

# Innovative Teaching and Learning Experiences through Research and Creative practices

Sylvester Arnab, <sup>PhD</sup>

Professor in Game Science

<http://sylvesterarnab.com>

Applied Innovation Lead @ Disruptive Media Learning Lab  
Coventry University, UK

Associate @ Post-Digital Cultures Research centre



@sarnab75 #gamification #GChangers

DISRUPTIVE  
MEDIA  
LEARNING LAB

# University REMIXED

Visioning and experimenting  
with 21st century learning





## Flipped Learning

Innovative learning practice through active participation

[Learn More](#)

## Playful & Gameful

Games for learning, and learning through play

[Learn More](#)

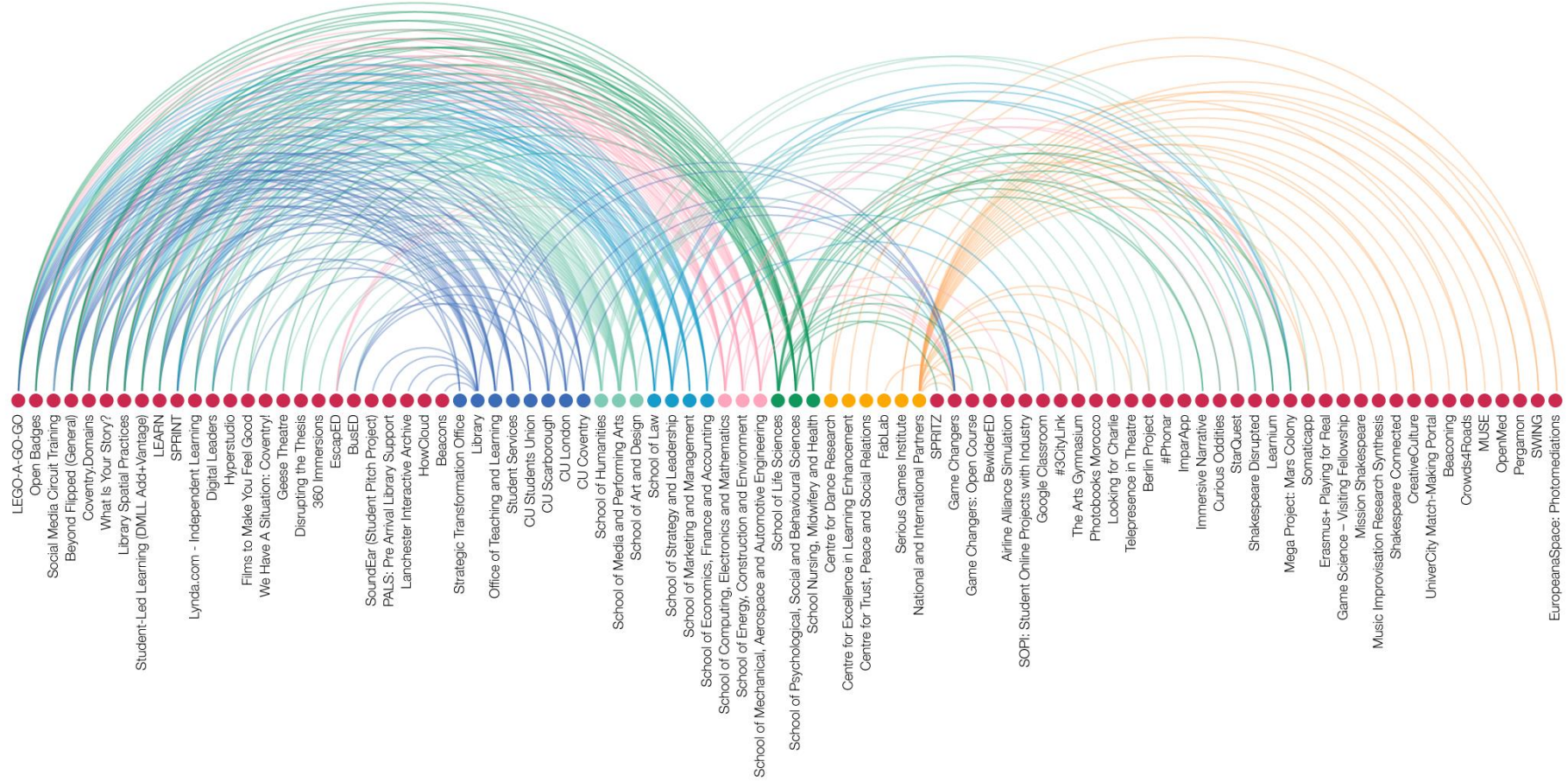
## Digital & Networked

Foster competency and engagement in a networked age

[Learn More](#)



# Across all schools and beyond...





The lab has engaged with

3,179

Students

31

Courses

1,101

Staff

25 Student  
Activators

Employed by the lab

*"By working for DMILL I am still able to learn whilst working very professionally in a creative environment. I am always free to have my opinion as a Graphic Designer and am always included. DMILL has really helped me find my place in the design industry which I am very thankful for."*

Emilia Byrne

DMILL Student Activator (2nd Year Graphic Design student)

# Motivation



"Sorry, pal, right metaphor,  
wrong motivation."

