PART 4

Seamless Interest-Driven Co-Creator Theory (SIDC Theory)

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- Seamless IDC Theory (SIDC Theory): Extending IDC Theory by taking into account that learning occurs in the seamless AI World in order to achieve Global Harwell Goal
- Harweller and a framework of Global Harwell Education

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Interest-Driven Creator Theory (IDC Theory)

2009

a one-year experiment in an elementary school
for one 3rd grade class

2009
Modeled Sustained Silent Reading (MSSR)

2009

writing (with peer response)

Remarkable research results

- **Read**
  - **170 books (average)**
- **Writing**
  - **3rd grade students' writing reached to 6th grade level**
  - **Word choice and number of new ideas were noticeable**

	1st	2nd	3rd	4th	5th	6th	7th	8th
# of words (average)	233.92	369.72	328.33	296.81	373.61	387.62	601.58	694.25

PIRLS 2016

international assessment on reading
for grade 4 students

Country /Region (50)	Achievement (Score)	like reading
Singapore	2nd	40th
Hong Kong	3rd	33rd
Taiwan	9th	28th

TIMSS 2015

international assessment on mathematics
for grade 4 students

Country /region (49)	Achievement (Score)	confidence
Singapore	1st	45th
Hong Kong	2nd	44th
South Korea	3rd	49th
Taiwan	4th	48th
Japan	5th	47th

examination-driven ➔ low interest, low confidence

‘Interest’ doesn’t seem to be a word in the *education dictionary* in Asia!

Interest-Driven Creator Theory (IDC)
(Asian Researcher Coauthors, 2018)

Taiwan
- Tak-Wai Chan, National Central University
- Chen-Chung Liu, National Central University
- Ben Chang, National Central University
- Calvin Liao, NTUNS
- Fu-Yun Yu, National Cheng Kung University
- Zhi-Hong Chen, National Taiwan Normal University

China
- Ronghuai Huang, Beijing Normal University
- Xiaoqing Gu, East China Normal University
- Hercy Cheng, Central China Normal University

Hong Kong
- Siu-Cheung Kong, The Education University of Hong Kong
- Ronnel King, The Education University of Hong Kong
- Minhong Wang, The University of Hong Kong

Australia
- Jon Mason, Charles Darwin University

Singapore
- Chee-Kit Looi, Nanyang Technological University
- Lung-Hsiang Wong, Nanyang Technological University
- Wenli Chen, Nanyang Technological University
- Longkai Wu, Nanyang Technological University

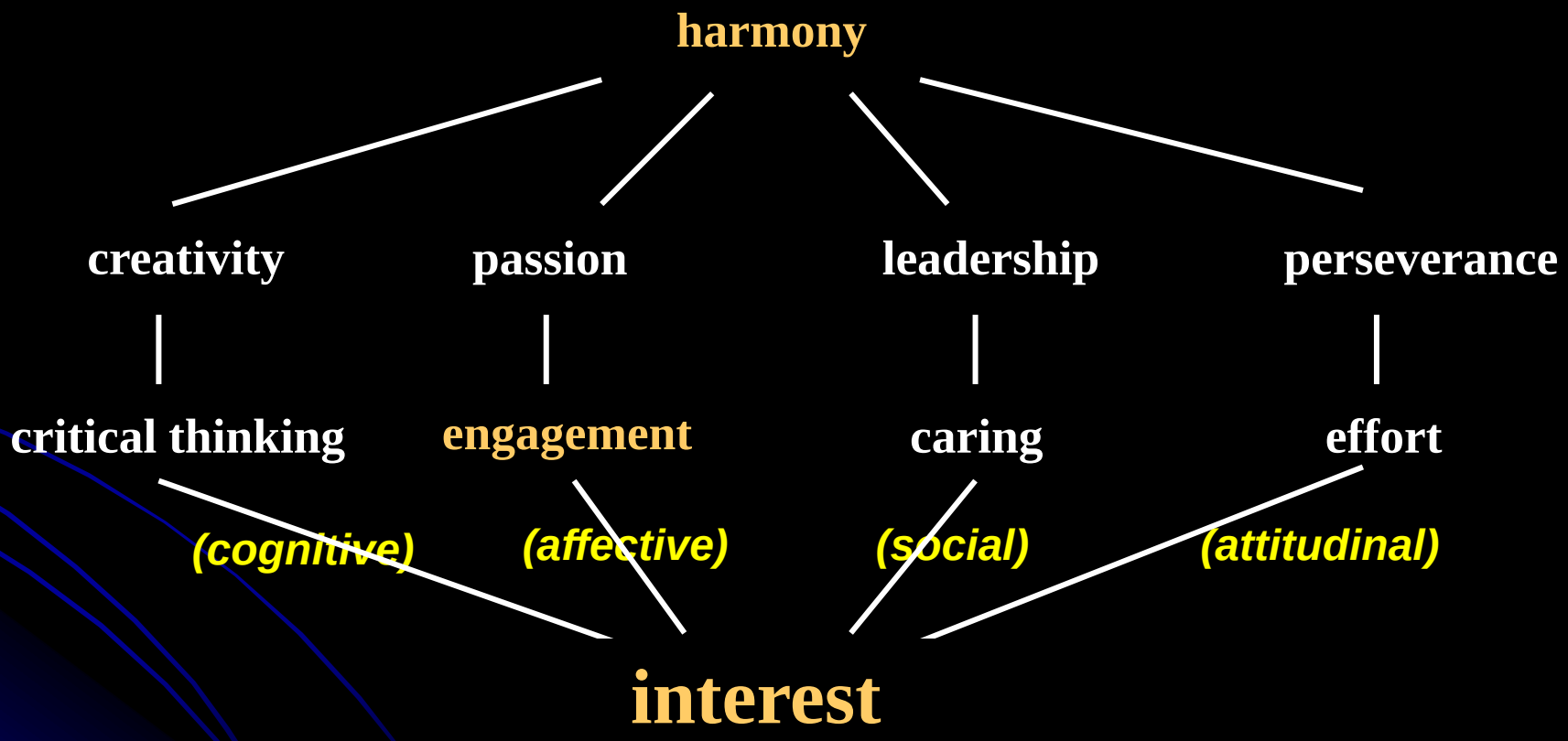
Malaysia
- Su Luan Wong, Universiti Putra Malaysia,

