;%
- ☐ Collaboration;%
- ☐ Creativity;%
- ☐ Communication,%
- ☐,%
- ☐,%

Teaching Based:

- ☐ Knowledge Based; %
- ☐ Problem Based;%
- ☐ Project Based;%
- ☐,%
- ☐,%

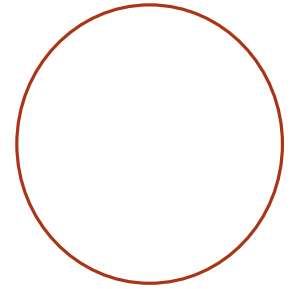
Learning Based:

- ☐ Knowledge Based; %
- ☐ Problem Based;%
- ☐ Project Based;%
- ☐,%
- ☐,%

Technology & Tools (What to use, Purpose, Weight)

- ☐,,
- ☐,,
- ☐,,

Time Utilize: , ,



Phasing: put linkage arrow as appropriate

Pre-requisite



In Subject Process



Pass to next level



DON'T DO THIS (Risk):

Measurement:

- ☐,%
- ☐,%
- ☐,%
- ☐,%
- ☐,%

Activity Design form for Subject Level; LTT approaching

last updated 25 JUN 2017 (Paramintara Yaoyuenyong)

Activity no.

Type:

- ☐ New
- ☐ Optimize
- ☐ Retire

For:

- ☐ 1st year
- ☐ 2nd year
- ☐ 3rd year
- ☐ 4th year
- ☐

In charged Team:

- ☐ Individual
- ☐ Cross Division
- ☐ Cross-schools
- ☐
- ☐

.....
For Subject:

.....
Activity name:

.....
Outcome for this activity:

.....
Key concepts:

Prefer skills from this activity:

- ☐ Critical Thinking;%
- ☐ Collaboration;%
- ☐ Creativity;%
- ☐ Communication,%
- ☐,%
- ☐,%

Measurement:

- ☐,%
- ☐,%
- ☐,%
- ☐,%
- ☐,%
- ☐,%

Required Equipment

- ☐,sets
- ☐,sets
- ☐,sets
- ☐,sets

Required Facility

- ☐ Internet Connectivity
- ☐ LCD Projectors
- ☐ Microphone / Audio Line
- ☐

Function room Setup

- ☐ Cluster
- ☐ U-shape
- ☐ Classroom
- ☐

This activity based on:

(Recommend to choose only one)

- ☐ Problem Based
- ☐ Project Based
- ☐
- ☐

Student Group size:

- ☐ 2 people
- ☐ 3-5 people
- ☐ 6-8 people
- ☐
- ☐

Timing:

- ☐ Minutes
- ☐ Hours
- ☐ Days
- ☐ Months
- ☐ Redo times

Noted / DON'T DO THIS (Risk):

Education Transformation V1.0 Round Table for TH Education Transformation



Version: _____ Date/Time: _____ Writer: _____

Project:

Assumptions/Constraints:.....

Outcomes:.....

Key concepts/Key Activities:

- 1.
- 2.
- 3.
- 4.

Measurement:

- 1.
- 2.
- 3.
- 4.

Stakeholders:

- 1.
- 2.
- 3.

Stakeholder's Benefits/Return:

- 1.
- 2.
- 3.

Deployment Plan:



Type:

- ☐ New
- ☐ Optimize
- ☐ Retire

Project Type:

- ☐ Family
- ☐ Education
- ☐ Government
- ☐ Business
- ☐ Media

Project Owner:

.....
.....

Co-Ordinate with :

- ☐ No need
- ☐ Family
- ☐ Education
- ☐ Government
- ☐ Business
- ☐ Media

Project Partners:

.....
.....

Project Time Frame:

From

- ☐ 2018 ☐ 2019 ☐ 2020 ☐ 2020
- ☐ Q1 ☐ Q2 ☐ Q3 ☐ Q4

To

- ☐ 2018 ☐ 2019 ☐ 2020 ☐ 2020
- ☐ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Resources/Tools:

- ☐ Funding THB
- ☐ Sourcing
- ☐
- ☐
- ☐

Risks/Issues/Note:

Workshop ออกแบบชั้นเรียน

ปรับปรุงเพื่อ Workshop ที่ ม.ราชภัฏศรีสะเกษ ตุลาคม 2018 (Paramintara Yaoyuenyong)

MonsoonSim
Thailand
BUSINESS SIMULATION

Version: _____

วันและเวลาที่บันทึก: _____

ชื่อวิชา: _____

ประโยชน์ที่นักเรียน/ นักศึกษาจะได้รับจากชั้นเรียน: _____

กิจกรรมหลัก/ หลักการสำคัญของแผนนี้:

1. _____

2. _____

3. _____

4. _____

ประเภท:

- ☐ ใหม่
- ☐ ปรับปรุง
- ☐ เลิกใช้

For:

ทีมที่
เกี่ยวข้อง:

- ☐ สอนเดี่ยว
- ☐ ต้อง
ประสานงาน
ขอความ
ร่วมมือกับ

ทักษะที่จะถูกใช้ในชั้นเรียนนี้:

- ☐ Critical Thinking;%
- ☐ Collaboration;%
- ☐ Creativity;%
- ☐ Communication,%
- ☐%
- ☐%

วิธีการสอนในชั้นเรียน:

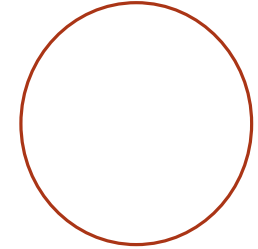
- ☐ Knowledge Based; %
- ☐ Problem Based;%
- ☐ Project Based;%
- ☐%
- ☐%

วิธีการเรียนรู้ของนักเรียน:

- ☐ Knowledge Based; %
- ☐ Problem Based;%
- ☐ Project Based;%
- ☐%
- ☐%

แผนการใช้เวลาในวิชานี้: .

..... , ,



Phasing: put linkage arrow as appropriate

Pre-requisite



In Subject Process



Pass to next level



เตือนใจตัวเองว่า จะไม่ทำสิ่งนี้ใน
ชั้นเรียน:

การวัดผล:

- ☐%
- ☐%
- ☐%
- ☐%
- ☐%

เทคโนโลยี, เครื่องมือ, สื่อการสอนที่จะต้องใช้ (อะไร, เพื่อวัตถุประสงค์ใด, เมื่อใด)

- ☐
- ☐
- ☐

การออกแบบกิจกรรมที่เกี่ยวข้องในกระบวนการ LTT

last updated 25 JUN 2017 (Paramintara Yaoyuenyong)

กิจกรรมหมายเลข/.....

กิจกรรมสำหรับวิชา:

ชื่อกิจกรรม:

ประโยชน์ที่ได้จากกิจกรรมนี้ ในวิชา:

ประเภท:

- ☐ ใหม่
- ☐ ปรับปรุง
- ☐ เลิกใช้

For:

ทีมที่
เกี่ยวข้อง:

- ☐ สอนเดี่ยว
- ☐ ต้อง
ประสานงาน
ขอความ
ร่วมมือกับ
.....

Prefer skills from this activity:

- ☐ Critical Thinking;%
- ☐ Collaboration;%
- ☐ Creativity;%
- ☐ Communication,%
- ☐%
- ☐%

วัดผลอย่างไร:

- ☐%
- ☐%
- ☐%
- ☐%
- ☐%

อุปกรณ์ที่จำเป็นต้องมีสำหรับกิจกรรมนี้

- ☐ ชุด
- ☐ ชุด
- ☐ ชุด
- ☐ ชุด

เครื่องมือโสตที่ต้องมี

- ☐ Internet Connectivity
- ☐ LCD Projectors
- ☐ Microphone / Audio Line
- ☐

การจัดห้องสำหรับกิจกรรม

- ☐ Cluster
- ☐ U-shape
- ☐ Classroom
- ☐

กิจกรรมนี้เป็นประเภทใด:
(ต้องระบุ)

- ☐ Problem Based
- ☐ Project Based
- ☐ Gamification
- ☐

จำนวนนักเรียนต่อกลุ่ม:

- ☐ 2 คน
- ☐ 3-5 คน
- ☐ 6-8 คน
- ☐
- ☐

ระยะเวลาที่ใช้:

- ☐ นาที
- ☐ ชั่วโมง
- ☐ วัน
- ☐ เดือน
- ☐ ทำซ้ำ ครั้ง

Noted / DON'T DO THIS (Risk):

Education Transformation V1.0 Round Table for TH Education Transformation



Version: _____ Date/Time: _____ Writer: _____

Project:

Assumptions/Constraints:.....

Outcomes:.....

Key concepts/Key Activities:

- 1.
- 2.
- 3.
- 4.

Measurement:

- 1.
- 2.
- 3.
- 4.

Stakeholders:

- 1.
- 2.
- 3.

Stakeholder's Benefits/Return:

- 1.
- 2.
- 3.

Deployment Plan:



Type:

- ☐ New
- ☐ Optimize
- ☐ Retire

Project Type:

- ☐ Family
- ☐ Education
- ☐ Government
- ☐ Business
- ☐ Media

Project Owner:

.....
.....

Co-Ordinate with :

- ☐ No need
- ☐ Family
- ☐ Education
- ☐ Government
- ☐ Business
- ☐ Media

Project Partners:

.....
.....

Project Time Frame:

From

- ☐ 2018 ☐ 2019 ☐ 2020 ☐ 2020
- ☐ Q1 ☐ Q2 ☐ Q3 ☐ Q4

To

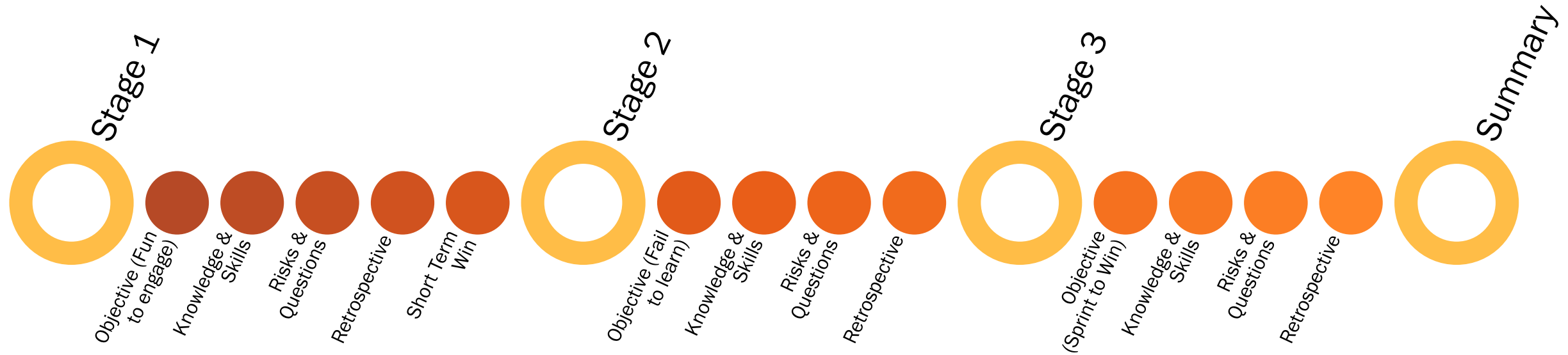
- ☐ 2018 ☐ 2019 ☐ 2020 ☐ 2020
- ☐ Q1 ☐ Q2 ☐ Q3 ☐ Q4

Resources/Tools:

- ☐ Funding THB
- ☐ Sourcing
- ☐
- ☐
- ☐

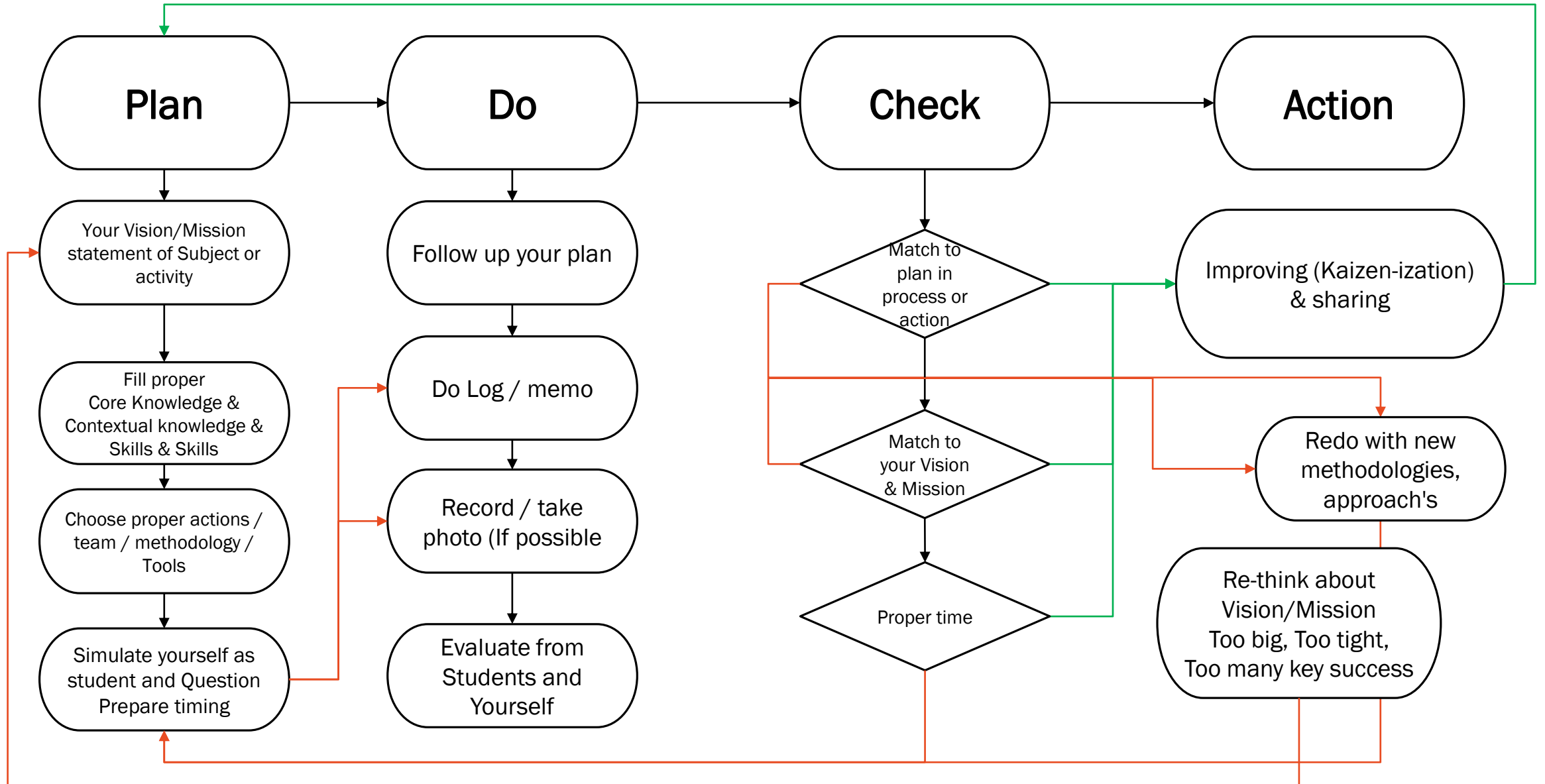
Risks/Issues/Note:

Student's Learning Journey to Class/Activity/Game



PDCA your Syllabus and Related activities

last updated 25 JUN 2017 (Paramintara Yaoyuenyong)



AGILE METHODOLOGY in Education Transformation

PARAMINTARA YAOYUENYONG

What is Agile?