## Types of Motivators

### Intrinsic

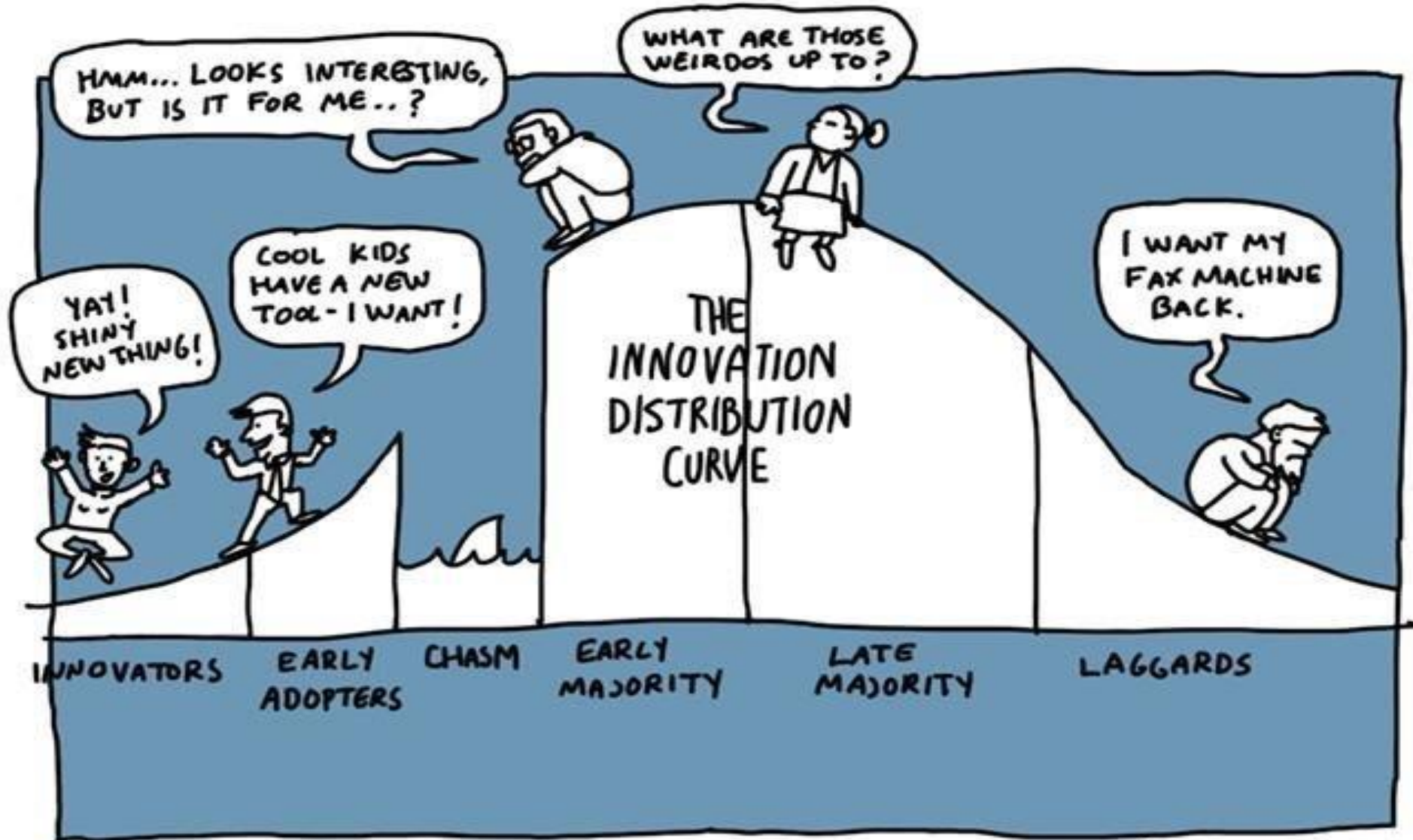
- autonomy
- belonging
- curiosity
- love
- learning
- mastery
- meaning
- ...



### Extrinsic

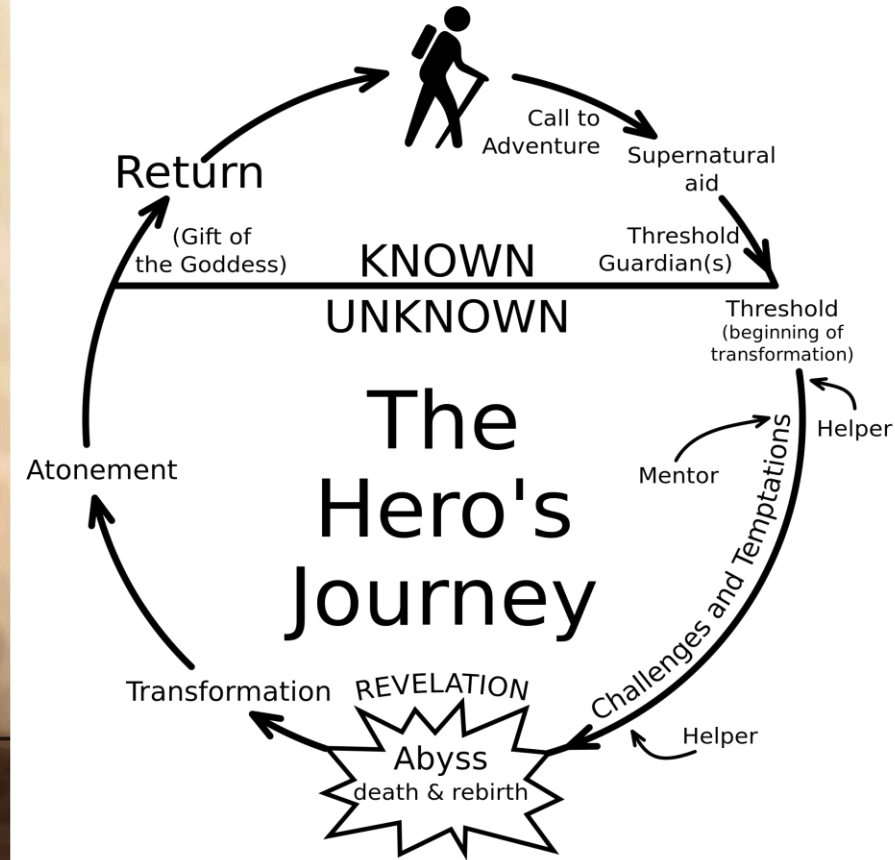
- badges
- competition
- fear of failure
- fear of punishment
- gold stars
- money
- points
- rewards
- ...