Korea
- Heisawn Jeong, Hallym University, Republic of Korea
- Hyo-Jeong So, Ewha Womans University

Japan
- Hiroaki Ogata, Kyoto University

India
- Sahana Murthy, Indian Institute of Technology

Beyond knowledge acquisition



21st Century Competencies

by a group of active Taiwanese digital learning researchers (2013)

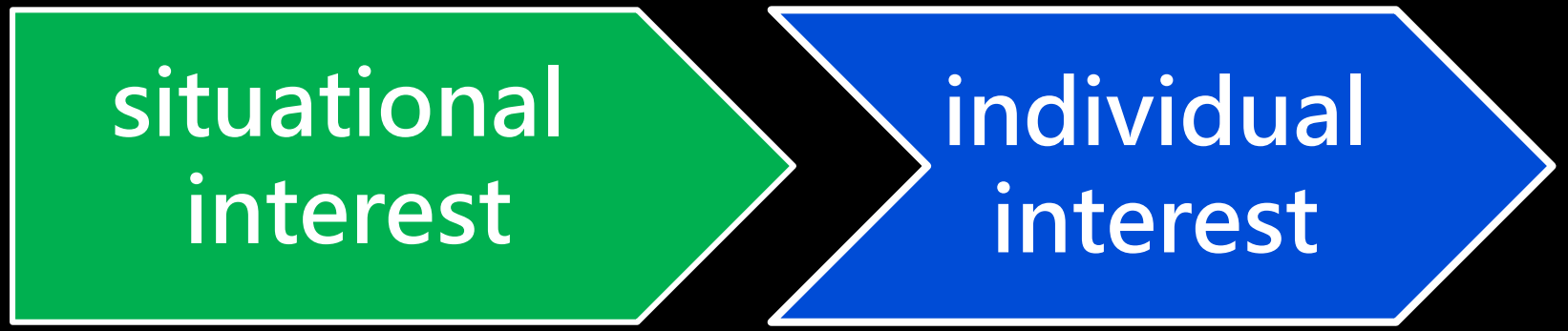
L4C

Learning FOR Competencies

10. Lifelong learning habit
10. Complex problem solving
10. Critical thinking & reflection
10. Collaboration & communication
10. Creativity & imagination

5 key elements of IDC Theory

1. Interest *as mental representation*
   - learning as development of interest
2. Creation *as learning process*
   - how to design learning process as creation process
3. Interest *as learning strategy*
   - how to create (learn) with interest, not with pain, and hence to develop interest
4. Habit *as regular interest development*
   - how to develop habit and hence develop interest day-by-day
5. Collaboration and Copresence *as harmonious cultural development*
   - how to nurture societal harmony