- Break changing to smaller project, shorter plan, Learning from mistake (Retrospective)



Why use agile methodology?

- ❑ Short Term Goal as a project
- ❑ able to start new plan > Sprint > next plan
- ❑ Every parties will able to do together

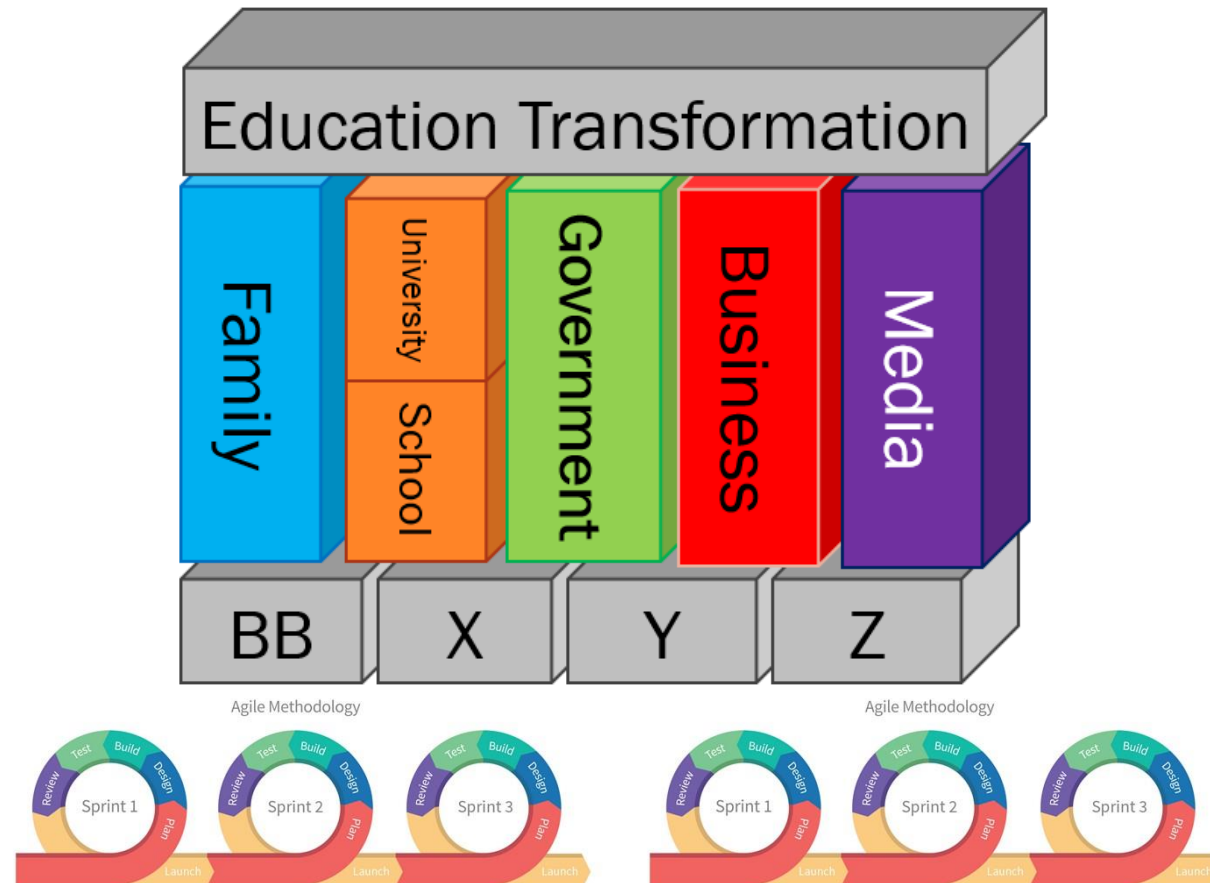
EXTERNAL POLICY



INTERNAL LTT & CT

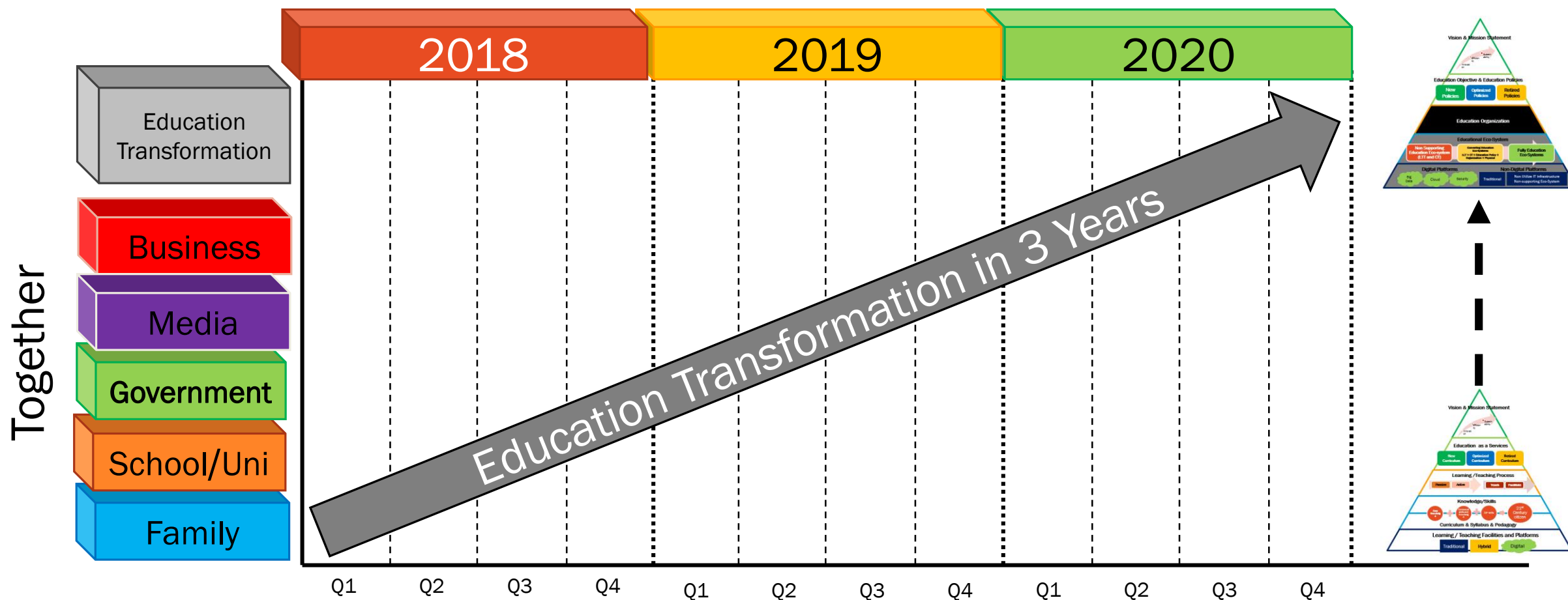


Integrate 'Agile' to 5 Pillars of Education Transformation



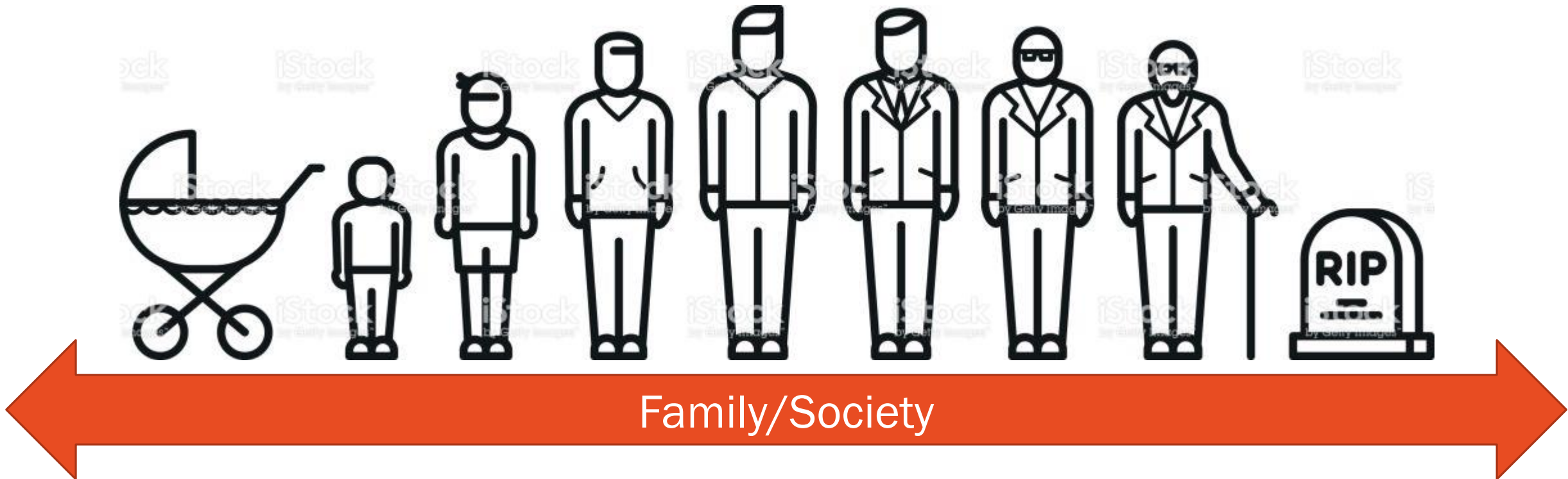
Time Frame

Waiting for team to help

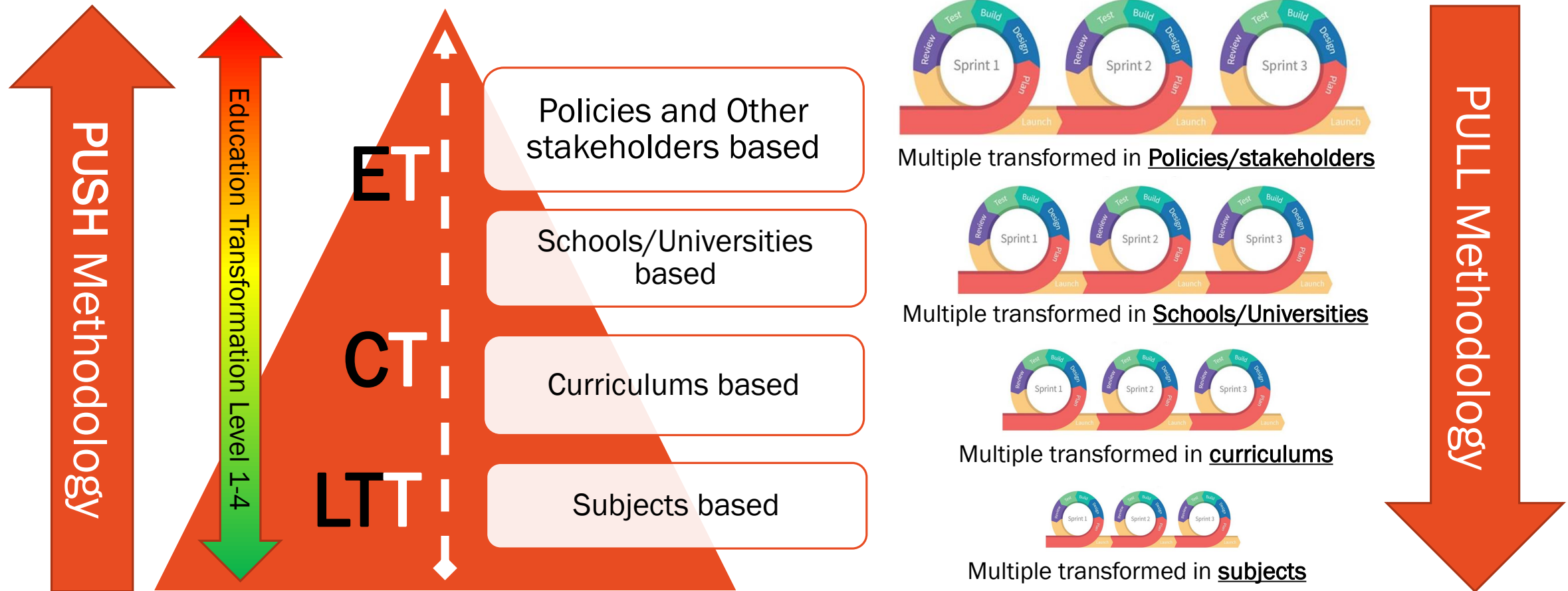


EDUCATION TRANSFORMATION (ET)

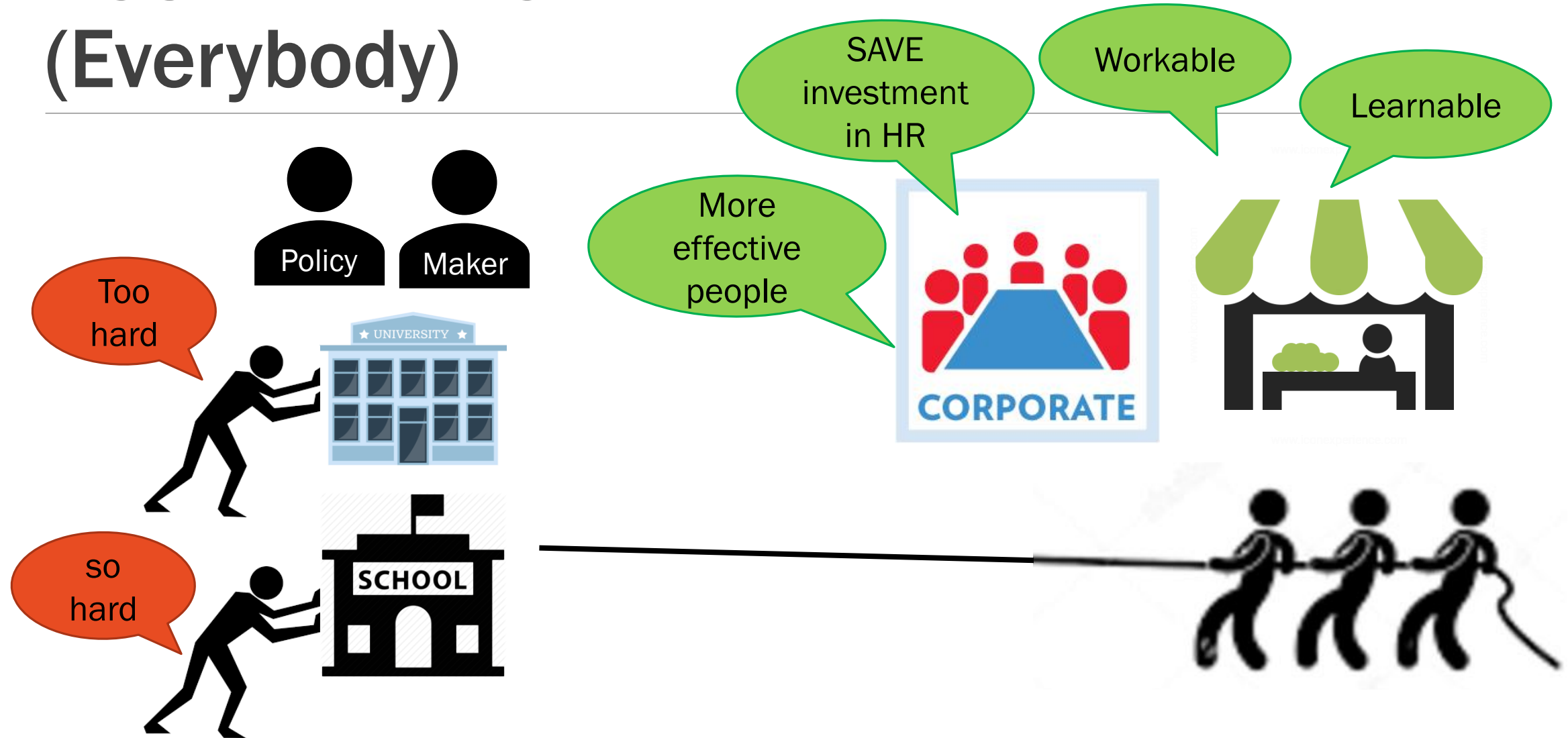
Live Long Learning JOURNEY (Family and Society)