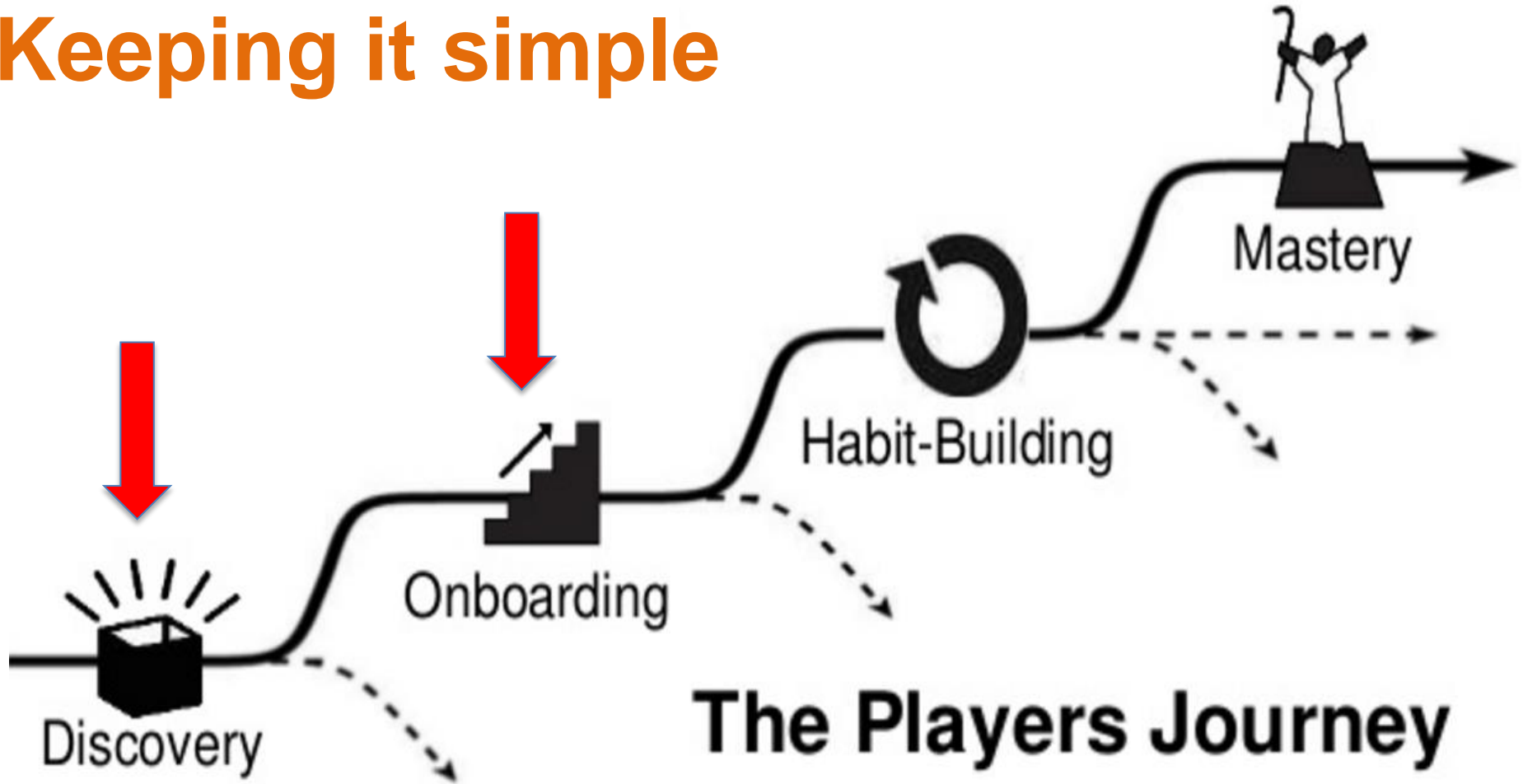


# Designing an empowering experience?





# Keeping it simple



*(Amy Jo Kim, MFW15)*

# Co-Creativity

## Game Changers

## Creative Culture

Beyond Flipped SPRINTs facilitated...

### 4 Course

Designs

### 5

New Add+vantage  
modules

### 1

School-wide CPD  
module

*"SPRINT was a real eye opener. It's a great method for challenging dogmatic and tried and trusted thinking in a safe space, to produce ideas and strategies outside the box in quick time. I can certainly see multiple applications in improving the student experience."*

Dr Keith Gray

Associate Head of School, Economics, Finance and Accounting (Faculty of Business and Law)

## bewilderED

## ESCAPÉD



# Creative Learning spaces...



The collage displays a variety of digital media projects, including websites, videos, and interactive content. The projects are arranged in a grid-like fashion, showcasing a range of themes and styles. Some projects are more formal and academic, while others are more creative and personal. The projects include:

- My Christmas Crescendo**: A holiday-themed website with a dark background and a large image of a Christmas tree.
- United We are, Besters!**: A website with a green background and a large image of a group of people.
- Digital Literacy**: An educational resource website with a blue background and a large image of a person.
- Project Proposal**: A student project page with a white background and a large image of a person.
- Ash Tran Humanitarian Engineer**: A portfolio website with a white background and a large image of a person.
- B-MELT**: A website about blended learning with a white background and a large image of a person.
- Dr. John Grima Politics and History**: A political website with a blue background and a large image of a person.
- Stories of Copeland, Kinross and Hickey**: A historical website with a white background and a large image of a person.
- SILBU HUMAN**: A website about human rights with a white background and a large image of a person.
- Art and film education**: An educational website with a white background and a large image of a person.
- Inspired media education**: A website about media with a white background and a large image of a person.
- Frederick Douglass**: A website about the abolitionist with a white background and a large image of a person.
- KADILLAC AL-GHURFI**: A website about a car with a white background and a large image of a car.
- The Power of Killing: The Rise of War**: A website about war with a white background and a large image of a person.
- LIVING LEARN**: A website about learning with a white background and a large image of a person.
- Digital Literacy**: Another educational resource website with a blue background and a large image of a person.
- Inspired media education**: Another website about media with a white background and a large image of a person.
- Frederick Douglass**: Another website about the abolitionist with a white background and a large image of a person.
- KADILLAC AL-GHURFI**: Another website about a car with a white background and a large image of a car.
- The Power of Killing: The Rise of War**: Another website about war with a white background and a large image of a person.
- LIVING LEARN**: Another website about learning with a white background and a large image of a person.

Period	Staff	Students
Sept 2016 - Aug 2017	120	60
Sept 2017 - Mar 2018	130	900




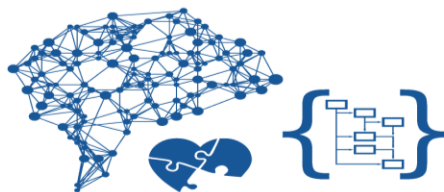
# Hybrid “spaces”: Merging Physical and Digital?