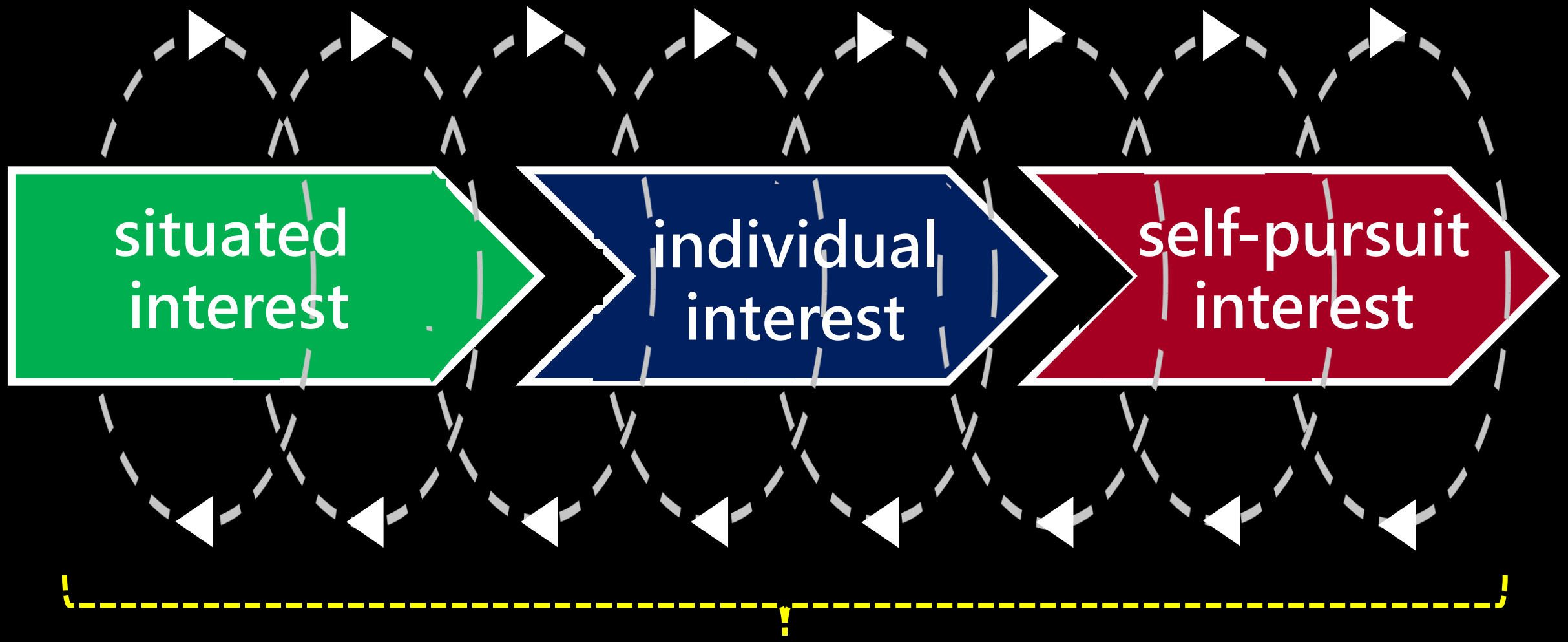


stages of interest development

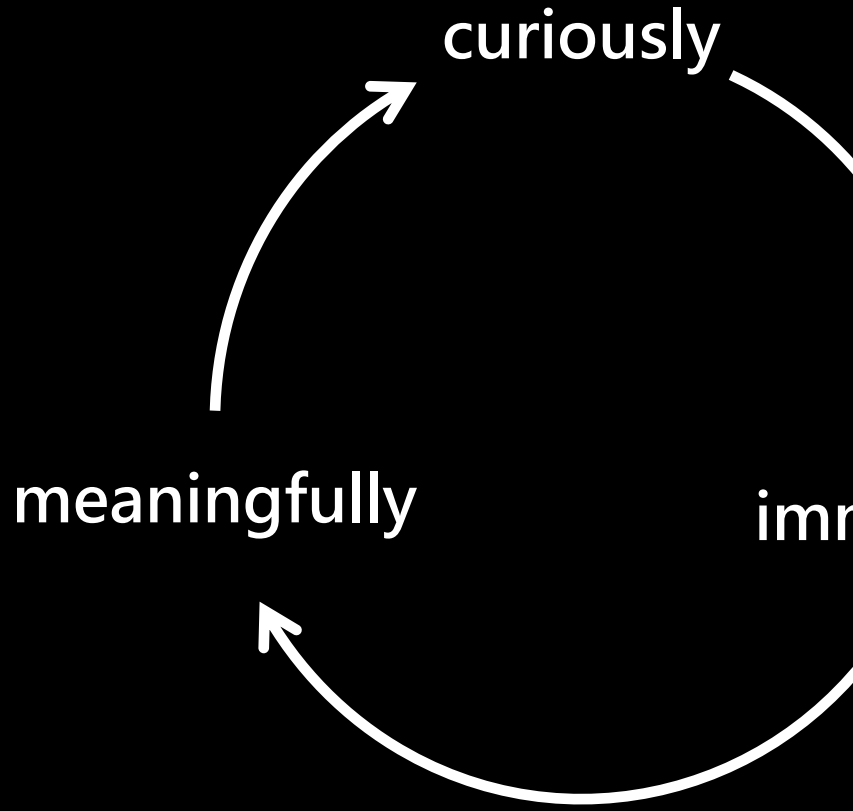
Learning a domain is viewed as developing interest of the domain at different stages