Agile Methodology apply to Education Transformation (School Pillars)

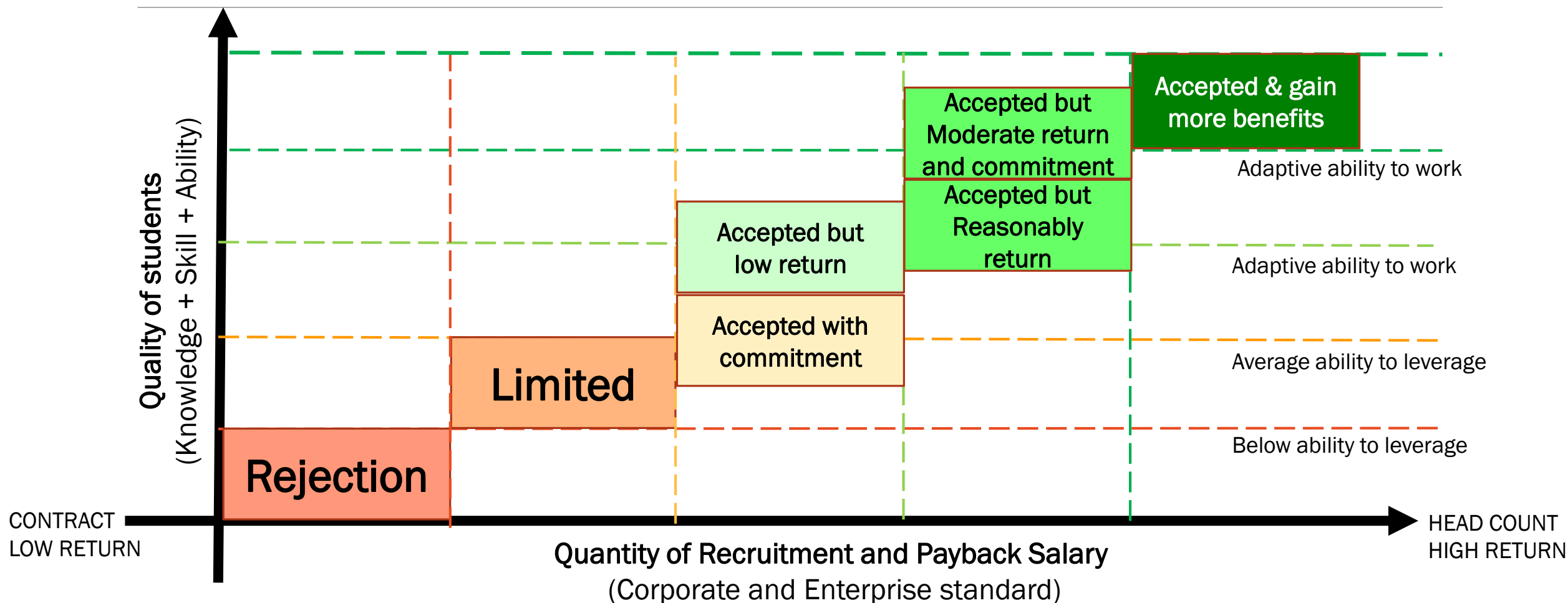


PUSH AND PULL (Everybody)



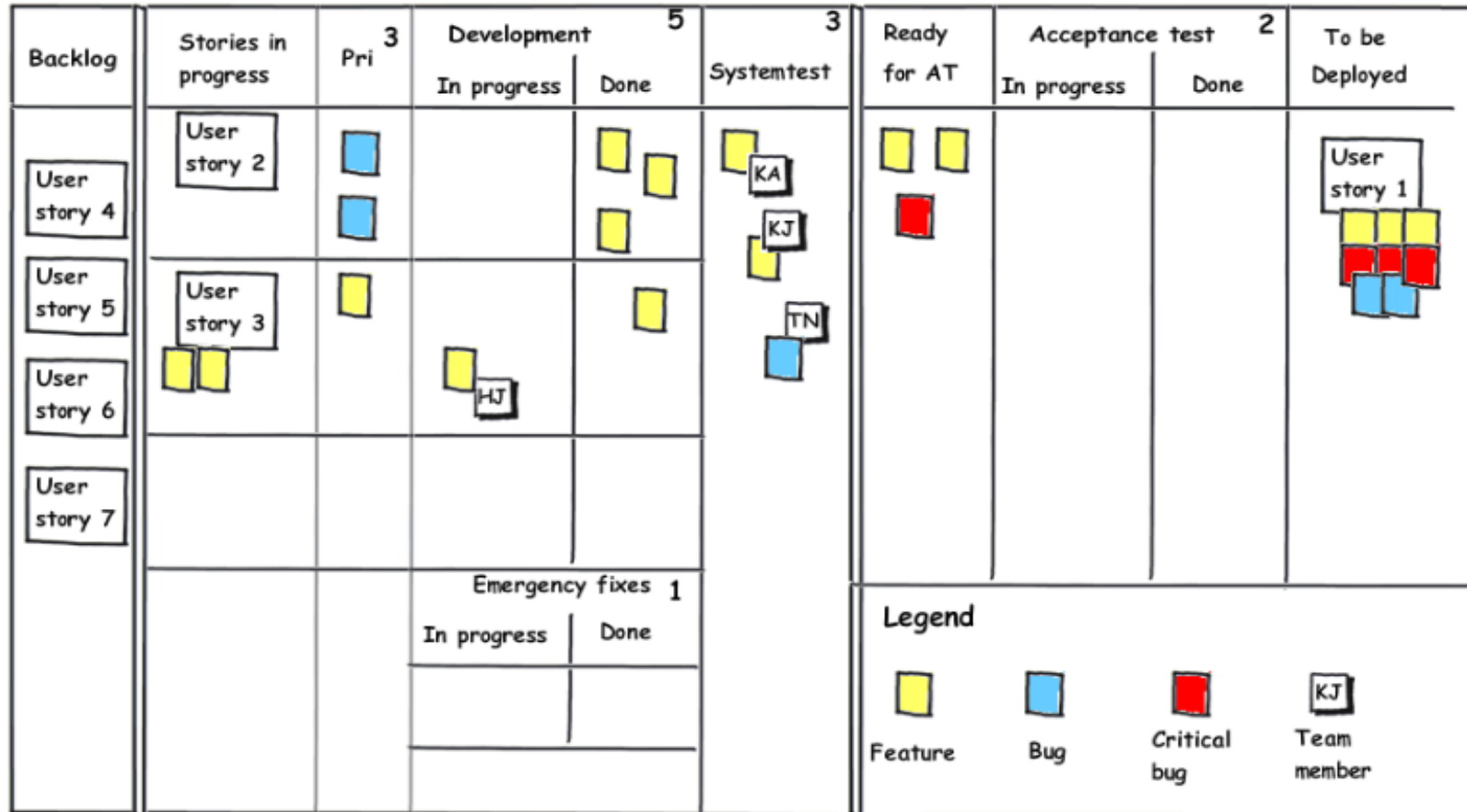
Pull Methodology in ET (Business Pillars)

Push is hardly to happen in Thailand



Use Kanban Board concept

Kanban board



created with Balsamiq Mockups - www.balsamiq.com

Note:

- Had used simple Agile methodology in this slide. We are in the midst of getting support from Agiler in Thailand to develop frame work and prepare for workshop.
- Tailor made will be provided ASAP

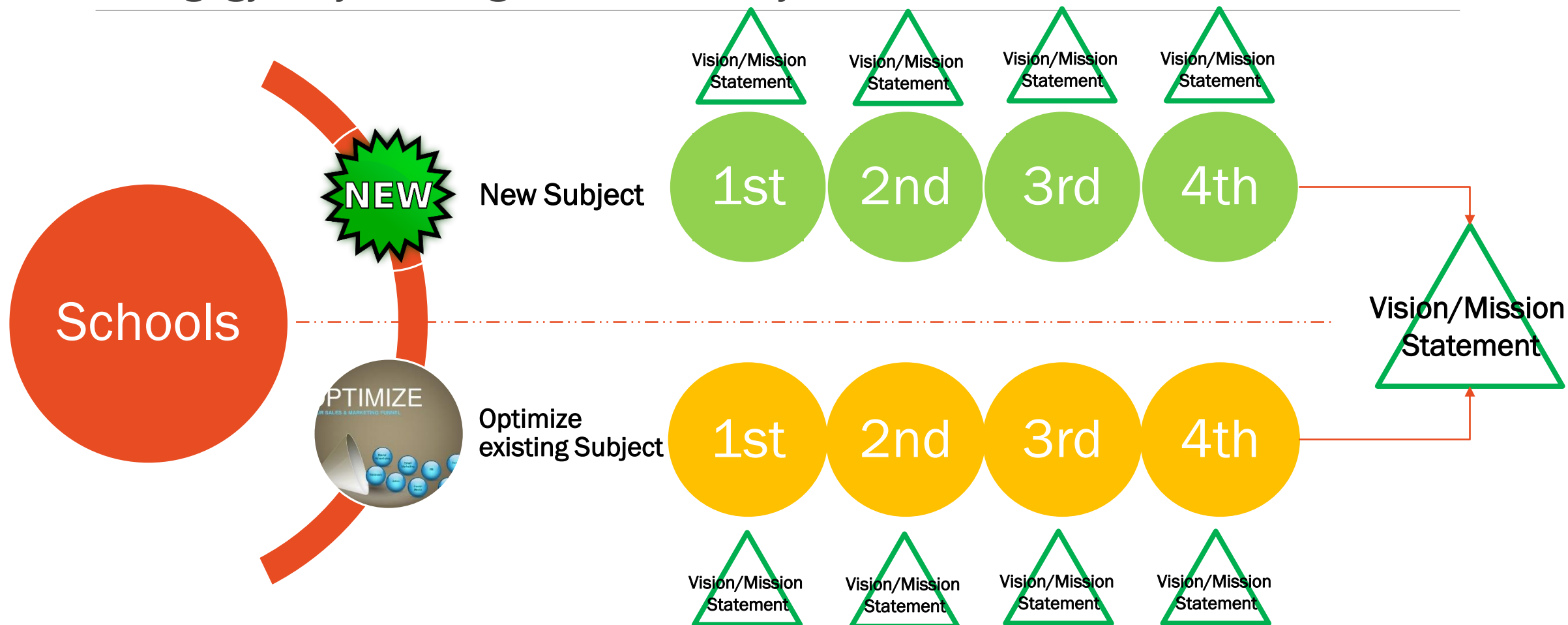


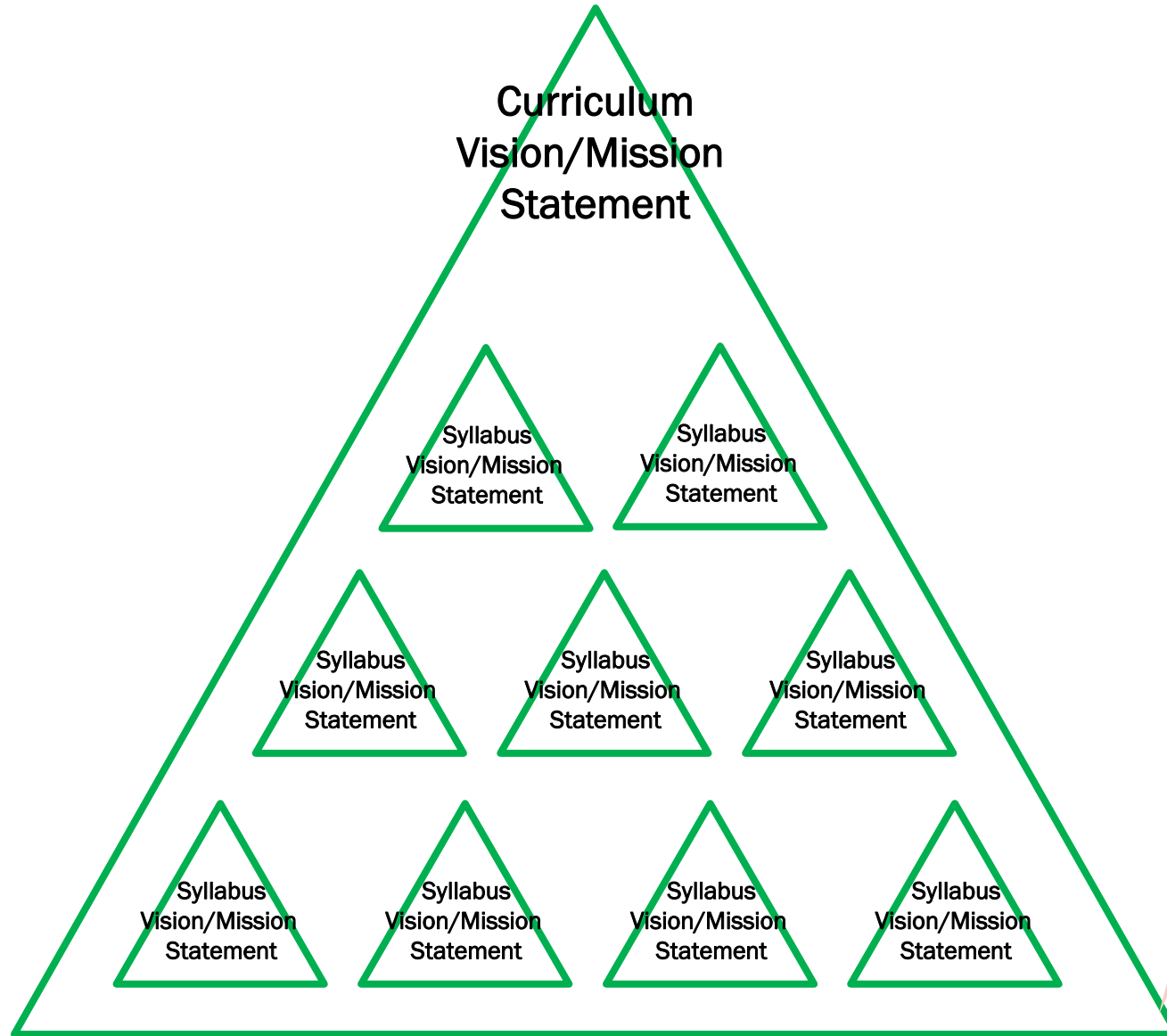
CT Approach Curriculum Transformation

EDUCATION TRANSFORMATION REFERENCE MODEL ABLE TO CHANGE, ADJUST, CUTTING OR ADDING BASED ON YOUR PROPOSITION. ABLE TO SWAP LAYER AND TRANSFORM SOME LAYER MATCH TO YOU PLAN.

