

Gamification in Instruction: Exploring Possibilities from the Interplay between Pedagogy, Content and the Interest-Driven Creator Theory



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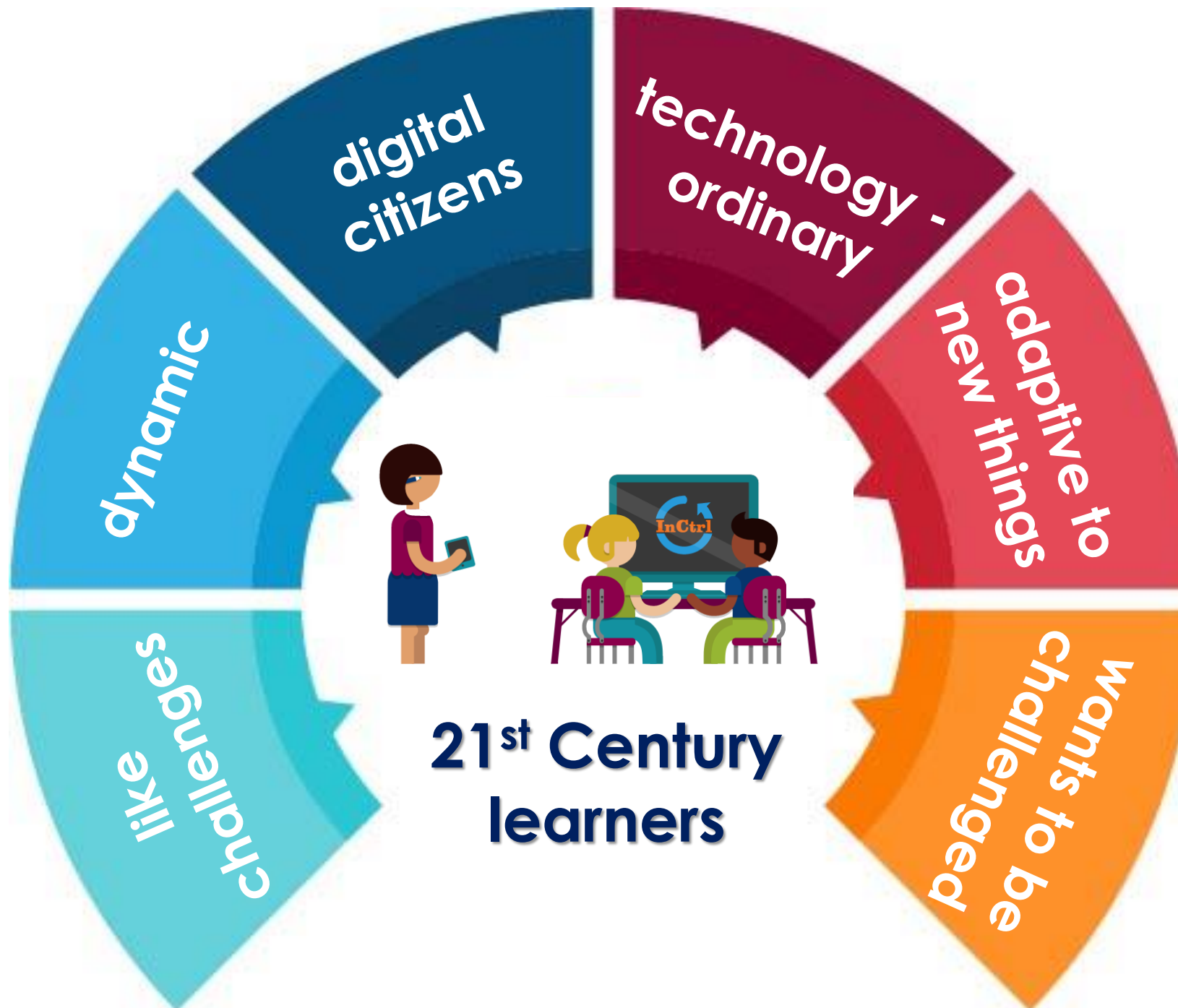
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**Right now
we spend
three billion
hours a week
playing online
games**

(Jane McGonigal, TED 2010)



What are the
traits of
21st Century
Learners?