stages of interest development

We need interest development loop



interest development loop

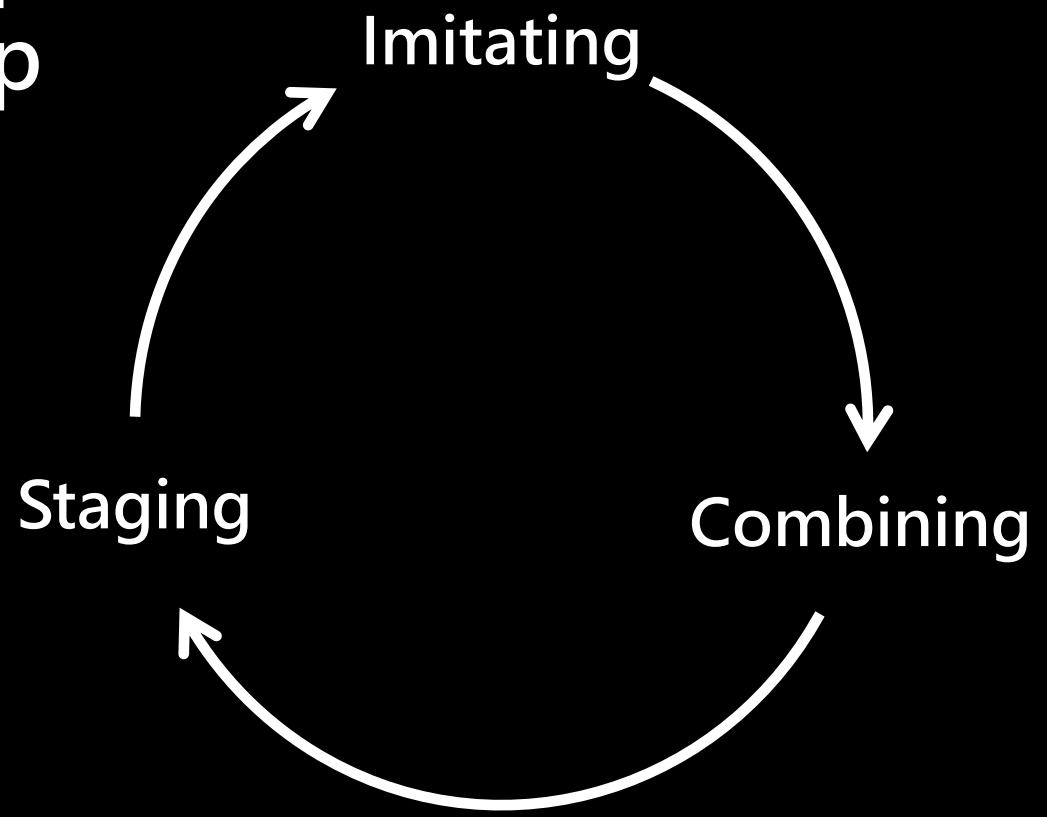


What is learning?

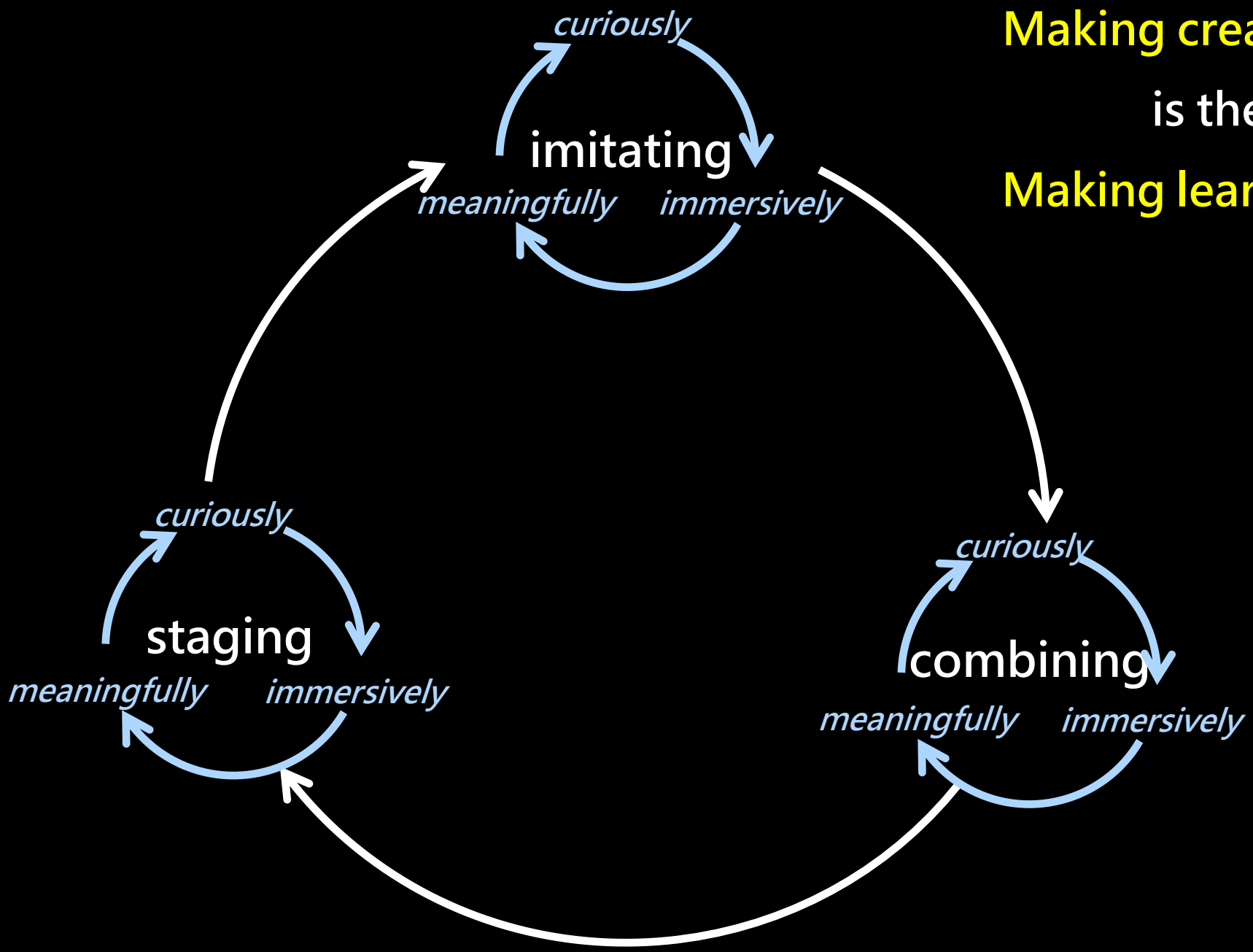
Learning is the same as creation!