From LLT to CT

Pedagogy & Syllabus Jigsaw to continuity of Curriculum





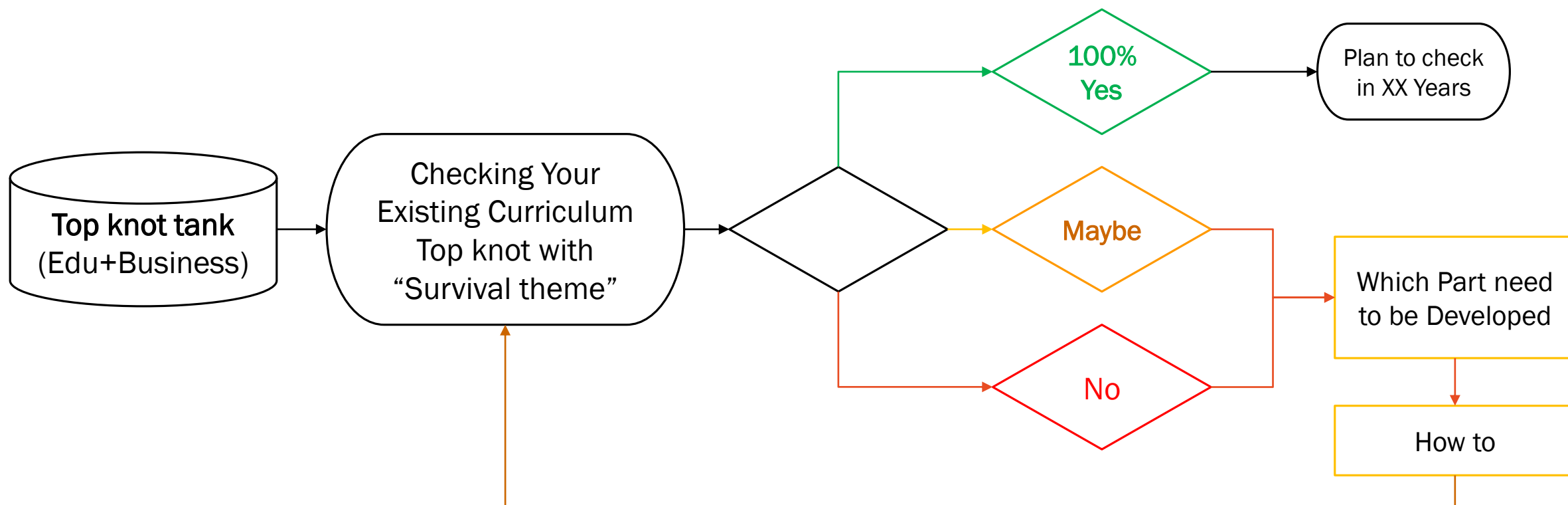
Basic
(Sophomore)
Active Student

Fundamental
(Freshman)
Student

Standard
(Junior)
Active Learner

Prepare to to be
the Professional
(Senior)
Advance Learner

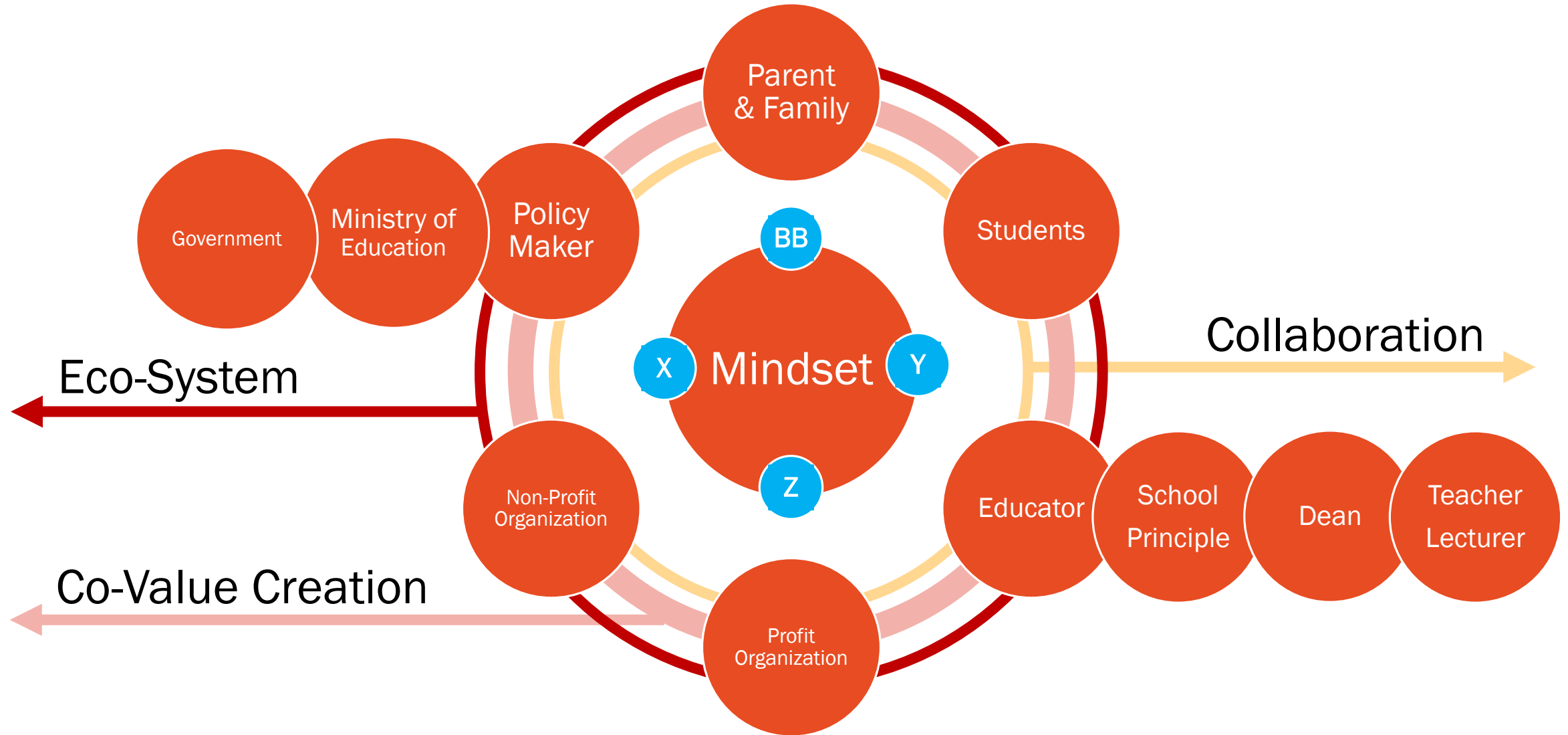
Checking your existing curriculum





More Information for your

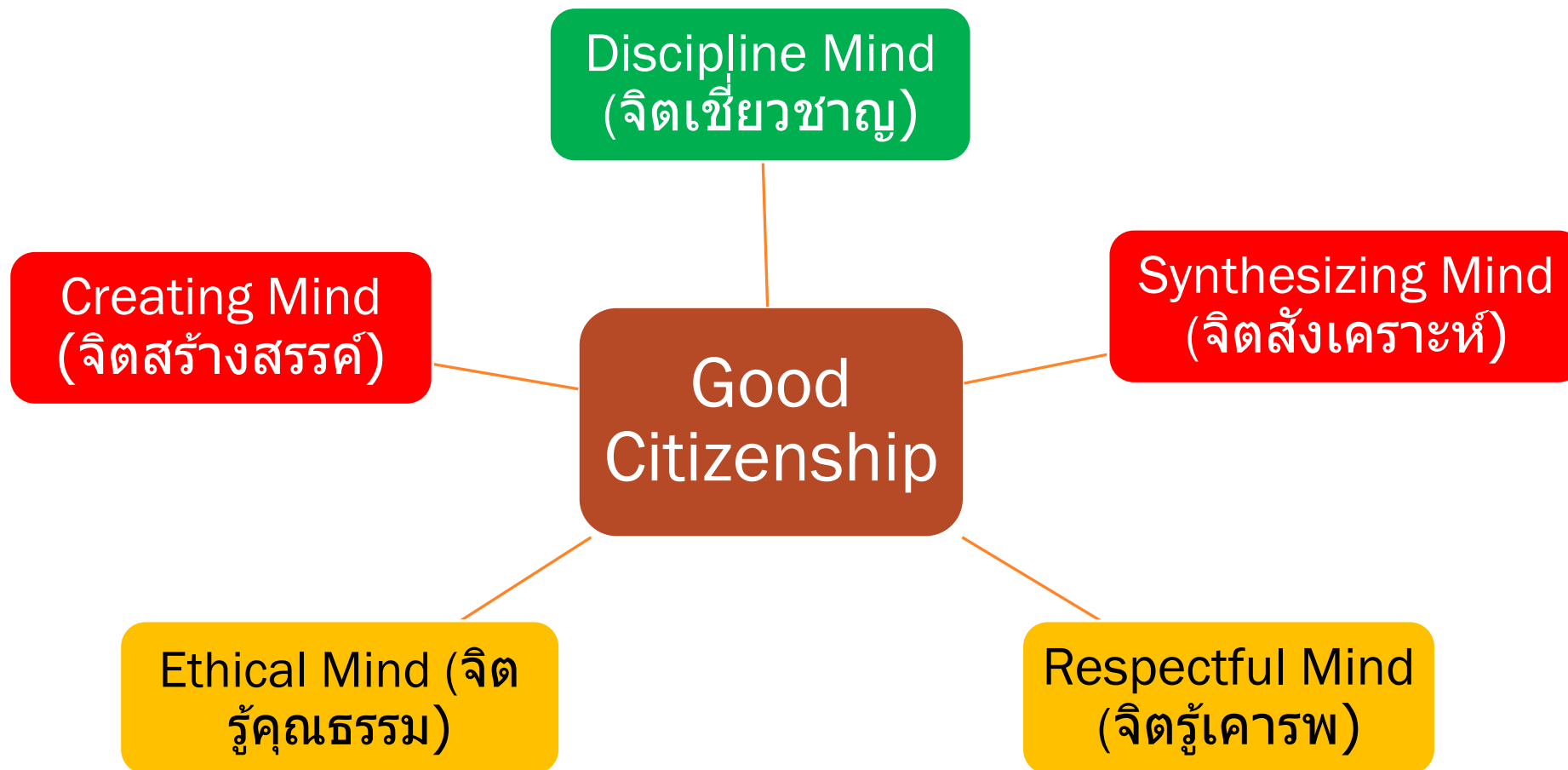
Education Mindset changing



Paramintara Y.

จิตห้าลักษณะสำหรับอนาคต

เฮาเวิร์ด การ์ดเนอร์



APPROACHING

Problem/Project based Learning

<https://www.edutopia.org/blog/pbl-vs-pbl-vs-xbl-john-larmer>

Similarities:

- Focus on an open-ended question or task
- Provide authentic applications of content and skills
- Build 21st Century success skills
- Emphasize student independences and inquiry
- Are longer and more multifaced than traditional lessons or assignments

Problem/Project based Learning

<https://www.edutopia.org/blog/pbl-vs-pbl-vs-xbl-john-larmer>

Differences:

Project Based Learning	Problem based Learning
Often <u>Multi-Subject</u>	More often <u>Single-subject</u> , but can be <u>multi-subject</u>
May be <u>Lengthy</u> (Week or months)	Tend to be shorter, but can be lengthy
Follow general, variously-named steps	Classically follows specific, traditionally prescribed steps
Included the creation of a product or performance	The “product” may be tangible OR a proposed solution, expressed in writing or in a presentation
May use scenarios but often involves real-world, fully authentic tasks and setting	Often uses case studies or fictitious scenarios as “ill-structured problems”

Problem based learning

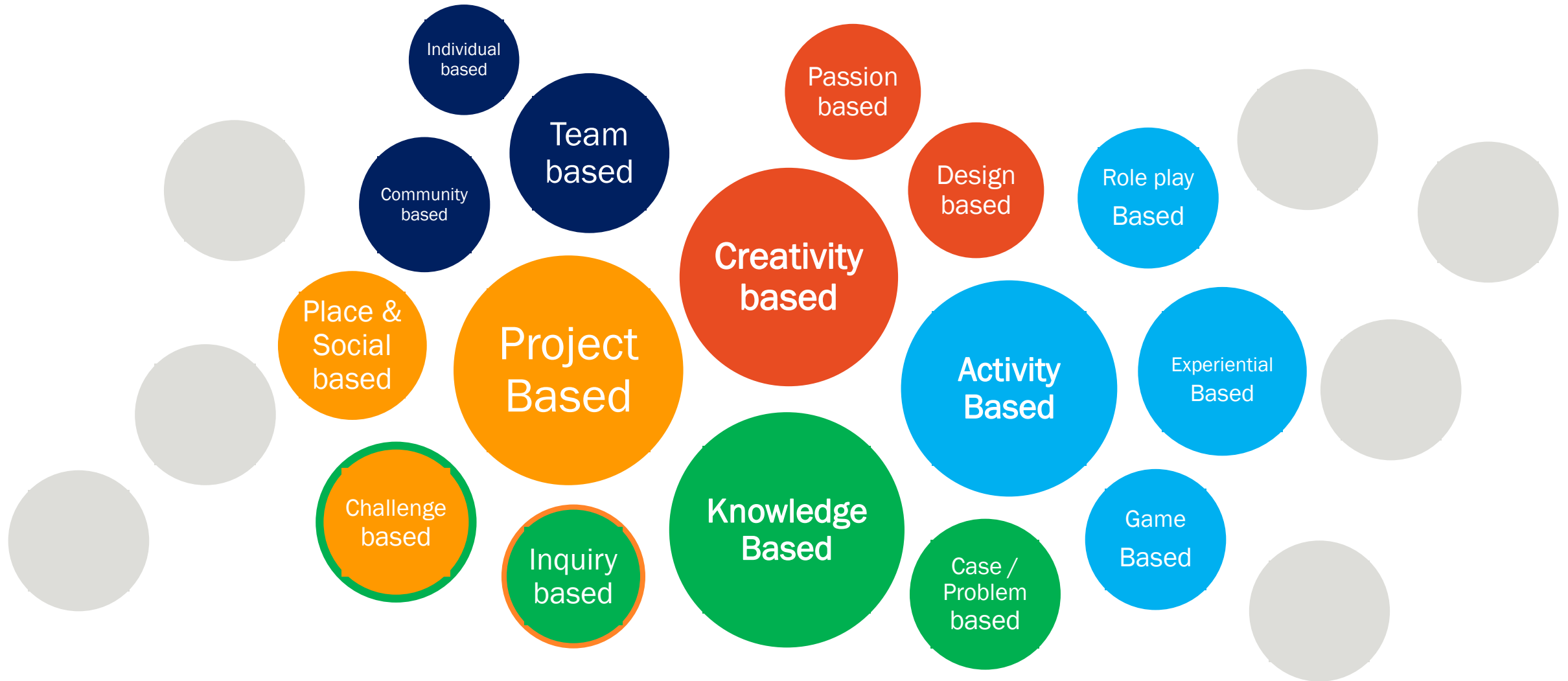
https://cdn2.bigcommerce.com/n-63unu/ys2l6/product_images/uploaded_images/engineering-design-cycle-w-copyright.png