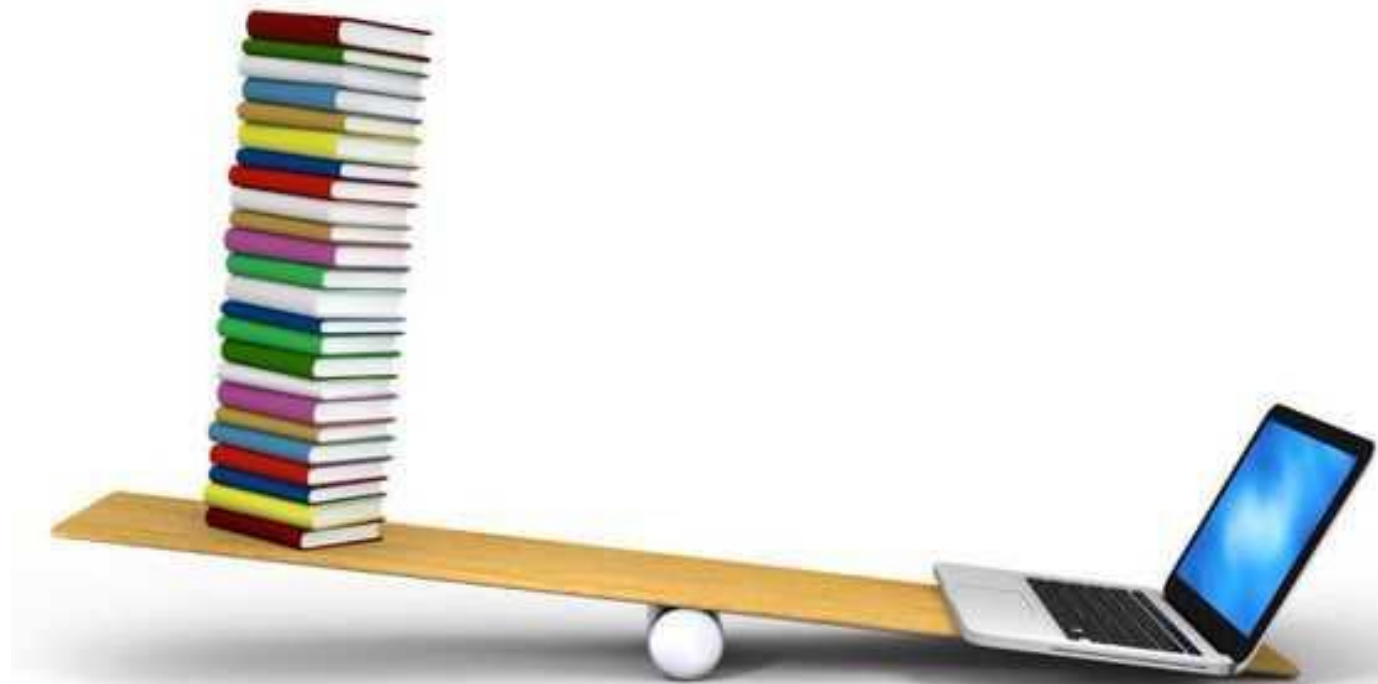


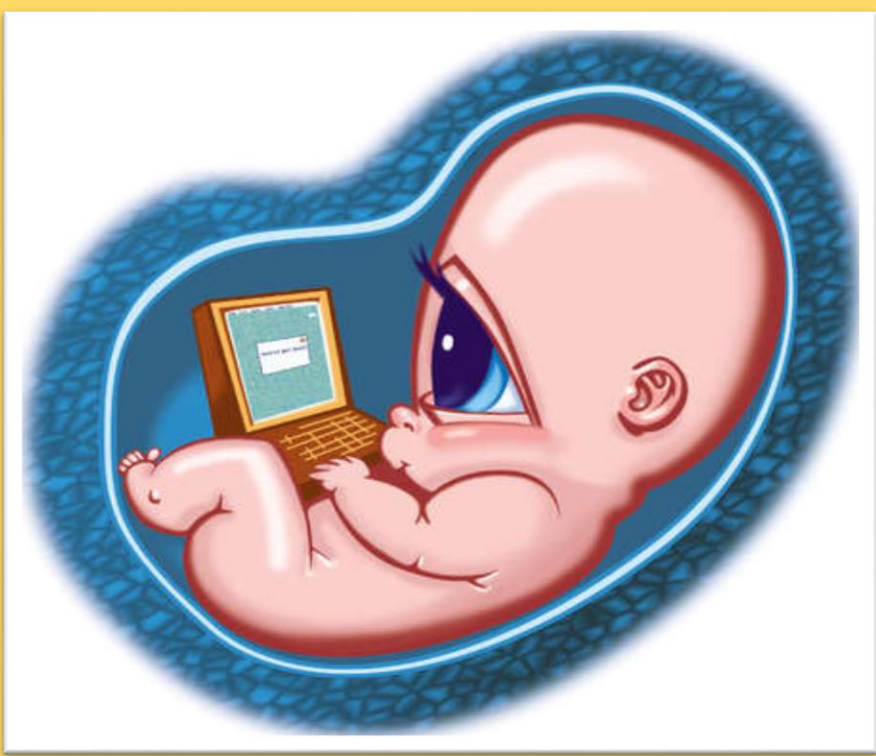


Ensuring rock solid clarity about where we want students to end up as a result of a sequence of learning is fundamental to educational success. Remembering that we cannot reach the mind we do not engage ought to be a daily compass for educational planning.

(Tomlimson, 2001)

However, the *dissonance* between the rapid pace of change in our culture – *socially and technologically* – and the traditional instructional methods that still form the foundation of our educational systems, is one of the hurdles in effective teaching learning process in the classroom.





Today's generation ...

**... have known technologies
their whole life!**

... are attached to technologies

**... need to be taught in a
different way**





Accelerate improvements in Higher Education instructions



Malaysia Education Blueprint 2015-2025

(Higher Education)