Learning is the same as creation

creation loop
learning loop



Learning speaking is creation
Learning cooking is creation

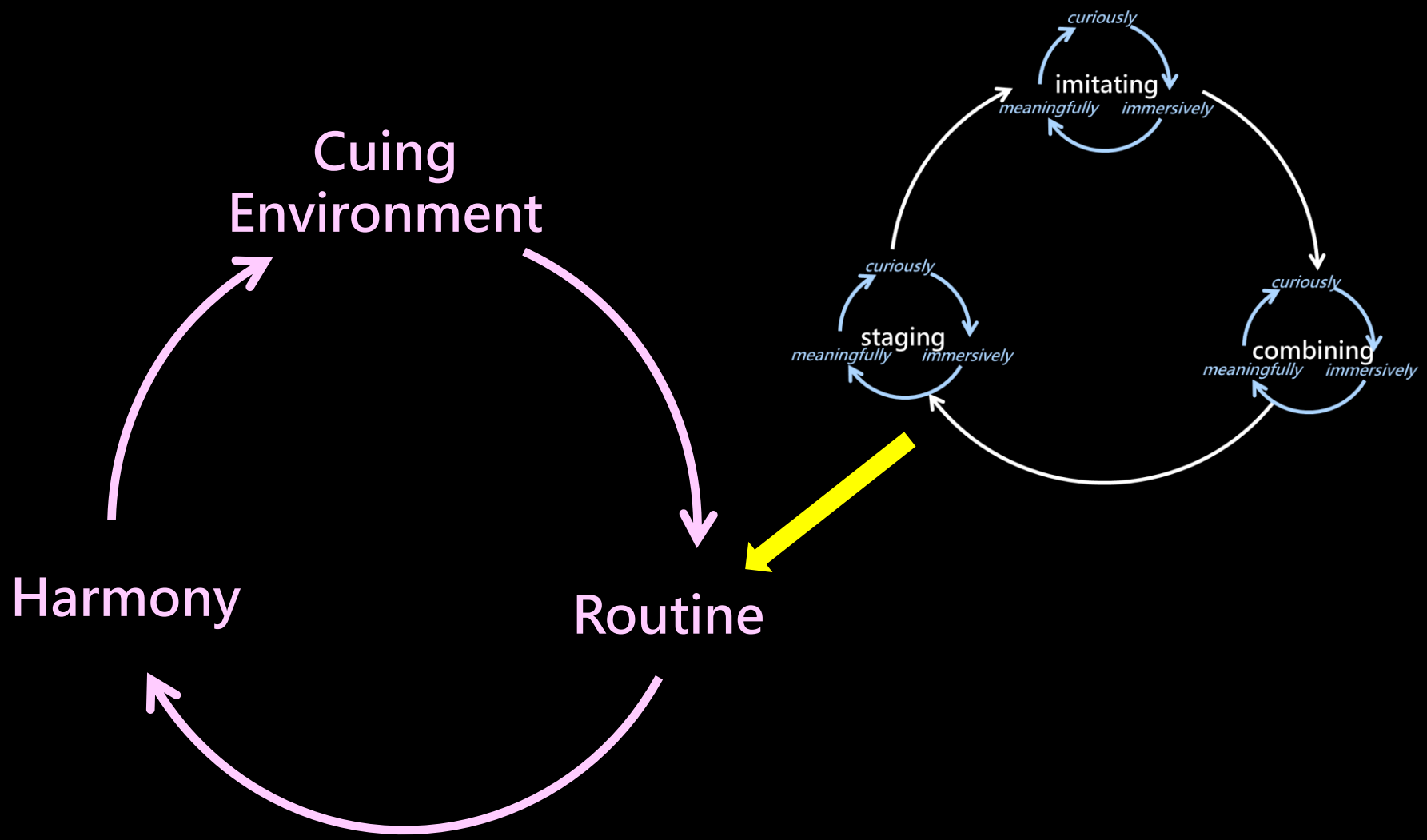


Making creation interesting

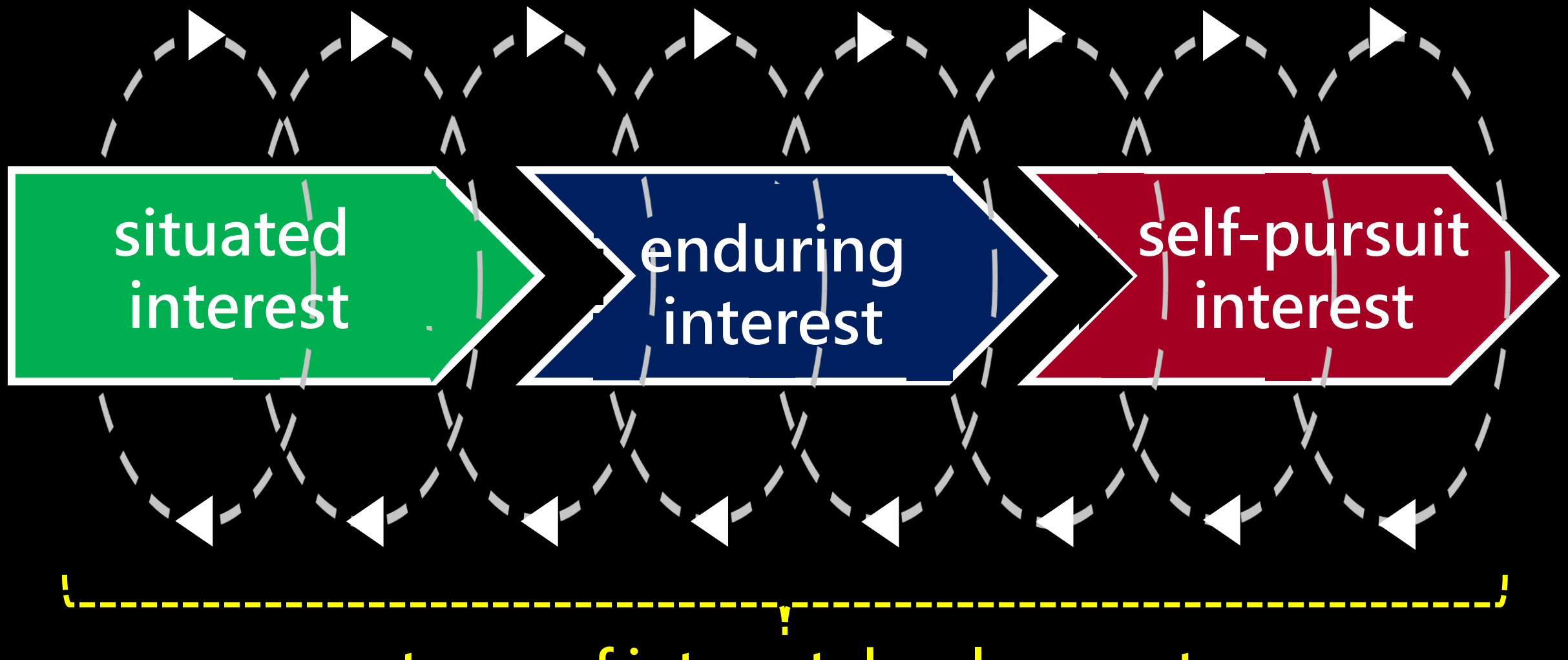
is the same as

Making learning interesting

Habit loop


Cuing
Environment
Routine
Harmony
curiously
imitating
meaningfully
immersively
curiously
staging
meaningfully
immersively
curiously
combining
meaningfully
immersively

develop learning-interest of a domain with habit loop



Individual IDC vs Group IDC

"School is a social institution. When we talk about the concepts of interest, creation, and habit, we may refer to the characteristics of an individual or to those of a group. We can consider an individual's interest or a group's, an individual's creation or a group's, or an individual's habit or a group's……" (Chan, et al., 2018)

We value competition

- Competition drives progress, whether it is individual or group
- In real life, like sports or commerce, collaboration often goes with competition:
  - Inter-group competition while inner-group collaboration
- As long as the rules of the game are fair, competition is socially acceptable
- To maintain harmony, every competitor should psychologically prepare for the possibility of loss before undertaking a challenge. Furthermore, those who do lose should learn to accept their loss gracefully.
- In other words, if one has not psychologically prepared for the possibility of loss, one should not participate in a competition.

Emphases on

collaboration & copresence

(and hence harmonious cultural development)

co-interest

co-creation

co-habit

A slight change of a name will help

harmonious cultural development!

from

Interest-Driven Creator Theory (IDC Theory)

to

Interest-Driven Co-Creator Theory (IDC Theory)

Seamless IDC Theory
(SIDC Theory)

A theory that informs how to design
IDC learning in the Seamless AI World.