Copyright © 2015 Advancement Courses

Sample of Learning and Teaching Concept

Adapted from: <https://www.edutopia.org/blog/pbl-vs-pbl-vs-xbl-john-larmer>



Ten powerful concepts for inspired teaching and learning

MEGAN O'CONNOR, STANFORD UNIVERSITY

<https://teachingcommons.stanford.edu/teaching-talk/ten-powerful-concepts-inspired-teaching-and-learning>

Active learning

Hybrid learning

Meta-cognitive awareness

Meta-affective awareness

Self-regulated learning

Growth mindset

Stereotype threat

Community engaged learning and service-learning

Rhetorical situation

Grade norming/normaling session

Change the way we teach to the way they are 'learning'

http://www.pdst.ie/sites/default/files/teaching%20toolkit%20booklet%20without%20keyskills_0.pdf

From	To
Accepting	Questioning
Intolerant	Tolerant
Doing	Thinking
Analytic	Being Descriptive
Impulsive	Diplomatic
Unskilled Communicators	Skilled Communicator
Reactive	Reflective
Concrete Thinking	Abstract Thinking
Lacking Self Awareness	Self Aware

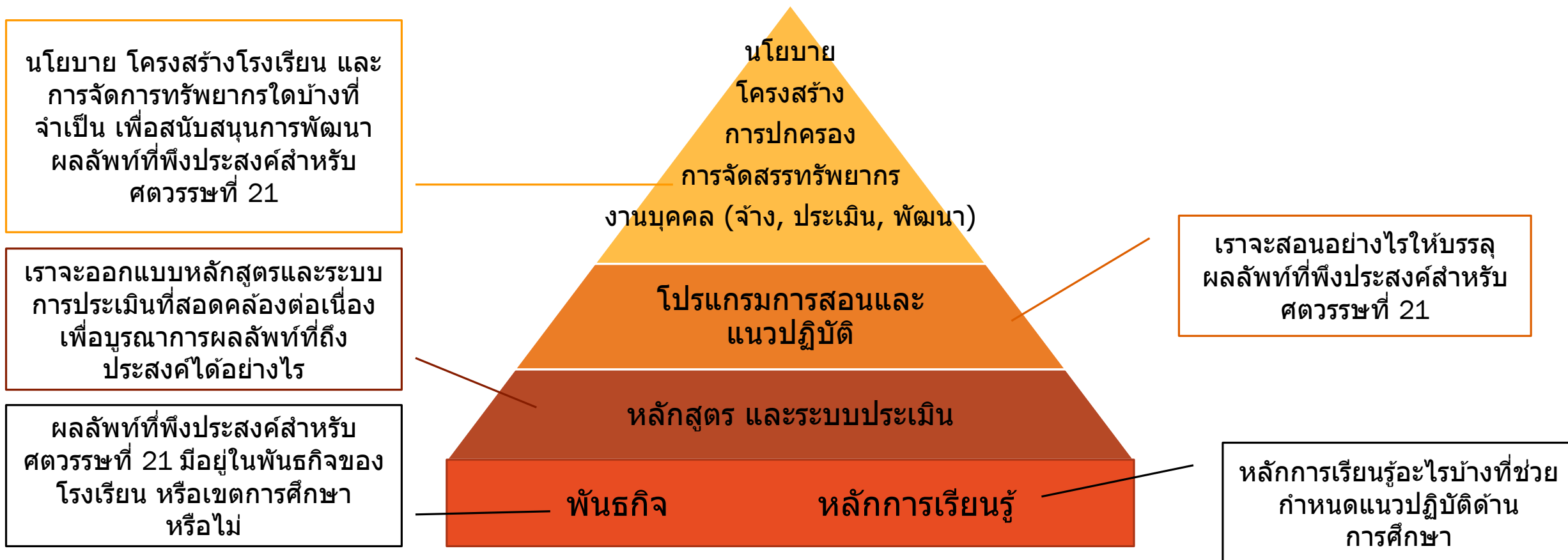
10 วิธีการเรียนรู้ที่นักเรียนระบุว่าวิธีเหล่านี้ที่ พวกเขาใช้ในการเรียน

surveyed by Kowsley Metropolitan Borough Council; Page 207., Chapter 6 21st Century skills

- การมอง
- การจดจำ
- การคิดล่วงหน้า
- การจับคู่ / การเปรียบเทียบ
- ความคิดสร้างสรรค์
- การฟัง
- การค้นหา
- การเจรจาหาข้อสรุป
- การทำงานเป็นทีม
- การเรียนรู้

โครงสร้างของการออกแบบการเรียนรู้การสอน

Diagram 7.1, Page 240 Chapter 7, 21st Century Skills



การสืบค้นแบบ KWHLAQ

Page 278; Chapter 8; John Barrel, 21st Century Skills



delivering lessons purposefully planned to incorporate four essential and interrelated instructional phases:

(by Douglas Fisher & Nancy Frey) <http://www.ascd.org/Publications/Books/Overview/Better-Learning-Through-Structured-Teaching-A-Framework-for-the-Gradual-Release-of-Responsibility-2nd-Edition.aspx>

Focused Instruction: Preparing students for learning by establishing lesson purpose, modeling strategies and skills, thinking aloud, and noticing how students respond.

Guided Instruction: Strategically using prompts, cues, and questions to lead students to new understanding.

Collaborative Learning: Allowing students to consolidate their understanding through exploration, problem-solving, discussion, and thinking with their peers.

Independent Learning: Requiring students to use the skills and knowledge they've acquired to create authentic products and ask new questions.

Internet Reciprocal Teaching Dialogue Rubric

RT strategy	Beginning 1	Developing 2	Accomplished 3	Exemplary 4	Score
Questioning	Generates simple recall questions that can be answered directly from facts or information found within the website's home page.	Generates main idea questions that can be answered based on information gathered by accessing one or more links to the website's content.	Generates questions requiring inference. Facts and information must be synthesized from one or more links to the website's content and combined with prior knowledge.	Generates questions flexibly that vary in type, based on the content read and the direction of the dialogue.	
Clarifying	Identifies clarification as a tool to enhance understanding and initiates clarification dialogue when appropriate.	Identifies appropriate words for clarification with the dialogue's context.	Assists group in clarifying identified words based on context clues.	Uses strategies for word clarification that can be applied generally across reading contexts.	
Summarizing	Summary consists of loosely related ideas.	Summary consists of several main ideas but also many details.	Summary synthesizes main ideas, is complete, accurate and concise.	Summary is accurate, complete, and concise incorporating content vocabulary contained in the text.	
Predicting	Demonstrates knowledge of predictions as an active reading strategy.	Directs group predictions to set a clear purpose for reading.	Articulates predictions that build logically from context.	Provides justification for prediction and initiates confirmation or redirection based on information located in the text.	

การสอนแบบช่วยเหลือกันทางอินเทอร์เน็ต IRT; Internet Reciprocal Teaching (Page 6-7)

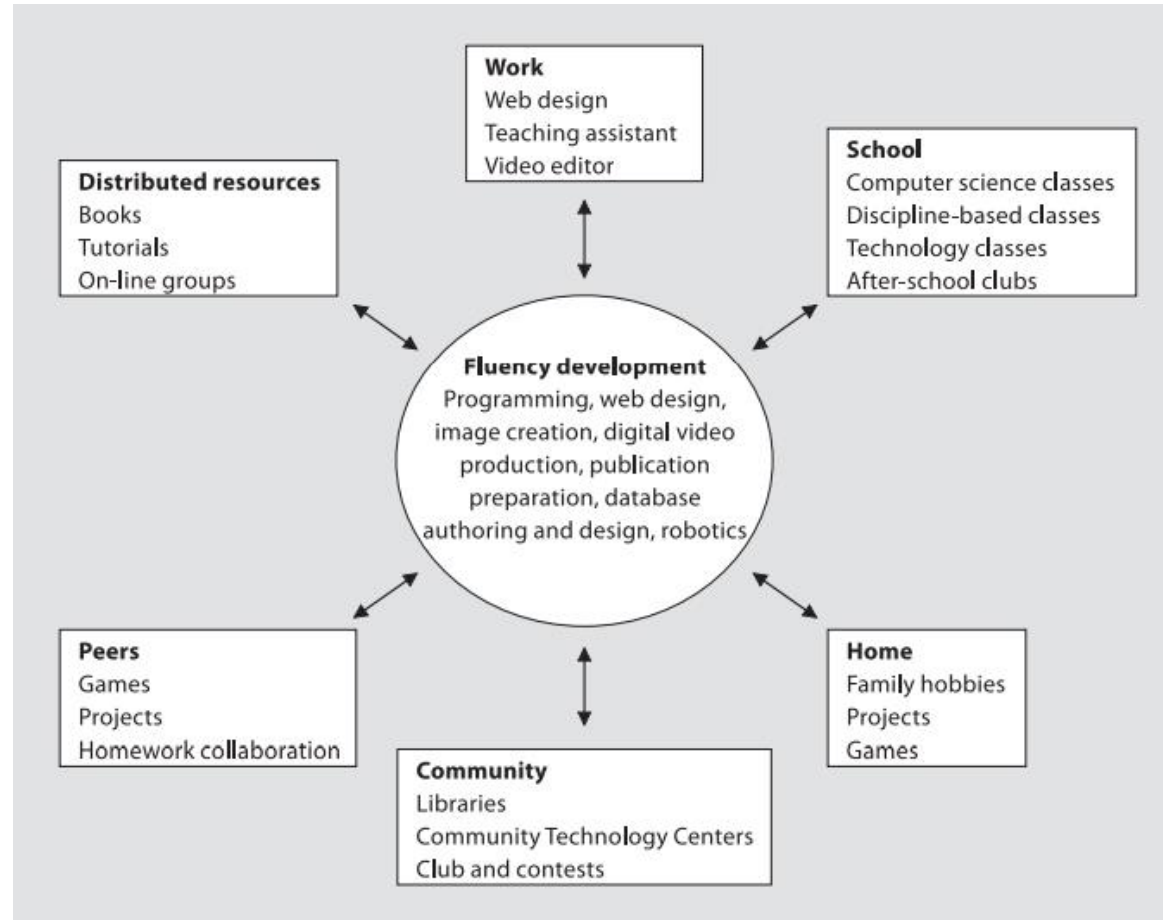
<http://webdev.education.uconn.edu/static/sites/newliteracies/carnegie/documents/IRT.pdf>

Facilitation Strategy	Beginning 1	Developing 2	Accomplished 3	Exemplary 4	Score
Group Leadership	Initiates one to two of the strategies in a loosely organized manner.	Provides some leadership in initiating three to four strategies	Leads effectively incorporating all four strategies into a dialogue.	Keeps group on task and skillfully and demonstrates strategies while balancing group participation.	
Group Participation	Stays on task mostly listening but contributes little to the dialogue	Stays on task and actively participates in the dialogue.	Actively listens and builds responses around what others have contributed to the dialogue.	Participates in dialogue and actively responds to other students in a strategic manner.	

บริบทของการเรียนรู้ในศตวรรษที่ 21

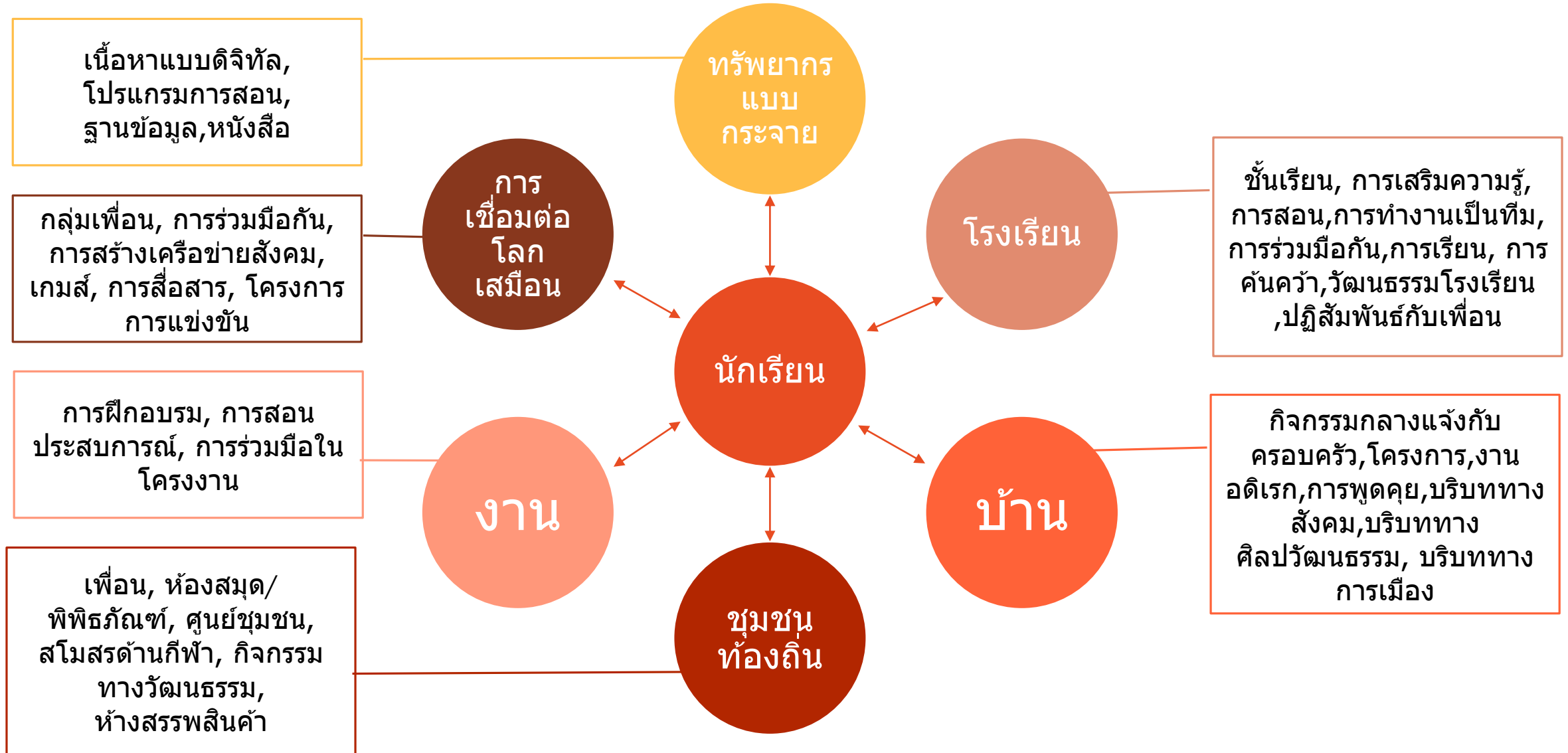
Brigid Barron Stanford University, Stanford, Calif., USA