Create new generation that excels globally in a competitive environment



rethink

redesign

mode of

instruction

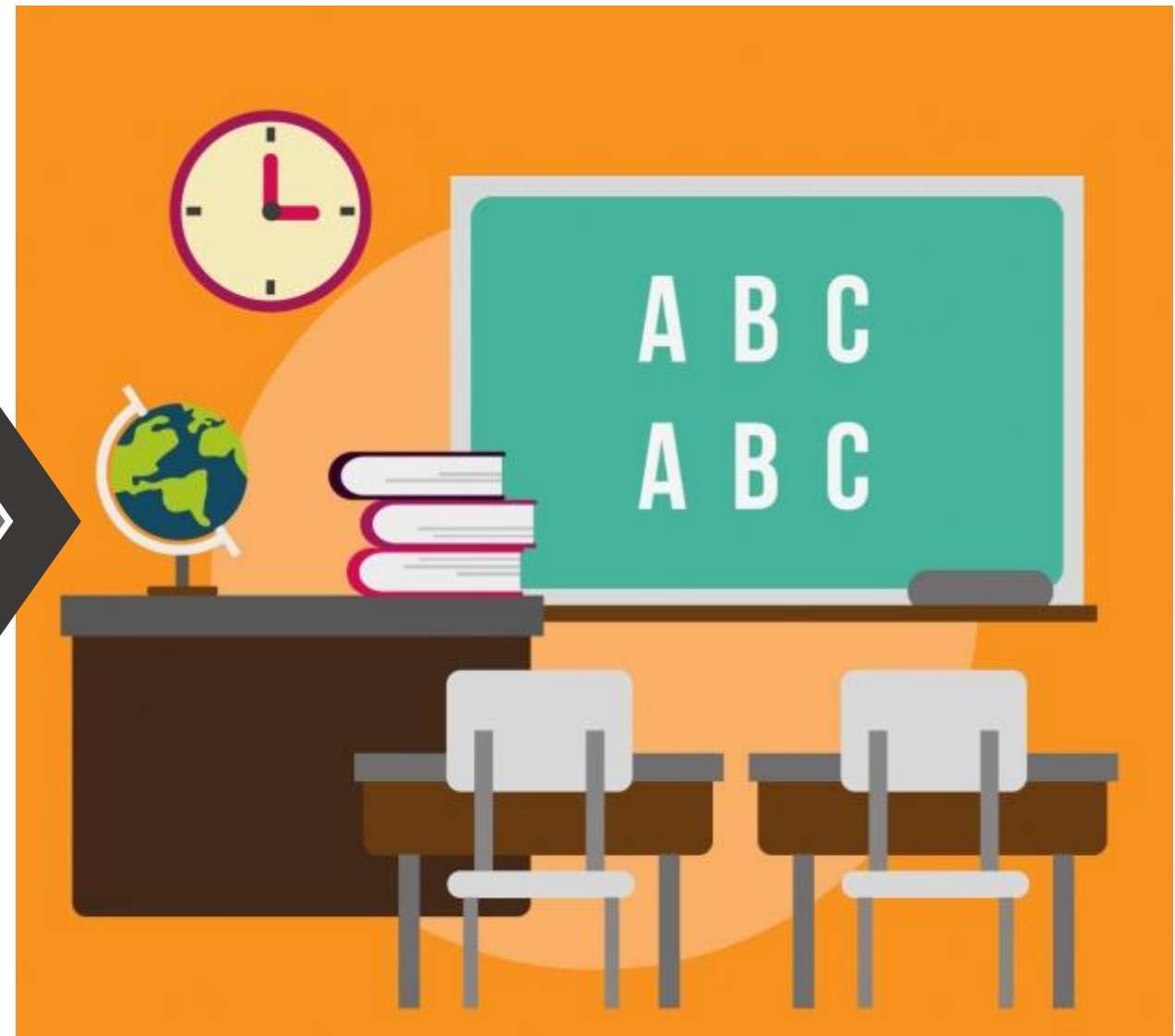
Challenge



Motivated

Engaged

Participative



game mechanics into non-game context

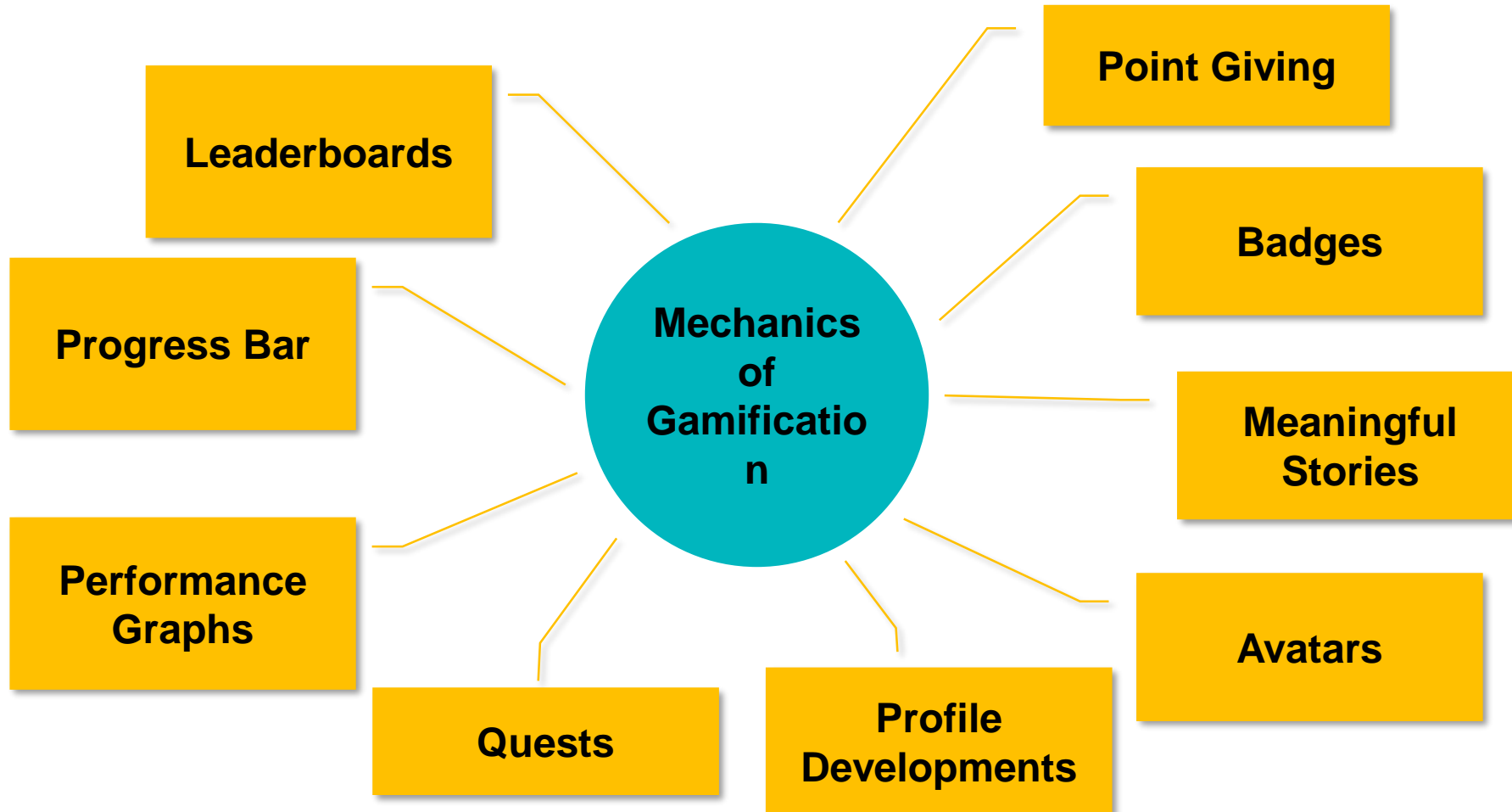
Borrowing the elements.....