Conjecture

A successful implementation of

SIDC Theory in the Seamless AI World

can significantly contribute to the resolution of

the productivity problem.

The four problems

(Switch the order, considering its pressing need)

1. The *global educational goal* problem
   - rethinking the educational goal from the global perspective
2. The *productivity* problem
   - the performance or output/input problem

SIDC Theory partially responds to this problem

3. The *school restructuring* problem
   - the problem how school is being transformed
4. *The lifelong, personalized curriculum problem*
   - the extension of the ITS's Holy Grail problem

The *productivity* problem

compared to traditional classrooms

- **2-sigma learning performance improvement**
  summative assessment (Bloom, 1984)
  - **robust learning**
    - **retention**
    - **transfer**
    - **accelerated learning**

- **2-sigma affect improvement**
  - **assuming there could be objective measure on affect**
  - **still not clear which affect attributes are most crucial …**
  - **confidence (or efficacy) and interest must be included**

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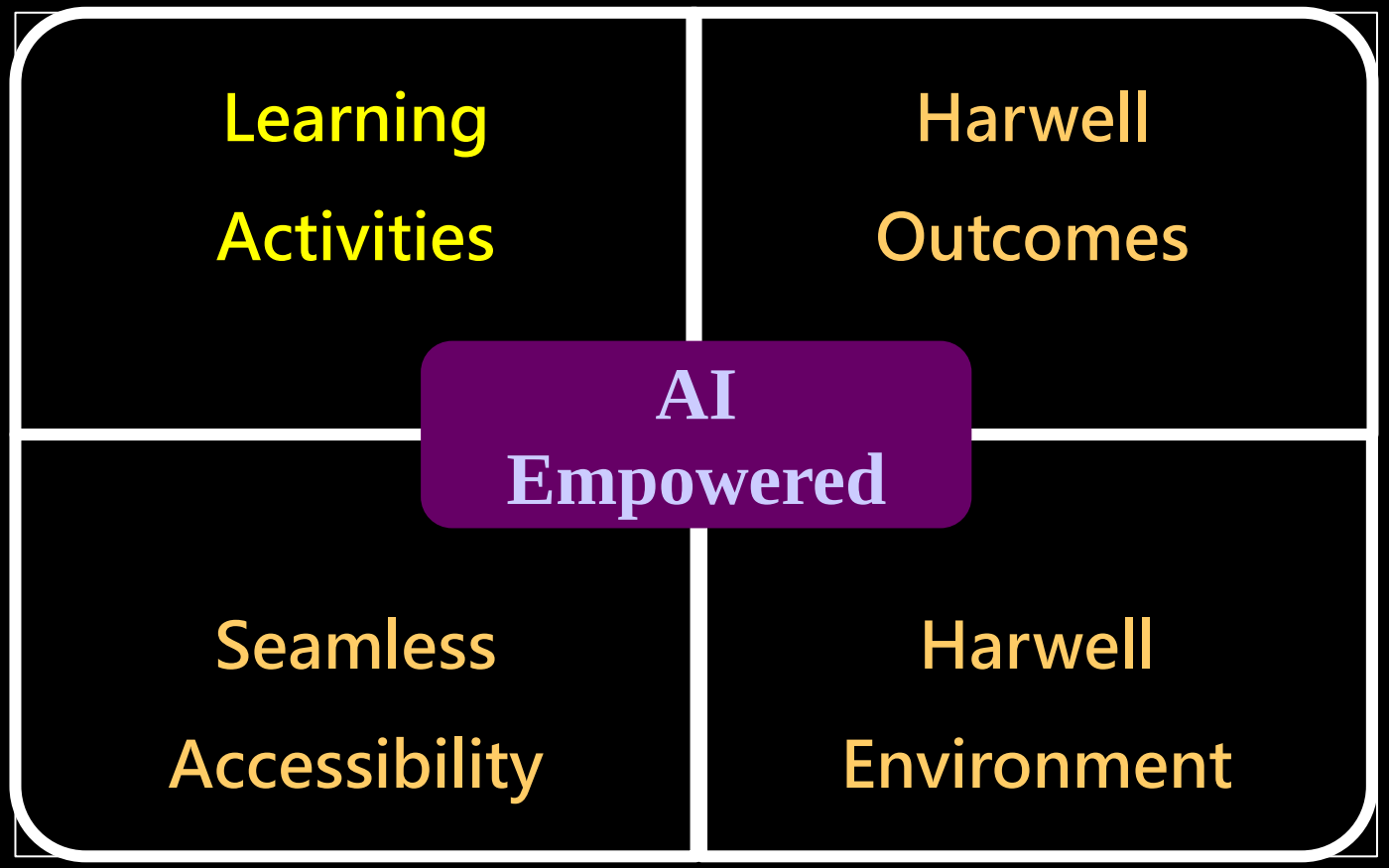
Harweller (H-PISA)