<http://life-slc.org/docs/barron-self-sustainedlearning.pdf>



บริบทของการเรียนรู้ในศตวรรษที่ 21

ดัดแปลงจาก Barron, หน้า 378 โดย Cheryl Lemke 21st Century skills ฉบับแปลไทย



SKILLS

Basic skills ที่ควรเสริมสร้างให้มีในนักศึกษา



3Rs:

reading, writing, arithmetic

21st Century theme

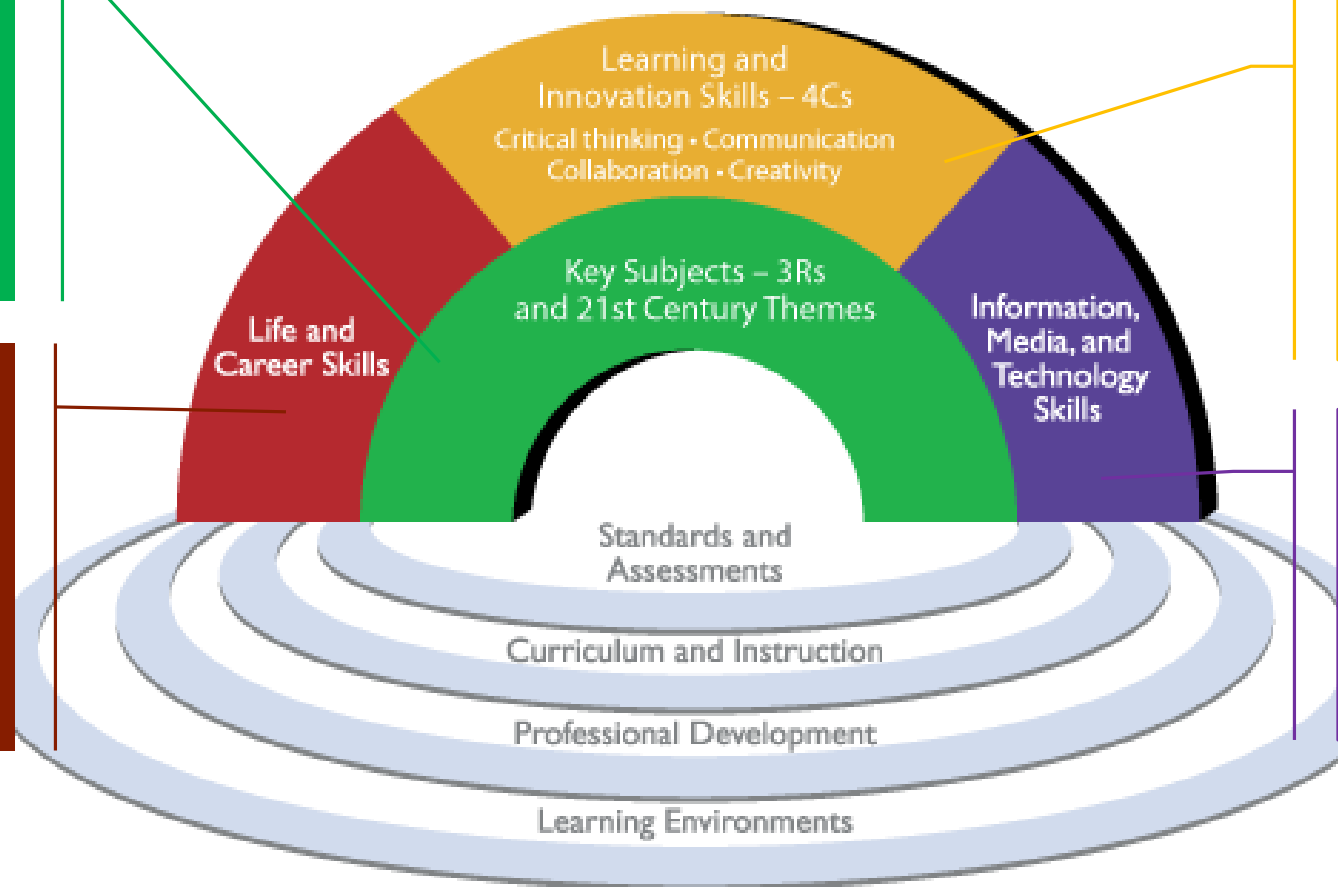
- Global Awareness
- Financial, Economic, Business and Entrepreneurial Literacy
- Civic Literacy
- Health Literacy
- Environment Literacy

Life and Career skill

- Flexibility And Adaptability
- Initiative and Self—Direction
- Social and Cross-Cultural skills
- Productivity and Accountability
- Leadership and Responsibility

P21 Framework for 21st Century Learning

21st Century Student Outcomes and Support Systems



4Cs:

Creativity
Critical thinking
Communication,
Collaboration.

Information, Media & Technology skills

- Information Literacy
- Media Literacy
- ICT Literacy

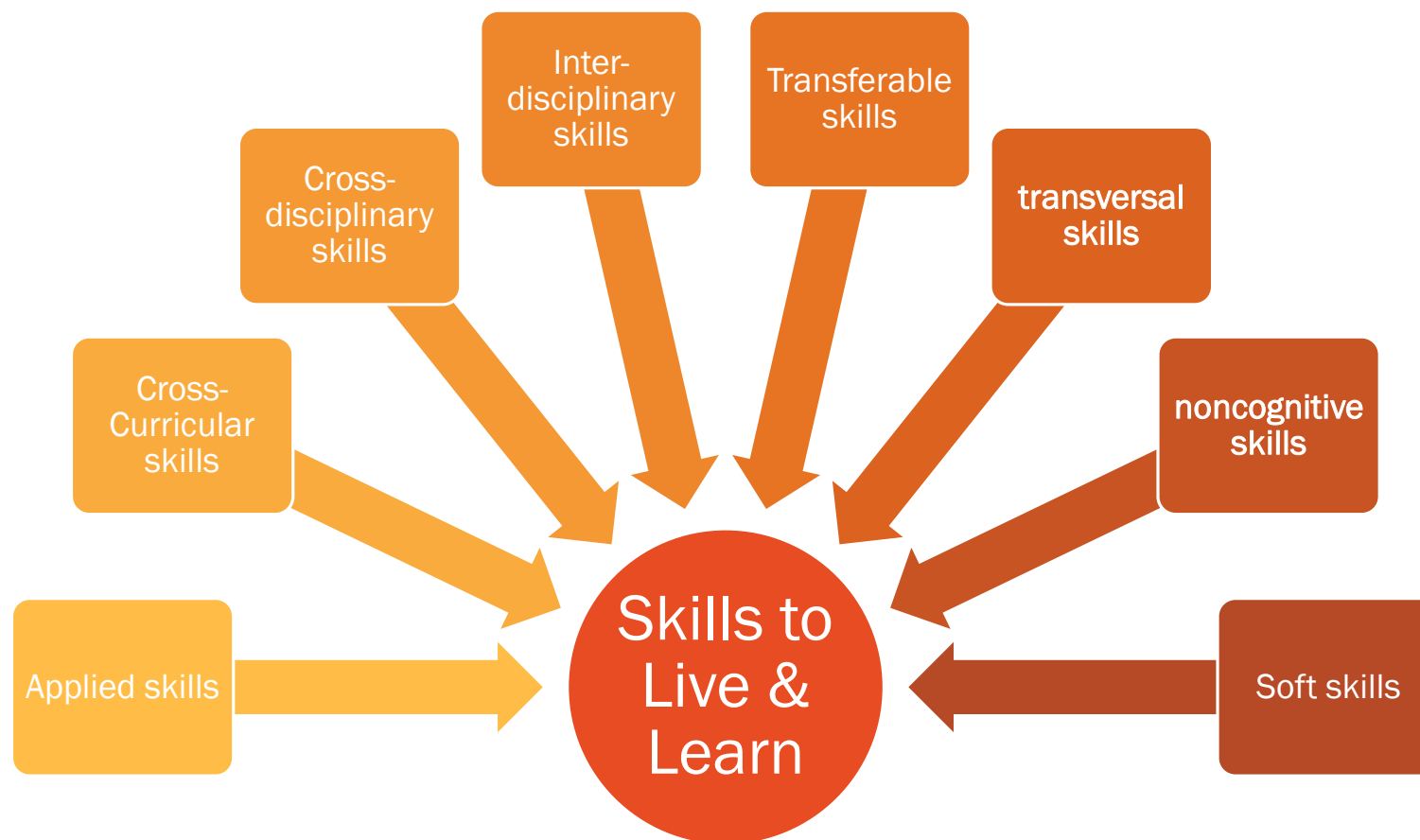
enGuage 21st Century Skills

<http://pict.sdsu.edu/engauge21st.pdf>



Family of skills

<http://edglossary.org/21st-century-skills/>



Groups of skills which associated with 21st century skills

<http://edglossary.org/21st-century-skills/>

- **Critical thinking, problem solving**, reasoning, analysis, interpretation, synthesizing information
- Research skills and practices, interrogative questioning
- **Creativity**, artistry, curiosity, imagination, innovation, personal expression
- Perseverance, self-direction, planning, self-discipline, adaptability, initiative
- Oral and written communication, public speaking and presenting, listening (**Literacy, Communication**; โดยผู้สำรวจ)
- **Leadership, teamwork, collaboration**, cooperation, facility in using virtual workspaces
- Information and communication technology (ICT) literacy, media and internet literacy, data interpretation and analysis, computer programming (**Digital Literacy**; โดยผู้สำรวจ)
- Civic, ethical, and social-justice literacy
- Economic and financial literacy, **entrepreneurialism** (; **Numeracy**; โดยผู้สำรวจ)
- Global awareness, **multicultural literacy, humanitarianism** (**Emotional Intelligent**; โดยผู้สำรวจ)
- Scientific literacy and reasoning, the scientific method
- Environmental and conservation literacy, ecosystems understanding
- Health and wellness literacy, including nutrition, diet, exercise, and public health and safety

“The essential learning outcomes provide a new framework to guide students’ cumulative progress from school through college.”

THE ESSENTIAL LEARNING OUTCOMES

Beginning in school, and continuing at successively higher levels across their college studies, students should prepare for twenty-first-century challenges by gaining:

KNOWLEDGE OF HUMAN CULTURES AND THE PHYSICAL AND NATURAL WORLD

- Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts

Focused by engagement with big questions, both contemporary and enduring

INTELLECTUAL AND PRACTICAL SKILLS, INCLUDING

- Inquiry and analysis
- Critical and creative thinking
- Written and oral communication
- Quantitative literacy
- Information literacy
- Teamwork and problem solving

Practiced extensively, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance

PERSONAL AND SOCIAL RESPONSIBILITY, INCLUDING

- Civic knowledge and engagement—local and global
- Intercultural knowledge and competence
- Ethical reasoning and action
- Foundations and skills for lifelong learning

Anchored through active involvement with diverse communities and real-world challenges

INTEGRATIVE LEARNING, INCLUDING

- Synthesis and advanced accomplishment across general and specialized studies

Demonstrated through the application of knowledge, skills, and responsibilities to new settings and complex problems

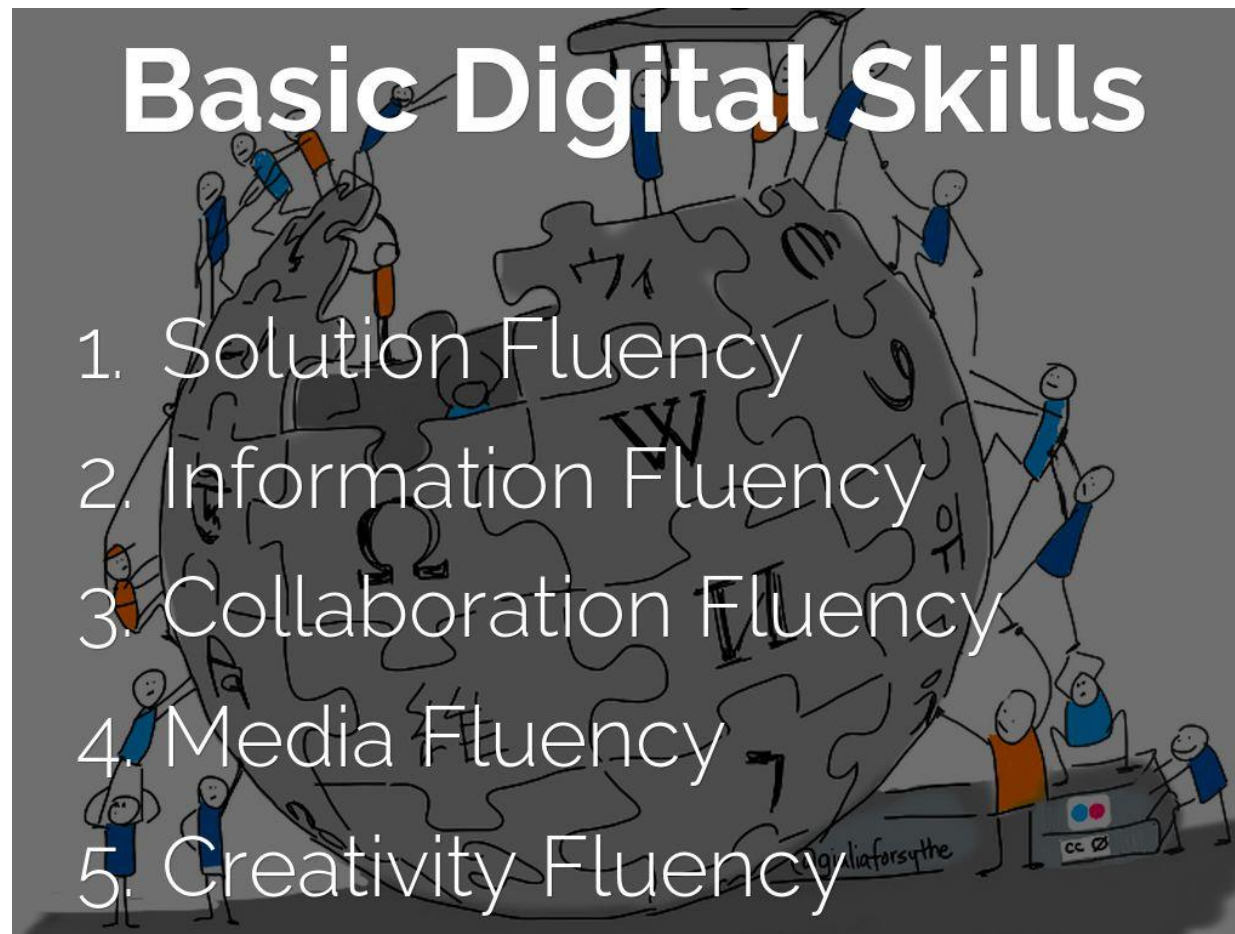
College learning for the new global century