# Top 10 skills

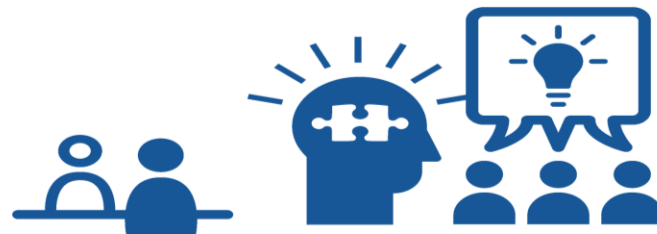
## in 2020

- 
1. Complex Problem Solving
  2. Critical Thinking
  3. Creativity
  4. People Management
  5. Coordinating with Others
  6. Emotional Intelligence
  7. Judgment and Decision Making
  8. Service Orientation
  9. Negotiation
  10. Cognitive Flexibility



## in 2015

- 
1. Complex Problem Solving
  2. Coordinating with Others
  3. People Management
  4. Critical Thinking
  5. Negotiation
  6. Quality Control
  7. Service Orientation
  8. Judgment and Decision Making
  9. Active Listening
  10. Creativity





We have developed and produced

# 35 Toolkits & Online Resources

2 Apps · 1 Course outline · 9 Guides · 20 Open Education Resources · 2 Flipped Toolboxes · 1 Worksheet

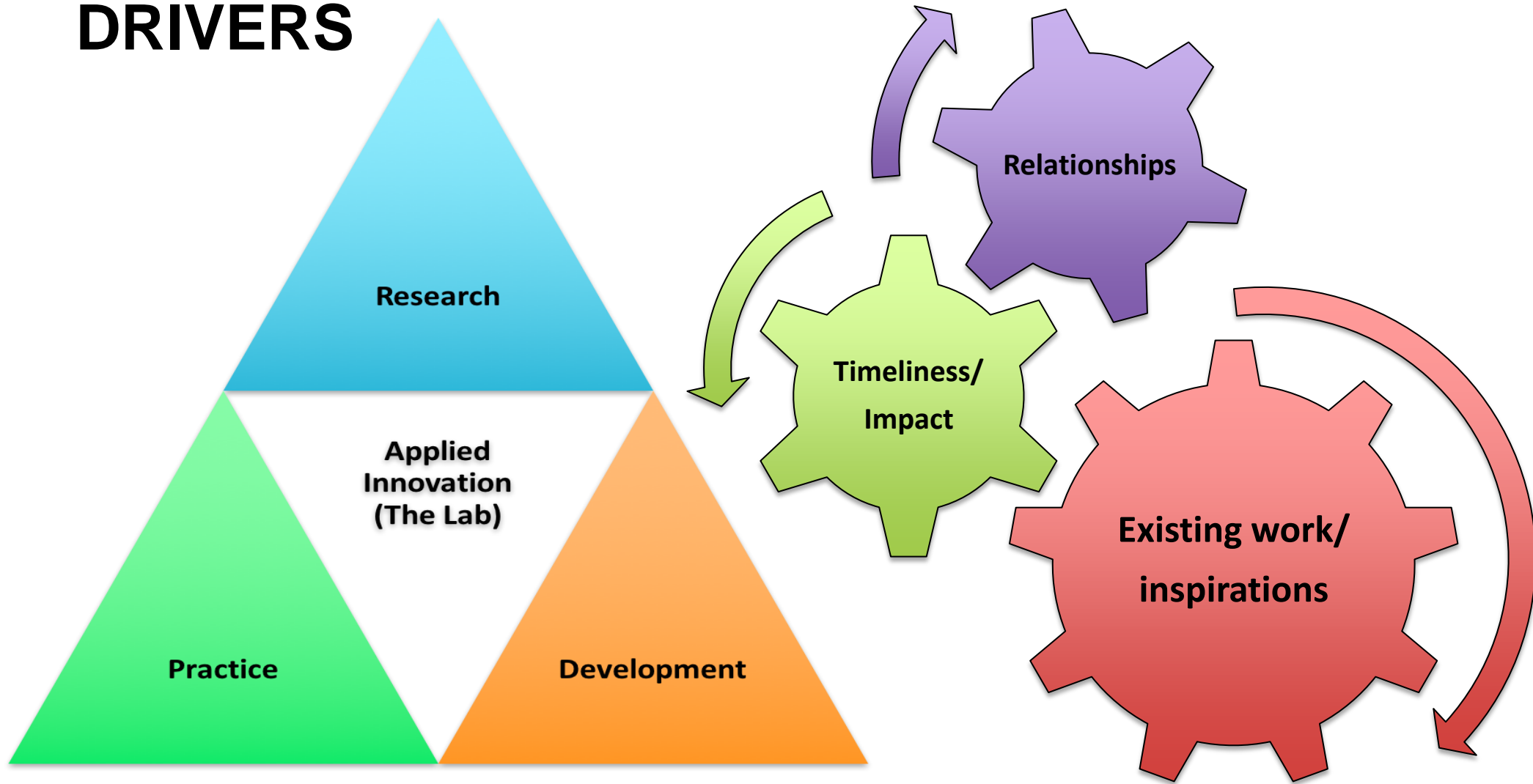
# 164

Videos created

# 1,009

Hours viewed

# DRIVERS





# 15 Research Bids Won

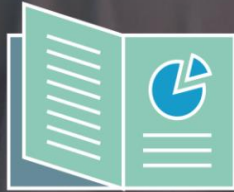
from a total of 43 projects submitted

with a total project value of

## 9,555,150

generating a total income to Coventry University of

## 1,780,381



# Design Experience inspired by PLAY and GAMES



Michael Morgenstern for The Chronicle

<http://chronicle.com/article/The-Looming-Gamification-of/233992>