Gamification in classroom instruction is defined as an approach whereby an instructor uses **game mechanics in non-game context** (Deterding, Khaled, Nacke, & Dixon, 2011), namely in teaching, to create a **fun and engaging** learning atmosphere (Amir & Ralph, 2014).




Mechanics of Gamification

The key elements that are common to many games



Other Additional Mechanics / Elements of Gamification

Rewards										Fixed Reward	Dependent
4 Ob On-boarding	5 Si Signposting	6 La Loss Aversion	7 I Investment	 Gamified UK				8 Pf Progress / Feedback	9 T Theme	10 N Narrative	11 C Curiosity
12 Tp Time Pressure	13 S Scarcity	14 St Strategy	15 F Flow	16 Co Consequences	17 Gt Guilds / Teams	18 Sn Social Network	19 Ss Social Status	20 Sd Social Discovery	21 Sp Social Pressure	22 Cm Competition	
23 Ch Challenges	24 Ce Certificates	25 L Learning	26 Q Quests	27 Lp Levels / Progression	28 Bb Boss Battles	29 E Exploration	30 Bc Branching Choices	31 Ee Easter Eggs	32 U Unlockables	33 Ct Creativity Tools	
34 Cu Customisation	35 Ap Altruistic Purpose	36 Cg Care Taking	37 A Access	38 Cn Collection	39 Gs Gifting / Sharing	40 Ks Knowledge Share	41 P Points	42 Pr Prizes	43 Le Leaderboards	44 B Badges	
				45 Ve Virtual Economy	46 Lo Lottery	47 Ip Innovation Platform	48 V Voting	49 Dt Development Tools	50 A Anonymity	51 Lt Light Touch	52 An Anarchy

The background features a large purple rectangle in the center. Surrounding this rectangle are various small, colorful geometric shapes, including L-shapes, squares, and rectangles in shades of pink, orange, blue, yellow, green, and brown, scattered across the white background.

gamification in instruction uses the motivational power of games but in the context of education to enhance and diversify the teaching approach and foster self-driving behavior

The craft of deriving all the fun and addicting elements found in games and applying them to real-world or productive activities.

Yu-Kai Chou
Gamification Pioneer



**Right now
we spend
three billion
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(Jane McGonigal, TED 2010)



**Why do you
(or people)
like to play
games?**



Why Games?

A close-up photograph of several hands holding colorful wooden puzzle pieces. The pieces are in various colors: blue, white, red, and green. The hands are positioned as if they are about to fit the pieces together. The background is blurred, showing more hands and puzzle pieces, suggesting a group activity.

Games have the amazing capability to keep people engaged for a long time and people liked each other better once they have played games together. Through games, not only people become creative and expose their potential, they also able to build long lasting relationships and establish trust between them.

(Chou, 2014; McGonigal, 2011)

The advent of personal computing (1980s) and the internet (1990s) created new opportunities for “play” in the form of video and computer games. Within the last ten years, digital tools and portable devices have enabled gaming to become a mobile and social activity (in which a single game might have thousands of participants from across the globe).



Learning



Playing

crucial component of cognitive
development from birth and
through adulthood



Jean Piaget & Leonard Vygotsky



Play can actually shape and structure the brain (Jambor, 2000)

Not all types of play do this; the function is most apparent in imaginative play characterized by *engagement* and *interest*.

This play includes those fantasies and dramas that children initiate themselves and then choose to pursue and elaborate. It has elements of repetition and is fun. It activates and encourages neural pathways, and because it is often replayed, it promotes memory skills.

Doing my
bit...
being
responsive

1

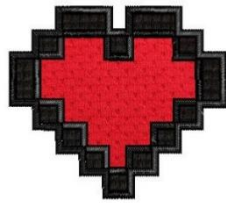
**XploreRAFE+
A gamification
kit for teaching
and learning**