Page 13

https://www.aacu.org/sites/default/files/files/LEAP/GlobalCentury_final.pdf

DIGITAL SKILLS

Basic Digital Skills



Basic Digital Skills

(1) Solution Fluency

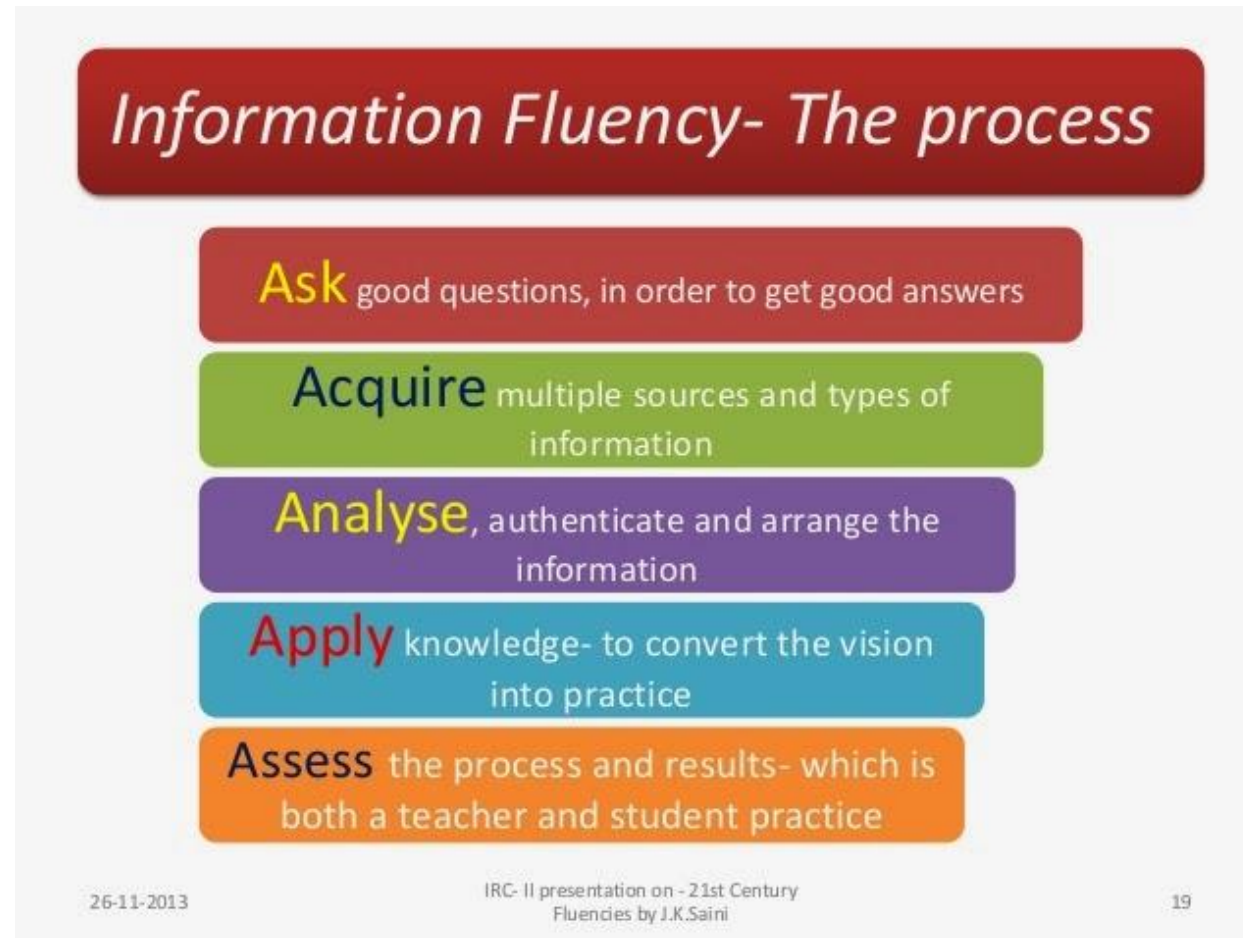
<https://allthingslearning.wordpress.com/tag/solution-fluency/>



Basic Digital Skills

(2) Information Fluency

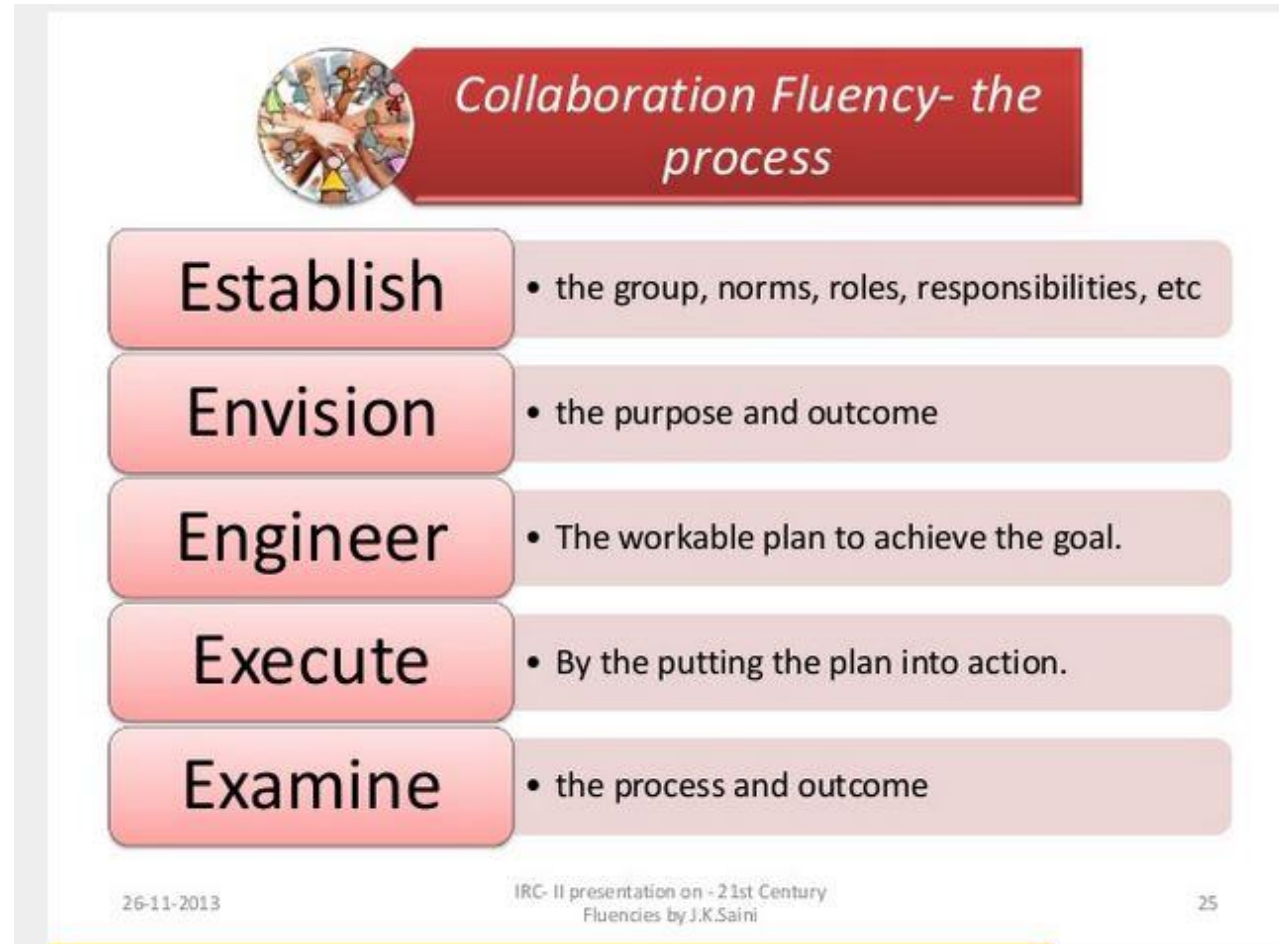
<http://gabrieladesampaio.blogspot.com/2015/05/2-digital-literacy-and-information.html>



Basic Digital Skills

(3) Collaboration Fluency

<http://mccaughtrywildcats.weebly.com/collaboration-fluency.html>



Basic Digital Skills

(4) Media Fluency

<https://allthingslearning.wordpress.com/tag/media-fluency/>



Basic Digital Skills

(5) Creative Fluency

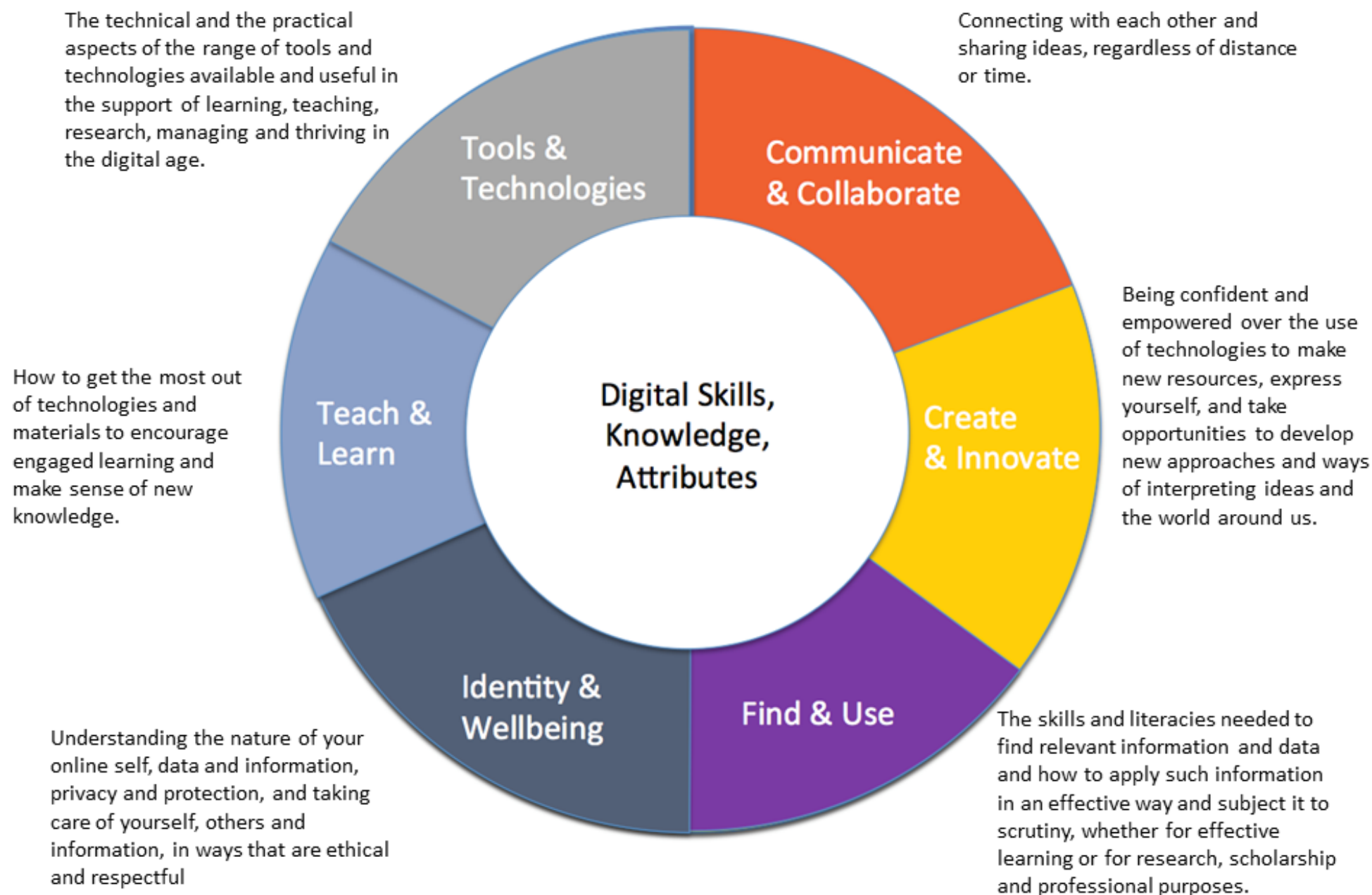
<https://allthingslearning.wordpress.com/tag/media-fluency/>



ALL ABOARD

Mapping Digital Skills in Irish Higher Education





ISTE (2007) 1/2

National educational technology standards for students (2007)

https://www.iste.org/docs/pdfs/20-14_ISTE_Standards-S_PDF.pdf

1. Creativity and innovation

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

- a. Apply existing knowledge to generate new ideas, products, or processes
- b. Create original works as a means of personal or group expression
- c. Use models and simulations to explore complex systems and issues
- d. Identify trends and forecast possibilities

2. Communication and collaboration

Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

- a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media
- b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats
- c. Develop cultural understanding and global awareness by engaging with learners of other cultures
- d. Contribute to project teams to produce original works or solve problems

3. Research and information fluency

Students apply digital tools to gather, evaluate, and use information.

- a. Plan strategies to guide inquiry
- b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media
- c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks
- d. Process data and report results

4. Critical thinking, problem solving, and decision making

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

- a. Identify and define authentic problems and significant questions for investigation
- b. Plan and manage activities to develop a solution or complete a project
- c. Collect and analyze data to identify solutions and/or make informed decisions
- d. Use multiple processes and diverse perspectives to explore alternative solutions

ISTE (2007) 2/2

National educational technology standards for students (2007)

https://www.iste.org/docs/pdfs/20-14_ISTE_Standards-S_PDF.pdf

5. Digital citizenship

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

- a. Advocate and practice safe, legal, and responsible use of information and technology
- b. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity
- c. Demonstrate personal responsibility for lifelong learning
- d. Exhibit leadership for digital citizenship

6. Technology operations and concepts

Students demonstrate a sound understanding of technology concepts, systems, and operations.

- a. Understand and use technology systems
- b. Select and use applications effectively and productively
- c. Troubleshoot systems and applications
- d. Transfer current knowledge to learning of new technologies

Copyright © 2007 International Center for Technology Education

Digital Transformation: A framework for ICT literacy (ETS) (2007)

- Cognitive Proficiency — the desired foundational skills of everyday life at school, at home, and at work. Literacy, numeracy, problem solving, and spatial/visual literacy demonstrate these proficiencies.
- Technical Proficiency — the basic components of digital literacy. It includes a foundational knowledge of hardware, software applications, networks, and elements of digital technology.
- ICT Proficiency — the integration and application of cognitive and technical skills. ICT proficiencies are seen as enablers; that is, they allow individuals to maximize the capabilities of technology. At the highest level, ICT proficiencies result in innovation, individual transformation, and societal change.

Page 18: https://www.ets.org/Media/Tests/Information_and_Communication_Technology_Literacy/ictreport.pdf

Digital Transformation: A framework for ICT literacy (ETS) (2007)

Access	Select and open appropriate e-mails from inbox list.
Manage	Identify and organize the relevant information in each e-mail.
Integrate	Summarize the interest in the courses provided by the company.
Evaluate	Decide which courses should be continued next year, based on last year's attendance.
Create	Write up your recommendation in the form of an e-mail to the vice president of human resources.

5 Stage of ICT Steps

Page 29:

https://www.ets.org/Media/Tests/Information_and_Communication_Technology_Literacy/ictreport.pdf

Play — the capacity to experiment with one's surroundings as a form of problem-solving

Performance — the ability to adopt alternative identities for the purpose of improvisation and discovery

Simulation — the ability to interpret and construct dynamic models of real-world processes

Appropriation — the ability to meaningfully sample and remix media content

Multitasking — the ability to scan one's environment and shift focus as needed to salient details.

Distributed Cognition — the ability to interact meaningfully with tools that expand mental capacities

Collective Intelligence — the ability to pool knowledge and compare notes with others toward a common goal

Judgment — the ability to evaluate the reliability and credibility of different information sources

Transmedia Navigation — the ability to follow the flow of stories and information across multiple modalities

Networking — the ability to search for, synthesize, and disseminate information

Negotiation — the ability to travel across diverse communities, discerning and respecting multiple perspectives, and grasping and following alternative norms.