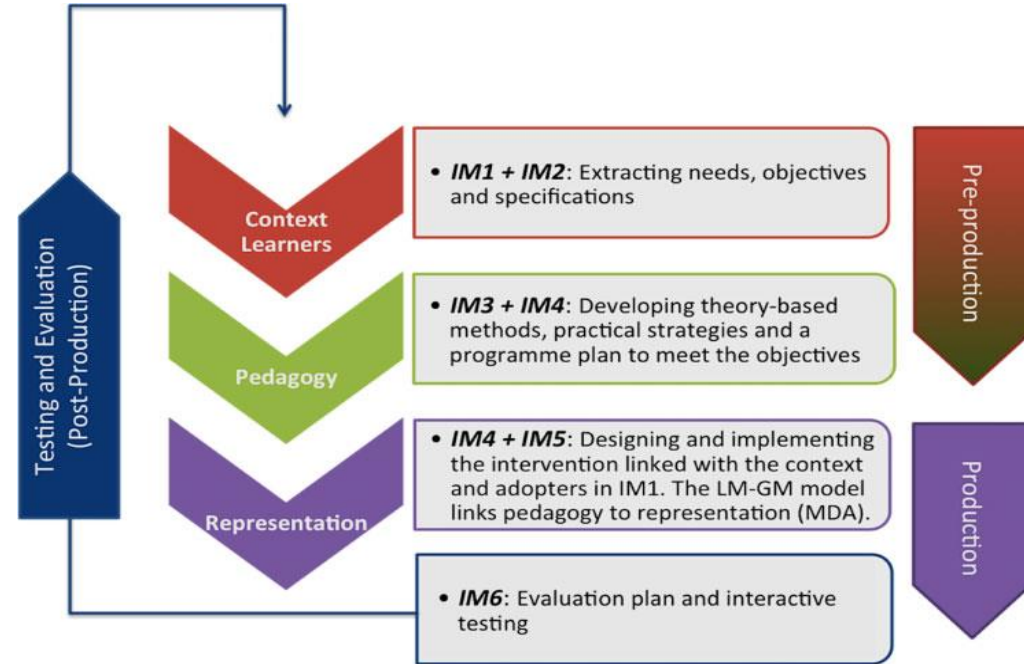
# Game Changers

Co-creativity through Playful and Gameful  
Practices

[gamify.org.uk](http://gamify.org.uk)    #Gchangers    #PlayRemix

# Holistic and Trans-disciplinary

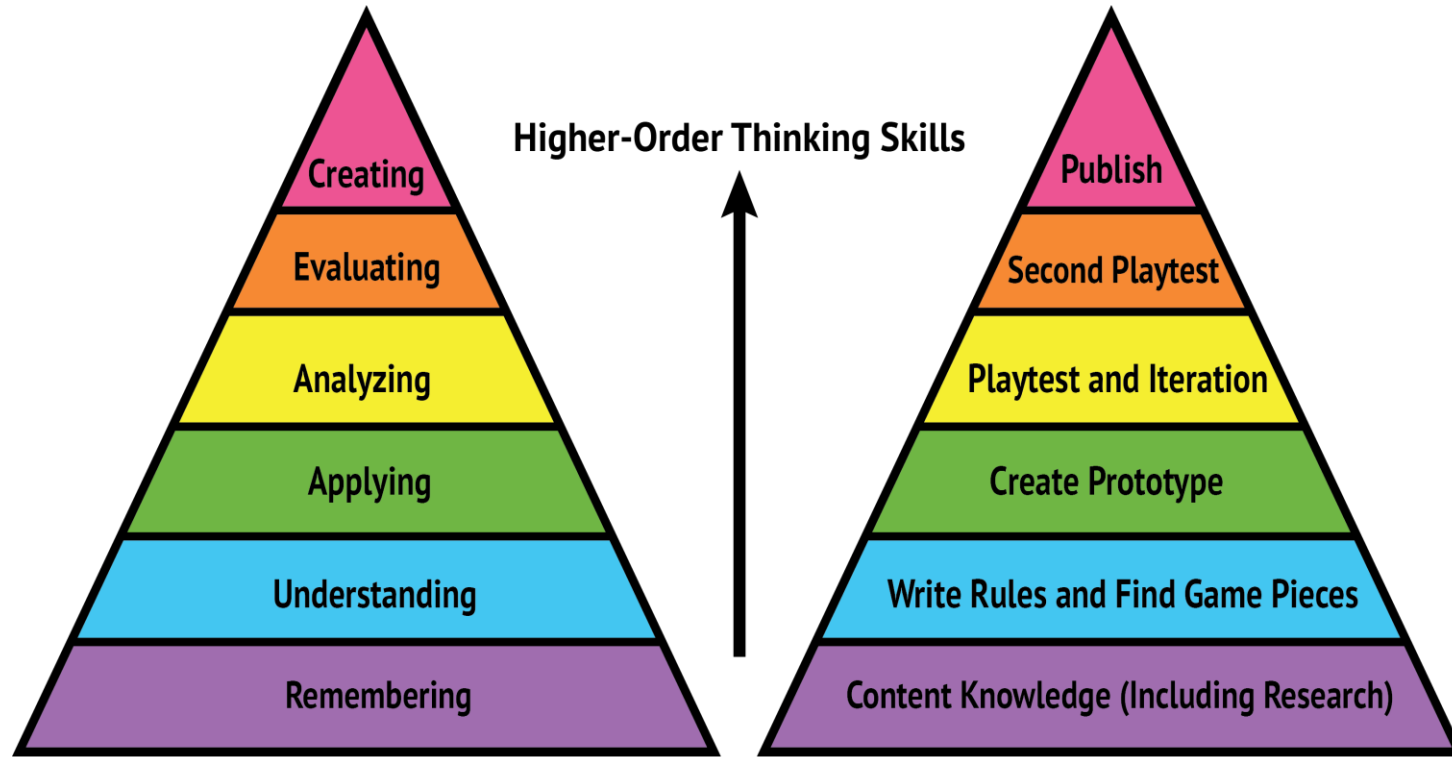
Layer 4: Technology	Interfaces	Multimedia	Analytics	Communication	Storage
Layer 3: Gameful Design	Mechanics	Narratives	Aesthetics	UX	
Layer 2: Dynamics	Mode	Location	Activities	Assessment	
Layer 1: Learning Plan	Learners	Lesson plan	Theories	Anchor points	Desired outcomes/ Measures



Arnab, S. and Clarke, S. (2017), ***Towards a trans-disciplinary methodology for a game-based intervention development process.*** British Journal of Educational Technology, 48: 279–312.  
doi:10.1111/bjet.12377



# Learning through a Game Creation process



## Bloom's Taxonomy and Game Design

# Creative Culture

WEDNESDAY, 26 SEPTEMBER 6, 2017 NEW STRAITS TIMES 11

**GAMIFYING EDUCATION**

## Game changer in the classroom

ZULITA MUSTAFA  
puls@nst.com.my

**G**AMES and play have always been a great stress reliever to many. But a stream of researchers is pushing it a step further by introducing games and play into the teaching of science, technology, engineering arts and mathematics.