2

**Mini games
project for
FCE3401
Educational
Technology
Course**

XploreRAFE+

An Instructor's Quest to Gamify an Instruction



(... and bringing back to learning



What's in the prototype kit

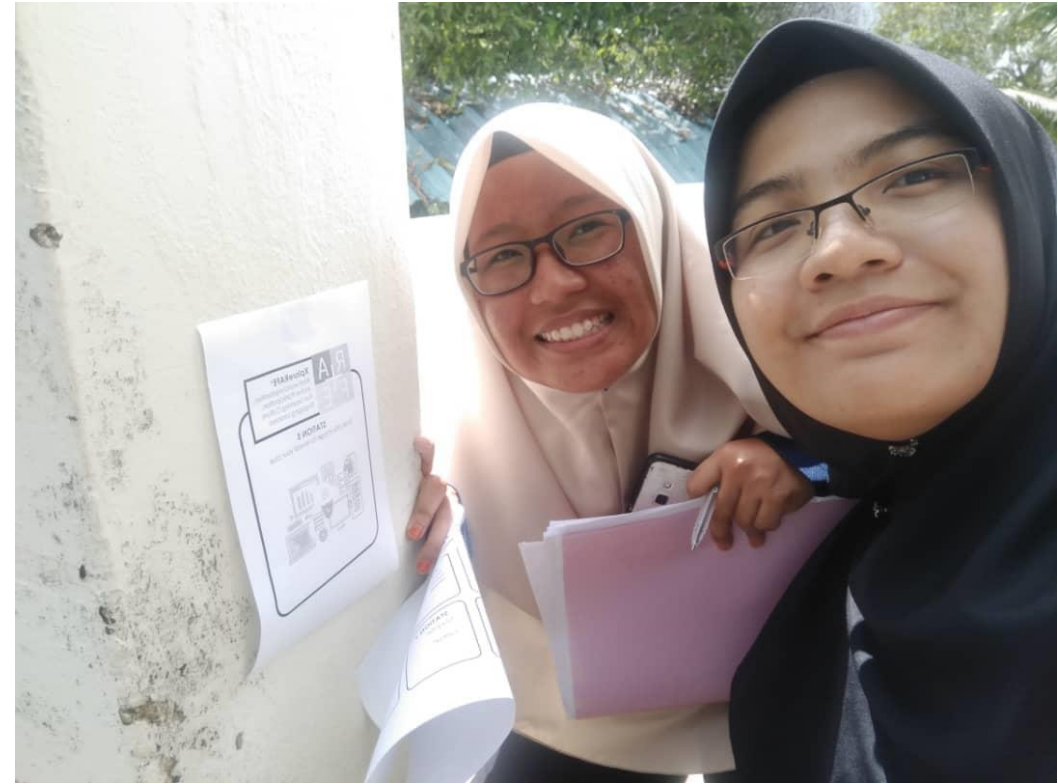
Physical + AR Clues

Challenges

Smartphones + Tablets

Playcards + Manipulatives







AR

Leaderboards

Reflections

technology



**non-technology
elements**



Timer

Map

Point-giving

Answer sheet

reflective design
R2D2
recursive develop

Enhance the
design and
development
of the kit

The diagram consists of five circles arranged in two rows. The top row has three circles: a yellow one on the left, a pink one in the middle, and a dark blue one on the right. The bottom row has two circles: a green one on the left and a purple one on the right. A horizontal bar with a dark grey top half and a light grey bottom half runs behind the circles. Each circle has a thick, multi-colored border that matches its main color. The text inside each circle is in a bold, black, sans-serif font.

**Build team work and
collaborative learning**

**discover +
explore new
methods**

**look up for
more information**

**accountable
for own
learning**

**“healthy
competition”**



We like people better if we have played a game with them; we bond and build trust. And contrary to popular thinking, games are not so much a tool for escapism but rather a way to use our best selves. Gamers are extremely productive and collaborative within the realm of a game.

Jane McGonigal
Game Designer & Author



active learning.

Self-reflection and critics/comments from peers and experts

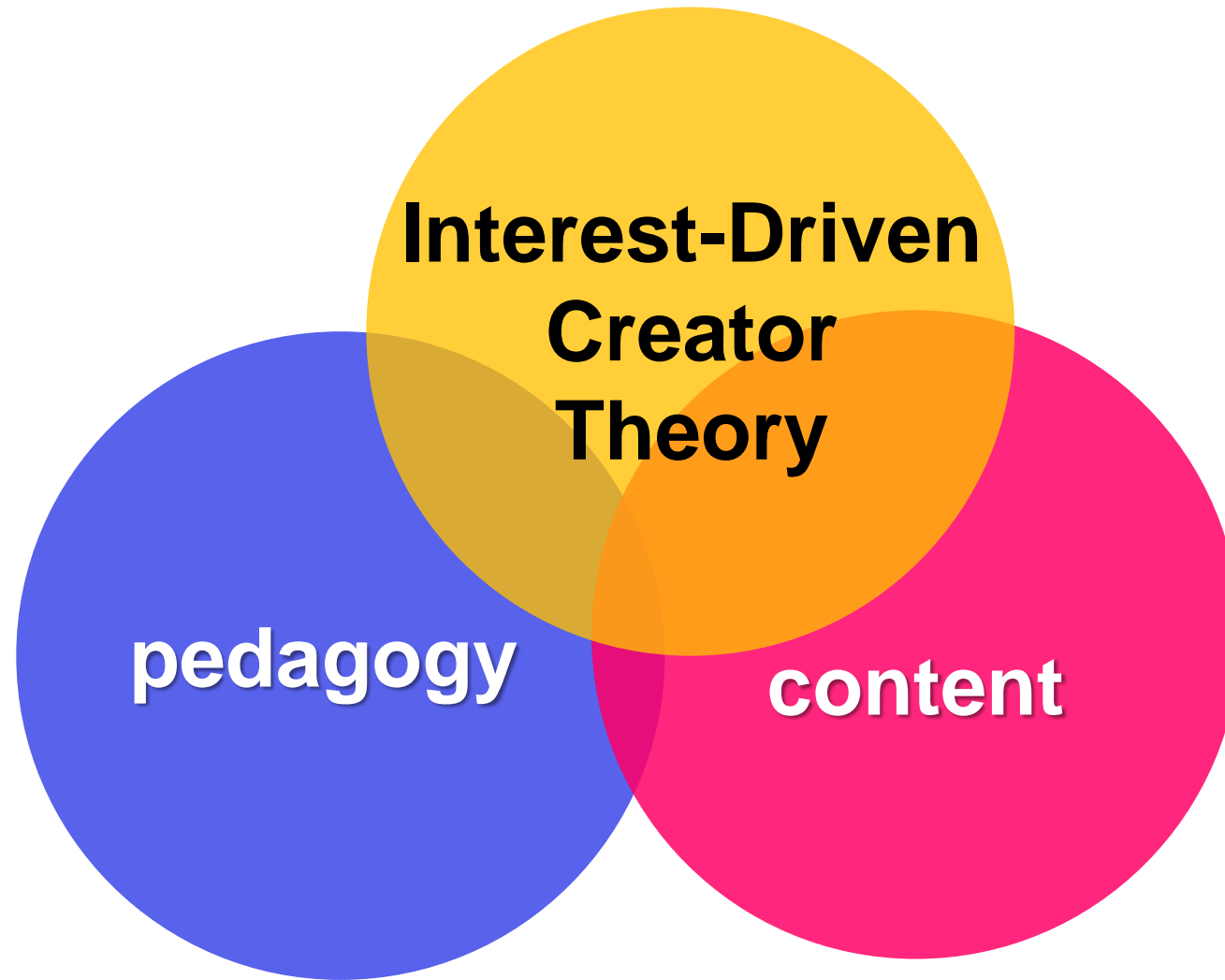
**How do I make it meaningful
and “active learning”?**