- a person who practices global Harwell as a personal value and goal
- a person who has interests and expertise in a wide range of disciplines, particularly in the humanities domain (Polymath)
- a person who, driven by their interests, pursues new knowledge and creates habitually (Interest-Driven Co-Creator)
- a person who plays sport well and habitually (Sportsman)
- a person who is devoted to esthetics and pursues beauty and art (Aestheticist)

Global Harwell Education

Seamless IDC Theory



Learning with Harwell Values

Seamless AI World

Human Resources

Digital Resources

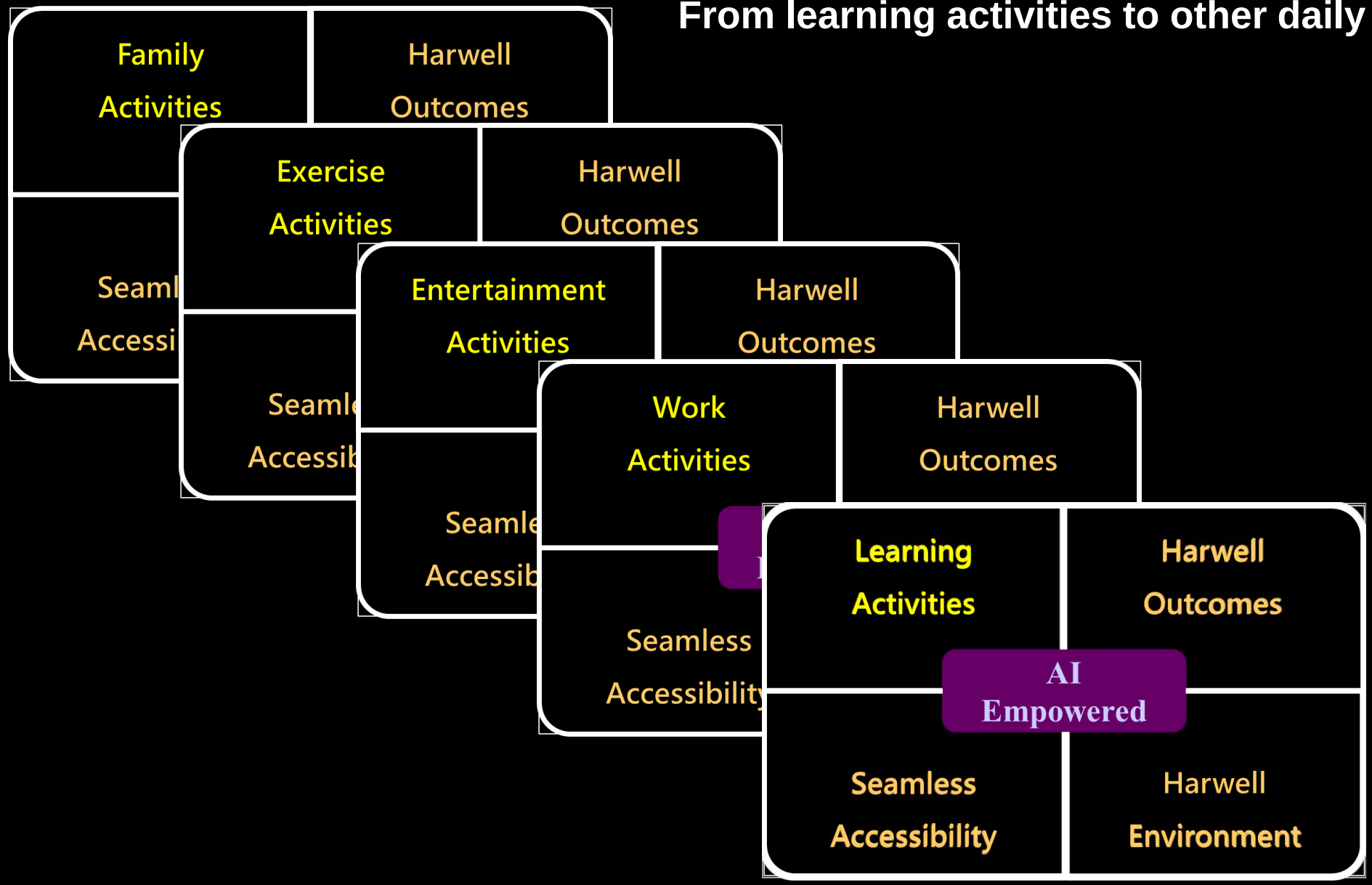
Digital Safety

Attaining Harwell

The Harwell World

Learning within Harwell Environment

From learning activities to other daily activities



How to proceed?

A possible approach to spreading the thoughts and initiating actions

1. **Awareness**

   Build global and local awareness of the goal

2. **Model sites**

   Establish experimental and model sites in various countries and regions

3. **Global educational park**

   Create a ‘global educational park’ by closely connecting these sites via technology, and

4. **Dissemination**

   spread out the principles of global education and initiate actions for practice