ทักษะพื้นฐานด้านดิจิทัล ผ่านการใช้สื่อใหม่

Page 6: Confronting the Challenges of Participatory Culture: Media Education for the 21st Century,

https://www.macfound.org/media/article_pdfs/JENKINS_WHITE_PAPER.PDF

Miscellaneous

เกณฑ์การออกแบบสภาพแวดล้อมในการเรียนรู้ร่วมกันใน ศตวรรษที่ 21

Page 205; Chapter 6; Bob Pearlman; 21st Century skills



Singapore Education Visions

วิสัยทัศน์ที่ 1	เพื่อชาติ	โรงเรียนนักคิด ประเทศแห่งการเรียนรู้ 'Thinking Schools, Learning Nations'	Vision and Mission Statement
วิสัยทัศน์ที่ 2	เพื่อการศึกษา	สอนให้น้อยลง เรียนรู้ให้มากขึ้น "Teach Less Learn more" ; TLLM	LTT
วิสัยทัศน์ที่ 3	เพื่อการปฏิบัติ	ตึง หย่อน ตึง "Tight but loose"	LLT Methodology
วิสัยทัศน์ที่ 4	เพื่อความร่วมมือ	ชุมชนการเรียนรู้ทางวิชาชีพ Professional Learning Communities ; PLC	LLT Platform, Community & Design

Thinking process to combine PLC with **Teach Less** (Singapore practice)

Diagram 5.1 Page 183; 21st Century skills

ฐานความรู้ขนาดใหญ่ที่
ขยายตัวต่อเนื่อง

สภาพแวดล้อมที่อุดมด้วยข้อมูล
และเทคโนโลยี

ไม่ใช่ลดเวลาลง, ไม่ได้ลดเนื้อหา
ความรู้ลง, ไม่ได้ตัดทอนหลักสูตร
ให้น้อยลง

สอนอะไร: ปริมาณ หรือ คุณภาพ --
คำถามหลัก, แนวคิดสำคัญที่เป็นสากล,
ทักษะชีวิต

สอนอย่างไร: ครูสอนฝ่ายเดียว หรือ นักเรียน
มีส่วนร่วม - ตั้งคำถาม; สืบค้นและสำรวจโดย
นักเรียน

สำนึกถึงความจำเป็นเร่งด่วน และการเปลี่ยนวิธี
การสอน แบบ ครูเป็นศูนย์กลาง
หรือ นักเรียนเป็นศูนย์กลาง

Thinking process to combine PLC with **Learn More** (Singapore practice)

Diagram 5.2 Page 186; 21st Century skills

ความต้องการของนักเรียน:
ความรู้หลัก, ทักษะชีวิต, ทักษะ
การเรียนรู้, ทักษะสำหรับอนาคต

นักเรียนในศตวรรษที่ 21:
รายการทักษะใหม่ ๆ มากมาย

การเรียนรู้ของนักเรียน: จาก
ประสบการณ์, จากความร่วมมือ, จากการ
ปฏิบัติจริง, สัมพันธ์กับชีวิต

โมเดลทางทฤษฎี: การตรวจสอบ,
การอภิปราย, การคัดเลือก

การวางแผนทางให้สอดคล้อง: การผสาน
ความรู้ เทคโนโลยี และกิจกรรม

การเรียนรู้ที่นักเรียนเป็นศูนย์กลาง: ได้รับ
ประสบการณ์หลากหลาย และสัมพันธ์กับชีวิต

16 Habits of Mind Identified

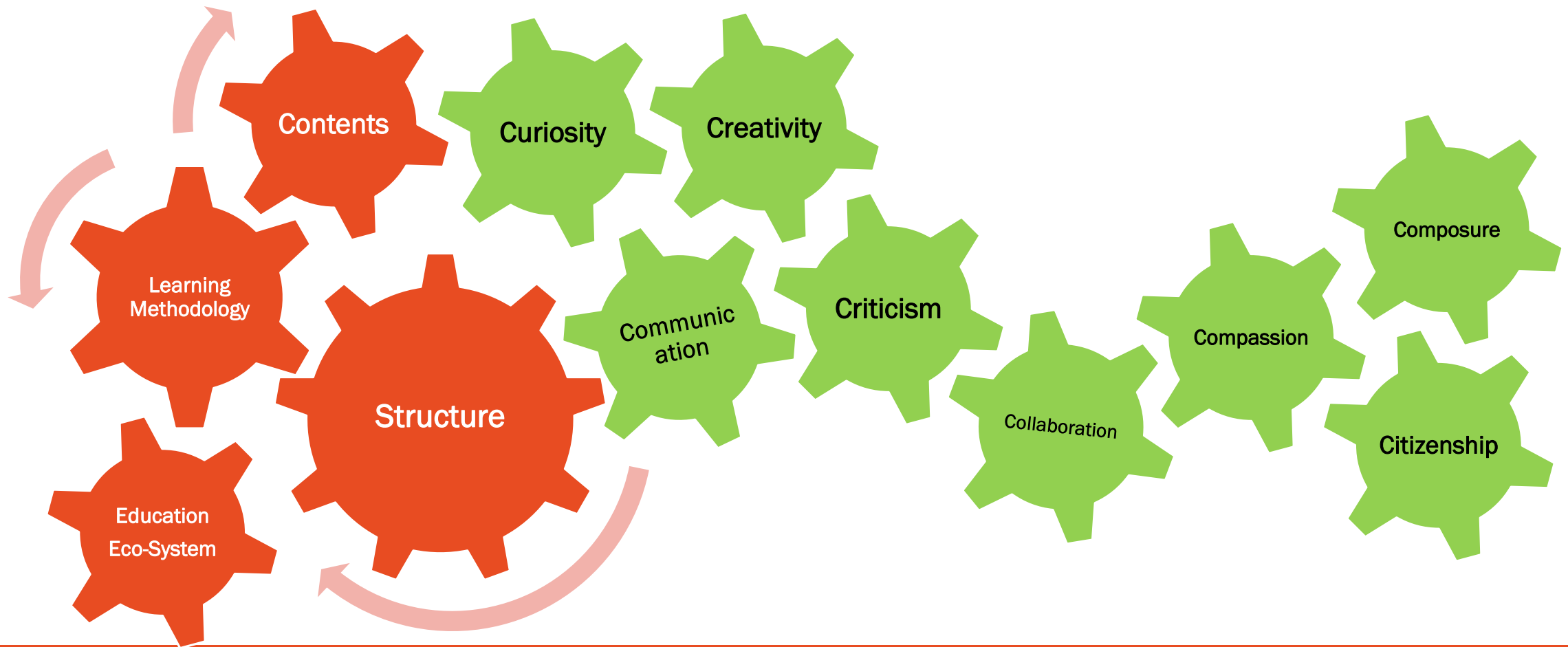
Integration and sustain habit of mind, Costa and Kallick

<http://www.ccsnh.edu/sites/default/files/content/documents/CCSNH%20MLC%20HABITS%20OF%20MIND%20COSTA-KALLICK%20DESCRIPTION%201-8-10.pdf>

- Persisting
- Thinking and communicating with clarity and precision
- Managing impulsivity
- Gathering data through all senses
- Listening with understanding and empathy
- Creating, imagining, innovating
- Thinking flexibly
- Responding with wonderment and awe
- Thinking about thinking (metacognition)
- Taking responsible risks
- Striving for accuracy Finding humor
- Questioning and posing problems
- Thinking interdependently
- Applying past knowledge to new situations
- Remaining open to continuous learning

4 เสาของหลักสูตรที่ควรได้รับการพิจารณา และ 8 สมรรถนะที่ควรถูกพัฒนา (8C)

Ken Robinson; Creative school แผนภาพโดย MonsoonSIM Thailand



4 เป้าหมายของการศึกษา

Ken Robinson; Creative school แผนภาพโดย MonsoonSIM Thailand

เศรษฐกิจ

การศึกษาควรช่วยให้ผู้เรียนสามารถรับมือกับ
และพึ่งพาตนเองทางเศรษฐกิจได้

วัฒนธรรม

การศึกษาควรช่วยให้ผู้เรียนใจและซาบซึ้ง
ในวัฒนธรรมของตนเอง และเคารพในวัฒนธรรมที่
หลากหลายของผู้อื่น

สังคม

การศึกษาควรช่วยบ่มเพาะให้เยาวชนเป็นพลเมือง
ที่ตื่นตัวพร้อมจะมีส่วนร่วมในสังคม และเป็นผู้ที่เปี่ยมด้วย
ความเห็นอกเห็นใจผู้อื่น

บุคคล

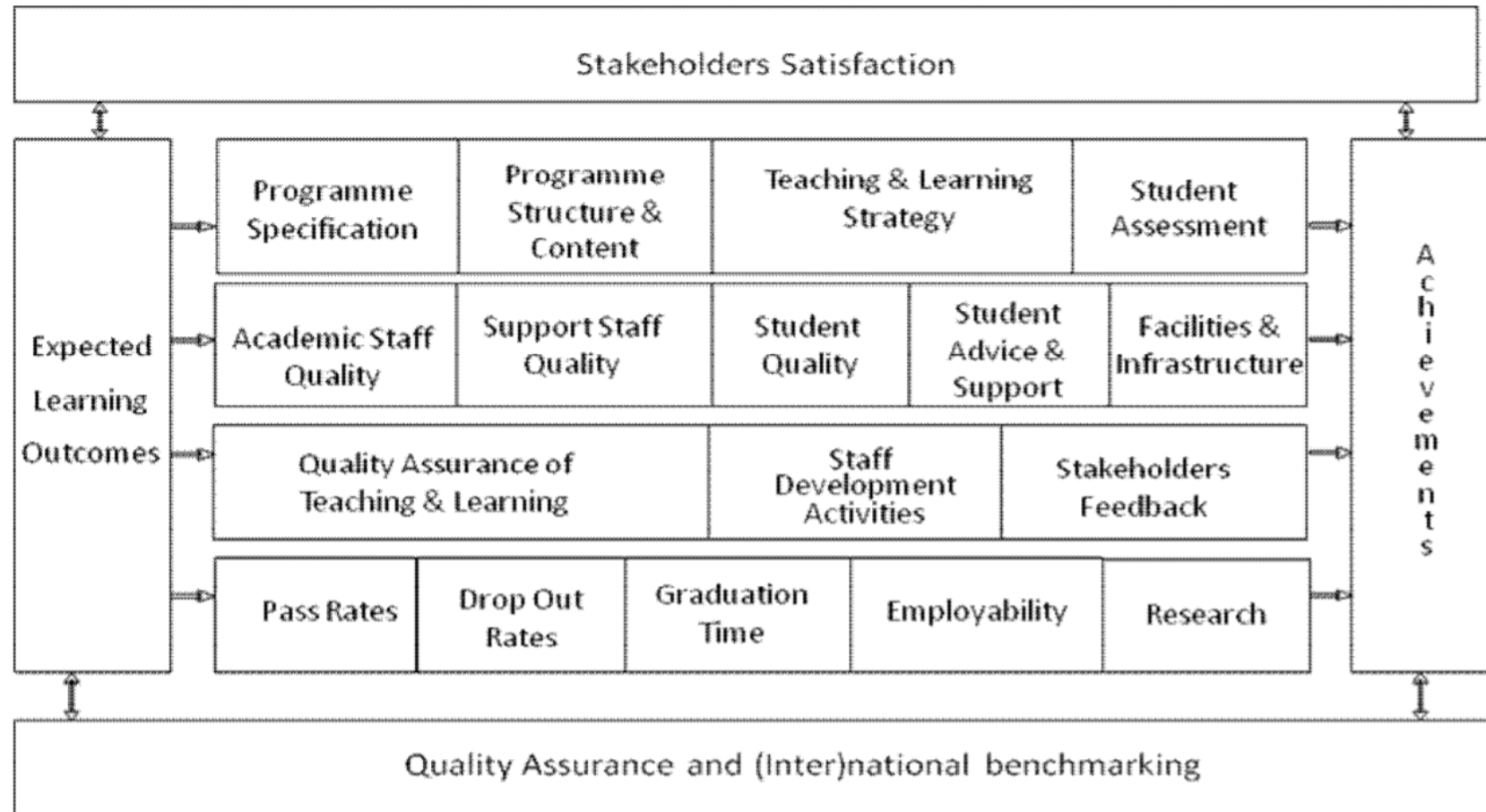
การศึกษาควรช่วยให้เยาวชนเกิดความรู้สึกยึดโยง
ต่อทั้งโลกภายในตนเองและโลกที่อยู่รอบตัวพวกเขา

AUN-QA

AUN-QA

Original Criteria	Revised Criteria
1. Goals and objectives; expected learning outcomes	1. Expected learning outcomes
2. Programme specification	2. Programme specification
3. Programme content	3. Programme structure and content
4. Programme organisation	
5. Didactic concept and teaching/ learning strategy	4. Teaching and learning strategy
6. Student assessment	5. Student assessment
7. Staff quality	6. Academic staff quality
8. Quality of support staff	7. Support staff quality
9. Student quality	8. Student quality
10. Student advice and support	9. Student advice and support
11. Facilities and infrastructure	10. Facilities and infrastructure
12. Quality assurance of teaching/ learning process	11. Quality assurance of teaching and learning process
13. Student evaluation	
14. Curriculum design	
15. Staff development activities	12. Staff development activities
16. Feedback stakeholders	13. Stakeholders feedback
17. Output	14. Output
18. Stakeholders satisfaction	15. Stakeholders satisfaction

AUN-QA Reference Model



Misunderstanding

Misunderstanding in Education Transformation

หลายความเข้าใจที่คลาดเคลื่อนเกี่ยวกับ Education Transformation ในยุคดิจิทัล

- ☐ ลงทุนด้าน IT เรียกว่าการปฏิรูปการศึกษา
- ☐ เทคโนโลยีจะมาแทนที่ครูในห้องเรียน, ครู/อาจารย์ที่ไม่ใช้เทคโนโลยีในการสอนเป็นสิ่งผิด
- ☐ ต้องมีหรือต้องสร้าง App เพื่อเสริมสร้างการเรียนรู้ด้วยดิจิทัลเท่านั้น จึงจะเป็นการศึกษามนโลกดิจิทัล
- ☐ การห้ามใช้เทคโนโลยีในห้องเรียน เป็นทางออกให้นักเรียนเกิดความสนใจ และตั้งใจเรียน
- ☐ คนเป็นครู อาจารย์ผิดไม่ได้ ต้องรู้ทุกเรื่อง

หลายความเข้าใจที่คลาดเคลื่อนเกี่ยวกับ Education Transformation ในยุคดิจิทัล

- ❑ สังคม ครอบครัว ภาครัฐกิจ ไม่จำเป็นต้องมีส่วนร่วมในการปฏิรูปการศึกษา
- ❑ ใช้เงินในการปฏิรูป ยิ่งมากยิ่งดี
- ❑ ปลอ่ยให้นักเรียนนักศึกษาหาความรู้ในอินเทอร์เน็ตก็เพียงพอแล้ว
- ❑ เอาข้อดีของการศึกษาจากต่างประเทศมา “ยำใหญ่” รวมกัน ก็ปฏิรูปการศึกษาได้แล้ว
- ❑ ต้องสร้าง MOOC ตามสมัยนิยม, ต้องมี KMS; Knowledge Management Systems ถึงจะเข้าสู่ยุคดิจิทัล