Though the idea may seem too radical to most traditional educators, a research team in Sarawak is discovering the potential of using games and play in the teaching of the subjects.

Cocoon University, Sarawak, Mode Learning Lab Professor Dr Syazwan Amir said teaching should never be rigid and a one-sided communication in order to gauge students' understanding.

When the teaching method gets dry and rigid, students tend to be bored and lose interest. When this happens, the teacher will have to keep repeating the message to ensure it gets across, said Syazwan.

Cocoon University is collaborating with Universiti Malaysia Sarawak in the CreativeCulture project, which aims to address educational challenges within the context of inclusive learning for learners from the rural parts of Malaysia.

The project is funded by the Arts and Humanities Research Council, United Kingdom and Ministry of Higher Education Malaysia under the Newton-UK-UK programme.

Nothing beats hands-on experience and this is proven through medical doctors going through their studies without any on-the-job training. Or a chemical engineer who does not experiment in the lab and just learns theoretical information from a textbook.

Physical experience helps students understand better. Now imagine if we integrate games and play into teaching, added Syazwan.

Some educators in Europe and even in Asia include the use of Lego bricks into their lessons but the CreativeCulture project aims to reinvent traditional games such as complex hopscotch, hide and seek, and treasure hunt.

In a recent experiment, the research team held a session at SK Tasek Malapo in Sarawak where teachers and pupils took part in games coded to teach several subjects including mathematics.

At first no one wanted to try the math session, because of the nature and fear of the subject. But after a while the participants managed to get through the challenge, said Syazwan.

arts and culture boost creativity, which leads to innovation.

"It is a new way of thinking and meaning beyond existing skills; when combined, they become triggers for innovative thinking, an inherent must for engineering social transformation.

"We need fun, playful, hands-on, socially and culturally grounded exploration of scientific topics in schools to foster contextualised and deeper learning," Min said.

In fact, SMC Dr Thomas English teacher Aakline Sim said she has been using games in her students' class.

"Games help students understand better. They ignite imagination. The challenge is to keep up with interesting games inclusion," said Sim.

Another teacher, Chong Chee Huan, believes cultural grounded exploration in teaching but to students.

"The teacher must first understand the subject. Only then can the teacher craft an interesting game to incorporate into it," said Chong who teaches mathematics.

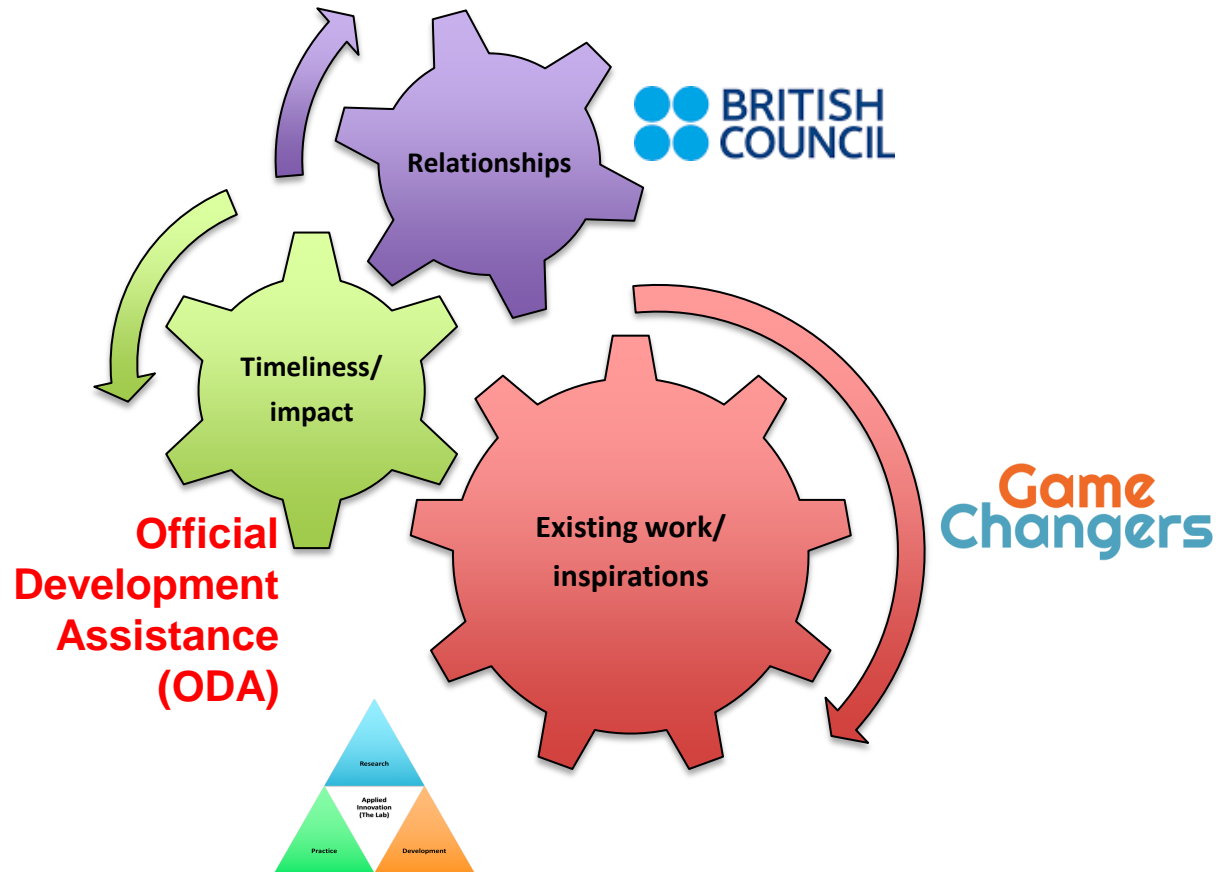
With the Sarawak government pushing for a digital economy, modern games such as Candy Crush and Angry Birds can also be used in the teaching of STEM subjects.