Digitalizing the game

..so that people with little to no “know-how” skills can benefit and employ gamification



Overlaying Theory over Pedagogy and Content



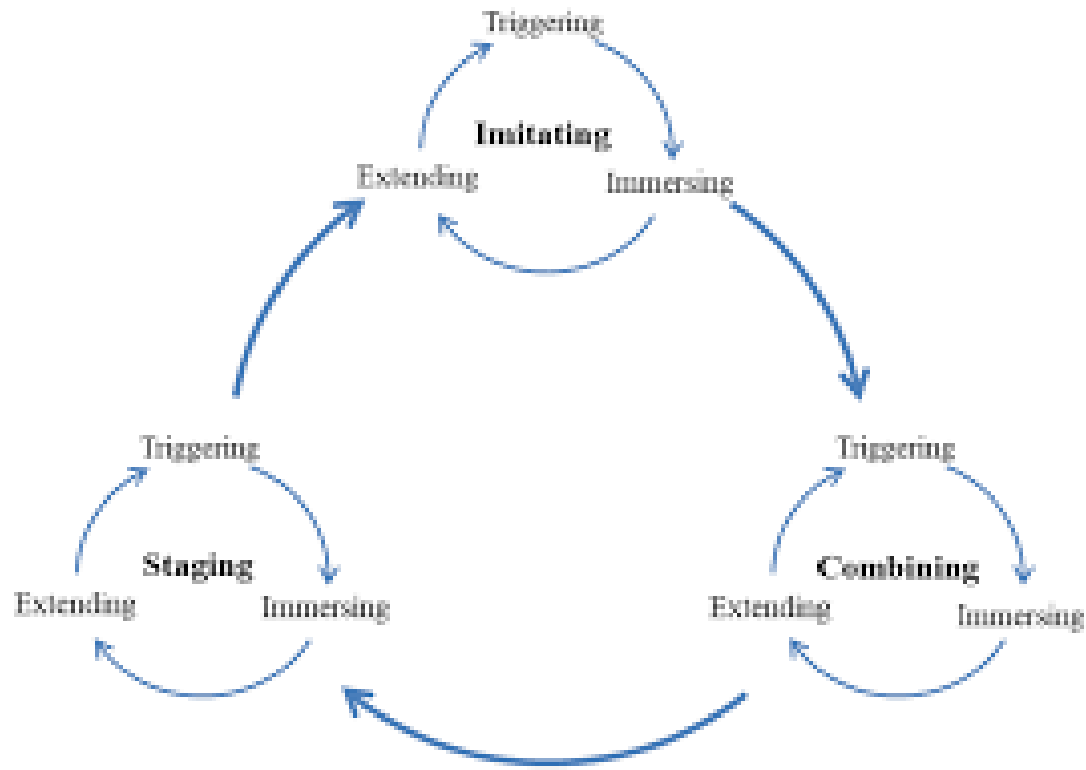
Interest-Driven Creator Theory

when students learn with interest,
learning is enjoyable and effective
... creation makes learning
productive and full of achievement

Tak-Wai Chan
IDC-Founder

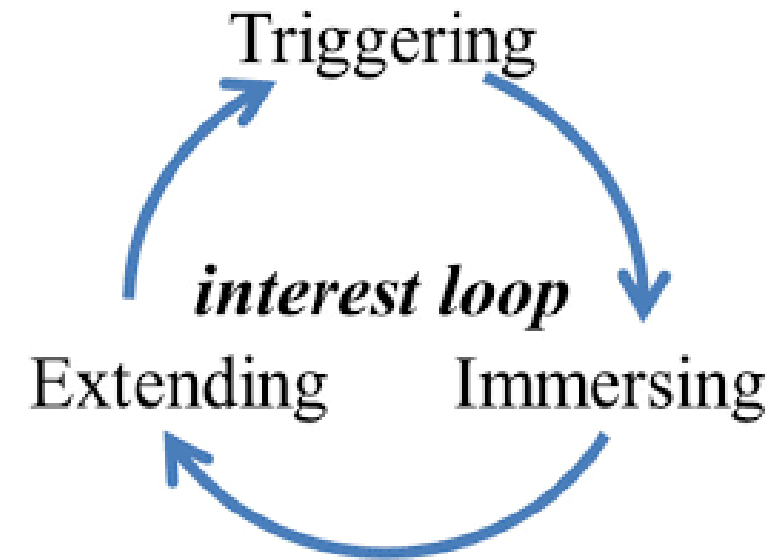


Design learning so that it will
become the subject of
enthusiasm so that learning
can be sustained



(Chan, et al., 2018)

The Interest Loop




The Interest Loop

Triggering – characterized by curiosity (denotes realization of information gap) – exposing to a sequence of events with anticipated but unknown outcome/violated expectations – motivates to search for more information

Immersing – characterized by flow (fully immersed in learning) – students have clear goals, maintain good balance between the perceived challenge level and their own self-perceived skill level – enjoys the feeling of energized focus, a suspension of time, loss of self consciousness, sense of connection to the inner self and the others