"Physics can be taught using the Angry Birds game and we can even look into the possibility of

**SK Tanjong Datu pupils and teachers learn science and mathematics through games.**

**Teams of lecturers and teachers discussing game design at the R&D Day Playworkshop.**

Recently the CreativeCulture Project held the



**Newton Fund**



**Arts & Humanities Research Council**

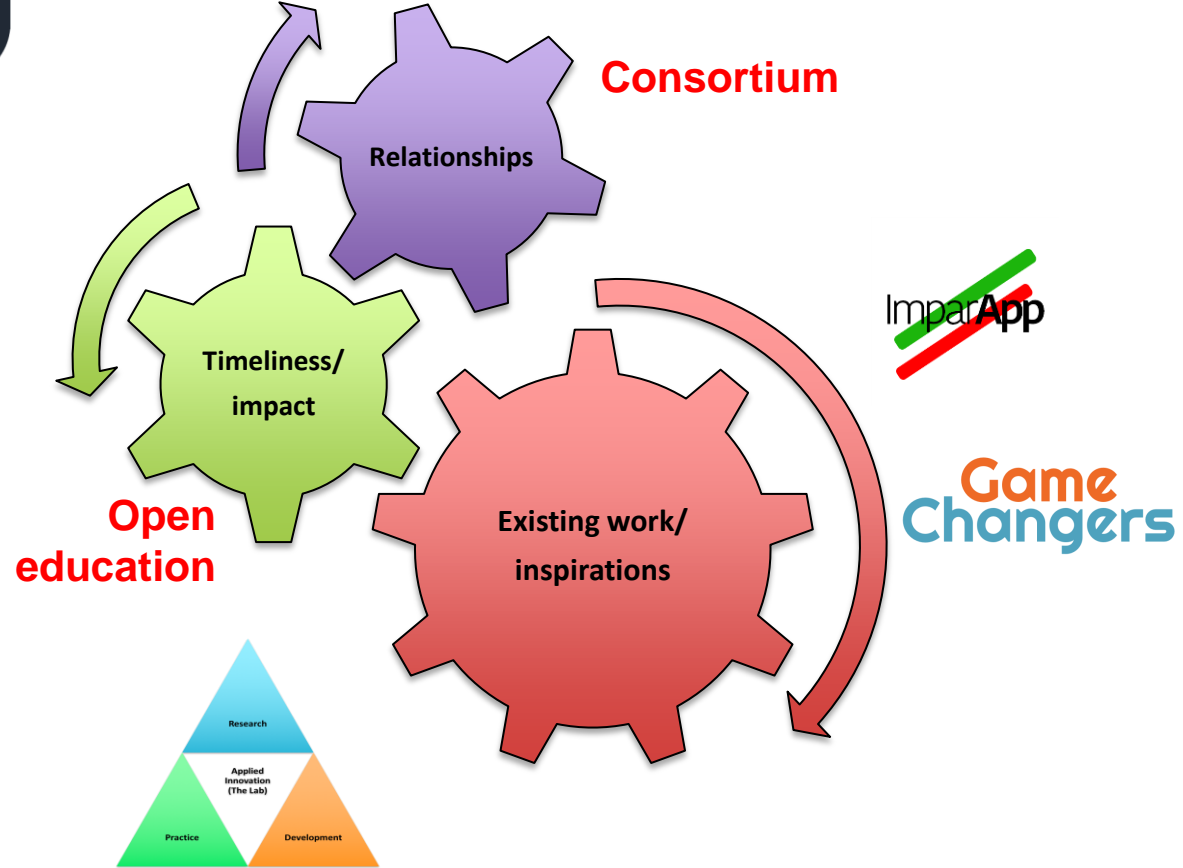
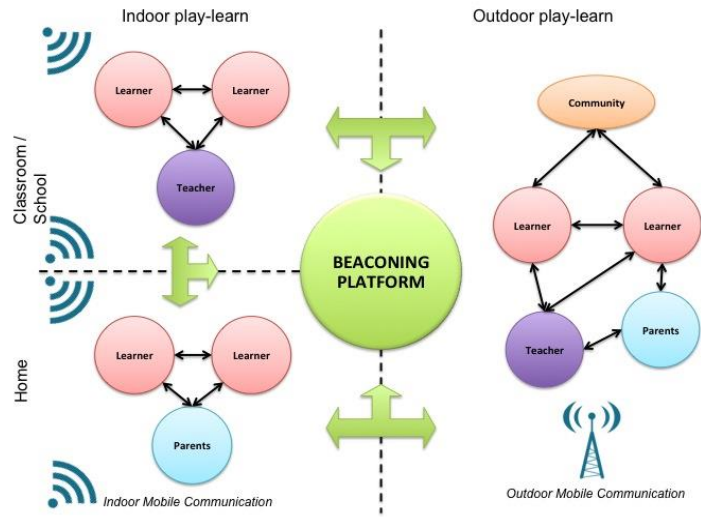


**KEMENTERIAN PENDIDIKAN TINGGI  
MINISTRY OF HIGHER EDUCATION**



# beaconing

BREAKING EDUCATIONAL BARRIERS WITH CONTEXTUALISED PERVASIVE AND GAMEFUL LEARNING



beaconing

BREAKING EDUCATIONAL BARRIERS WITH CONTEXTUALISED PERSVASIVE AND GAMEFUL LEARNING



bewilderED

Game  
Changers

Creative  
Culture

ESCAPÉD

ImparApp



**BOND**

Bringing Organisations & Network Development  
to higher levels in the farming sector in Europe