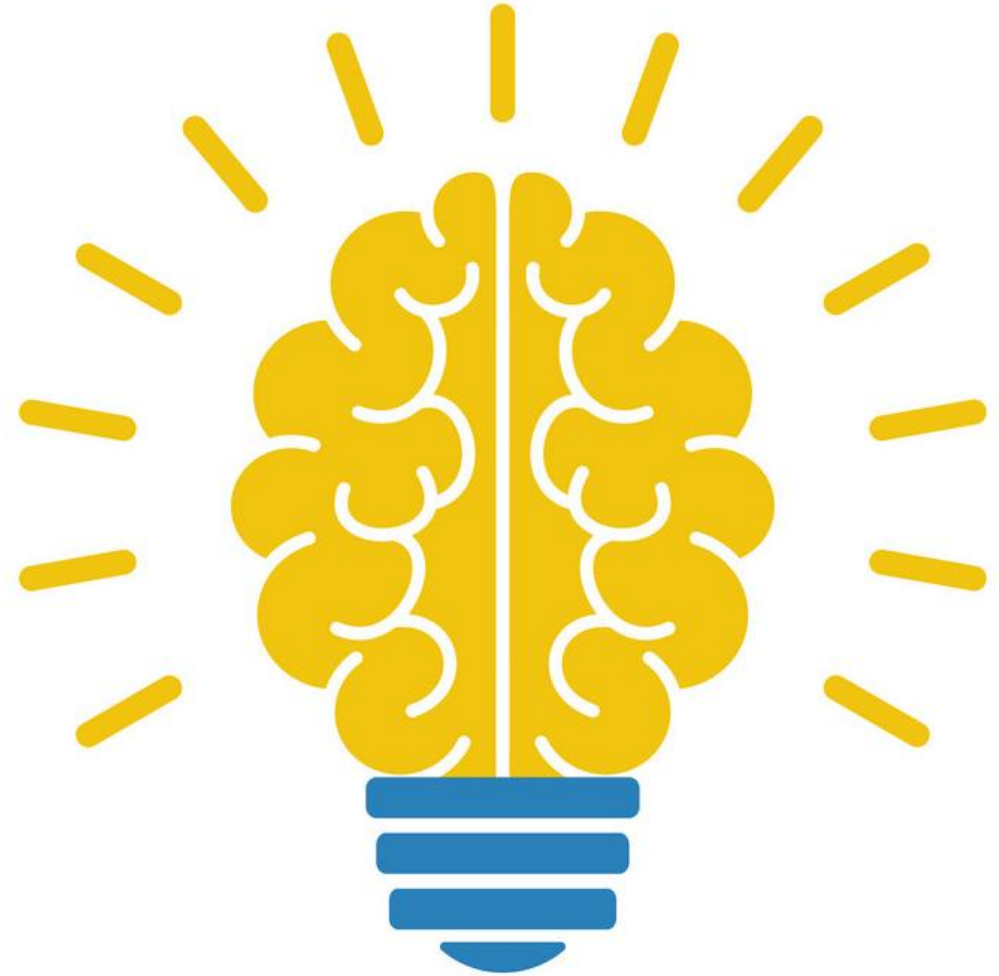
Extending interest – characterized by meaningfulness (relatedness and integration of newly encountered knowledge with prior knowledge, relevant to authentic daily lives) – seek to make sense of what they encounter – incorporate what they have learned and associate with real life situation