**ERASMUS**

CREATING OPPORTUNITIES FOR THE UK ACROSS EUROPE

HIGHER EDUCATION  
FUNDING COUNCIL *hefce* FOR ENGLAND

 **Newton  
Fund**

 Arts & Humanities  
Research Council

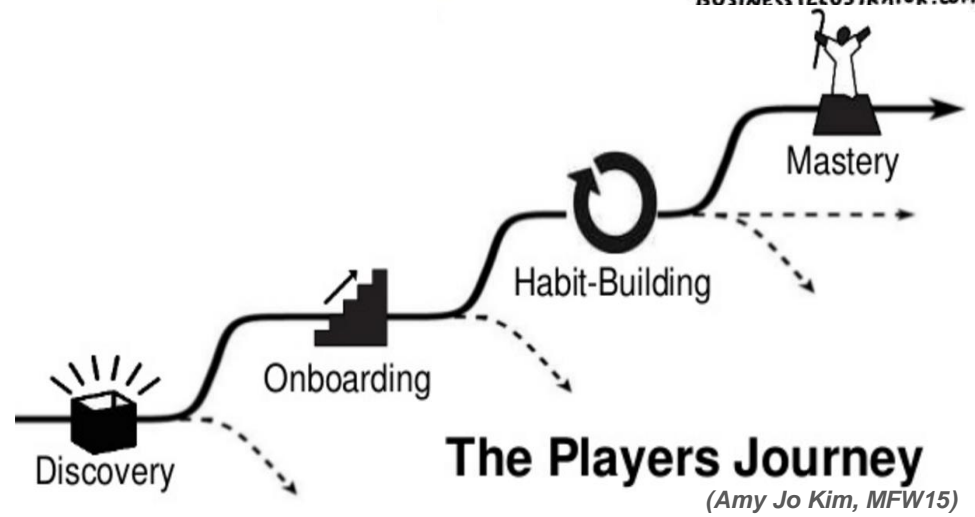
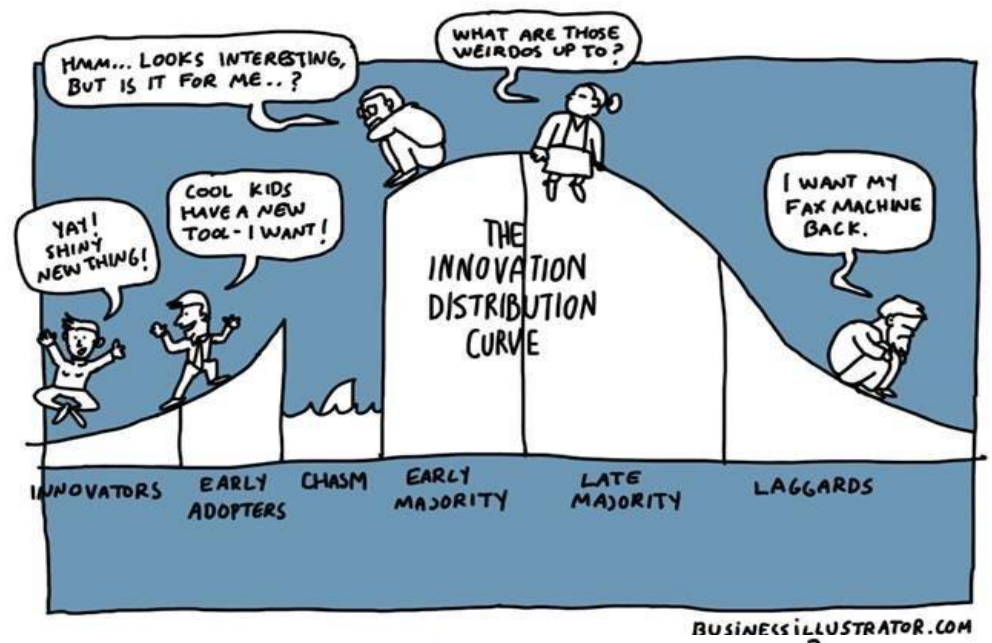
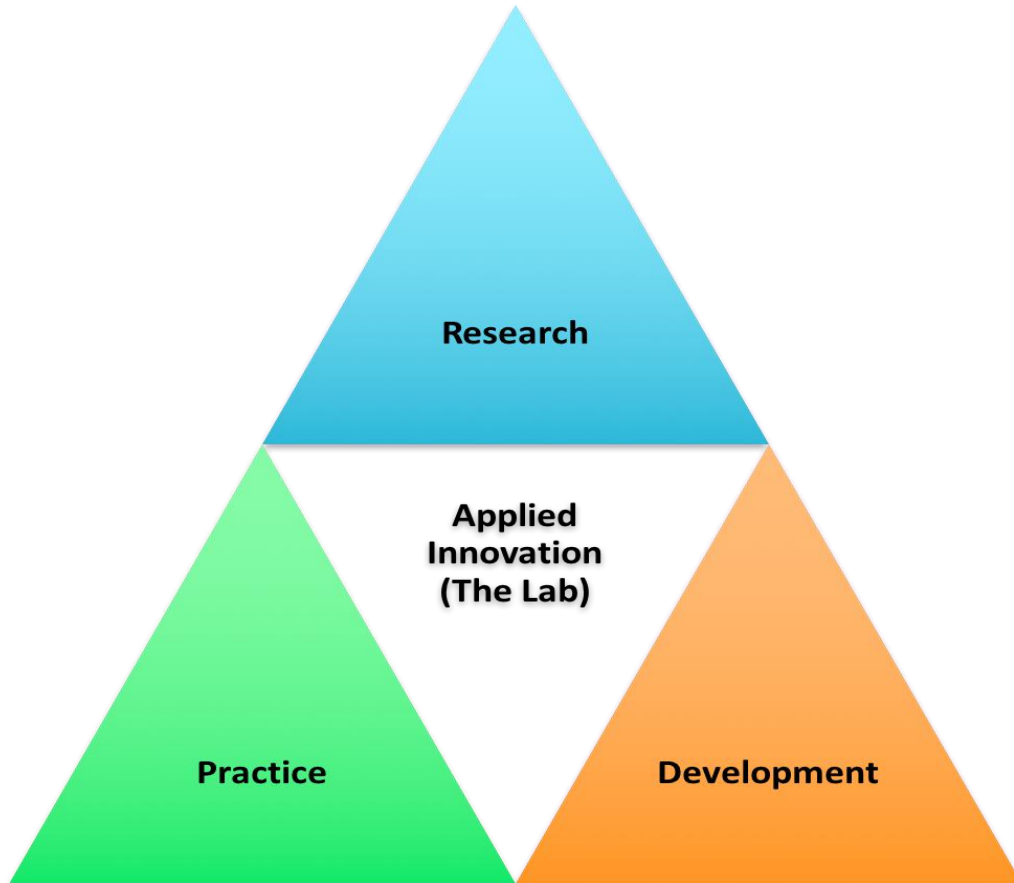




# Social Value



# Conclusion





# Thank You!



Sylvester Arnab, PhD

Professor in Game Science

[s.arnab@coventry.ac.uk](mailto:s.arnab@coventry.ac.uk)

**Blog:** <https://sylvesterarnab.com/>

**beaconing**  
BREAKING EDUCATIONAL BARRIERS WITH CONTEXTUALISED PERVERSIVE AND GAMEFUL LEARNING



**Game  
Changers**



**@sarnab75** #gamification **@beaconingEU**