Mini games project
with preservice
teachers

**meaningful learning is not
easily achieved with
traditional lecture methods**

**traditional methods might not
be able to keep up learners
with the ripple effects of the
changes IR4.0 has brought**

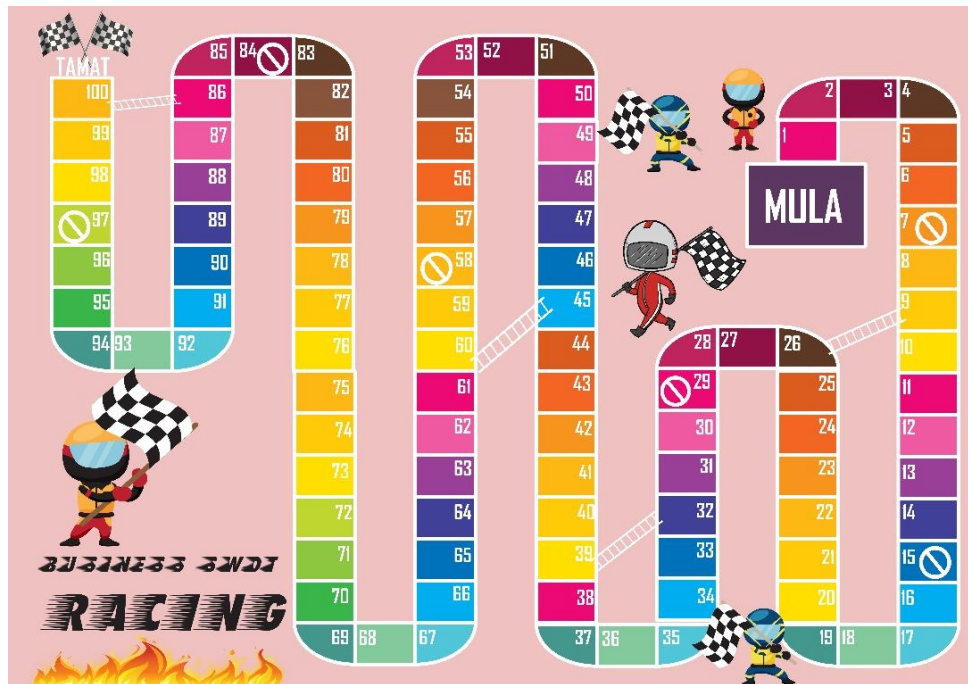


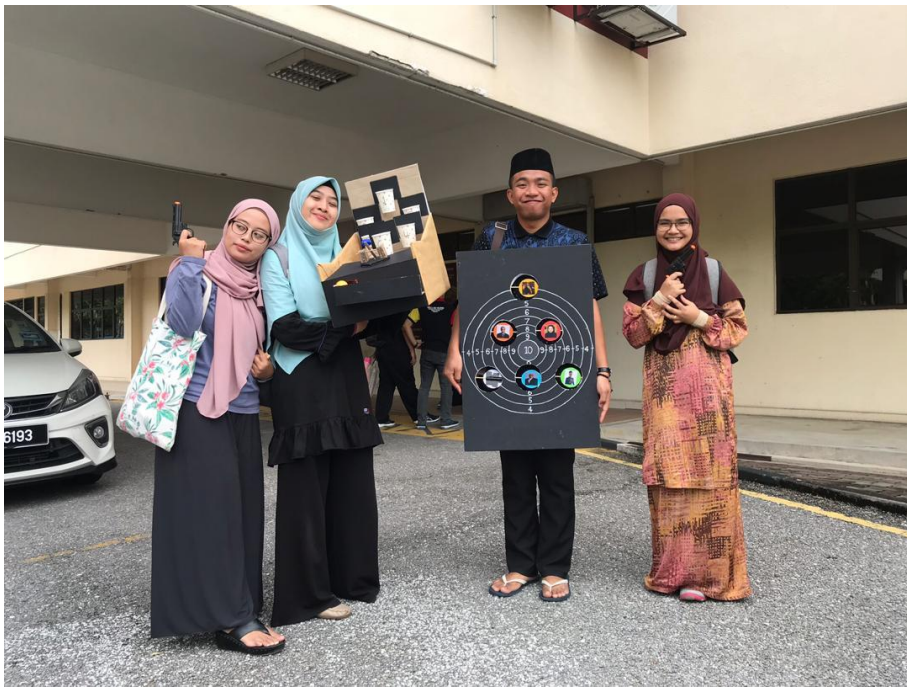


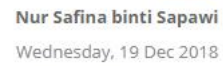
In today's digital generation, gamification has become a popular tactic to **encourage specific behaviours**, and **increase motivation and engagement** ... helping educators find the balance between achieving their objectives and catering to evolving student needs.

Huang & Soman (2013)









We suppose to show to Dr the draft of our game and get approval to continue with the game.
We're quite nervous actually.. but luckily, our draft are accepted!









**Points to
ponder**



Gamification is not a series of techniques but as a pedagogical discourse rooted in game design.

This alternative approach acknowledges the heritage of the discipline and particularly the symbiosis of learning and enjoyment

Tulloch (2014)



Gamification is independent of knowledge or skills.

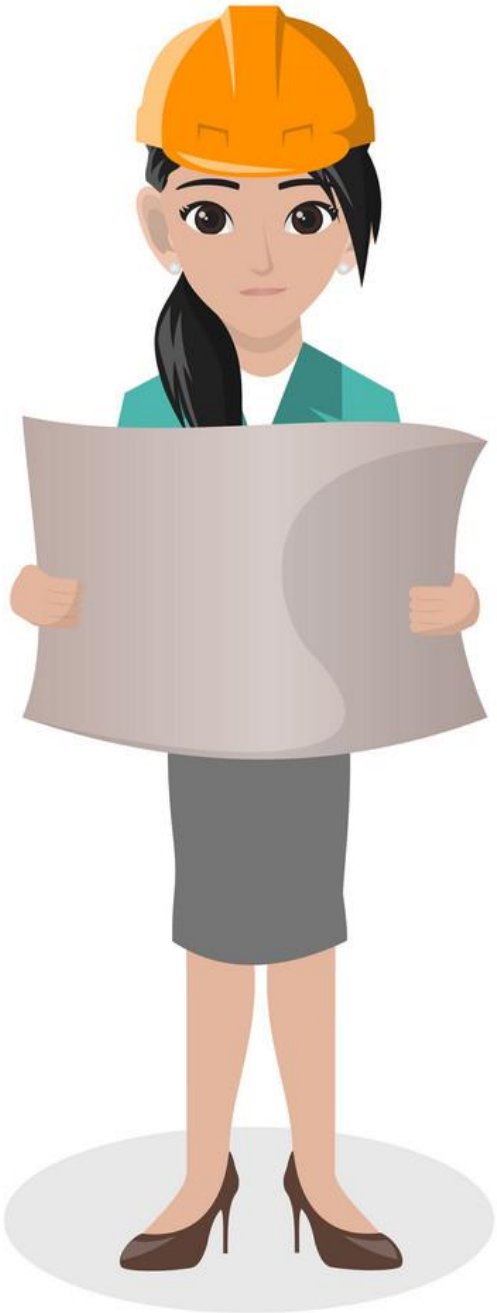
It directly affects engagement and motivation and it indirectly leads to acquiring more knowledge and skills.

Gamification encourages students to perform an action; for example, motivating students to practice computer programming will increase their skill and motivating students to memorize consistently can increase their knowledge.

The craft of deriving all the **fun and addicting** elements found in games and applying them to real-world or productive activities.

Yu-Kai Chou, 2014
Gamification Pioneer





Chou (2014) has warned that applying game mechanics like points, badges, and leaderboards **will not automatically** make the product or experience fun and engaging. He added that the **overlying design components like “how,” “when” and “why”** these game mechanics appear is more important than merely adopting them.

It is not merely about fun and addiction.

It is how you thoughtfully **curate** specific game mechanics to **reach the learning outcome**, or help students **overcome a learning obstacle**.

CONCLUDING REMARKS

Clearly, teaching endeavours have changed exponentially in the past decade – **learners are required to have more autonomy over their learning**, thus pedagogical paradigm ensues. Traditional modes of instruction are replaced by contemporary pedagogies, raising challenges to educators.

Innovations in education kicked started and several approaches are introduced to promote meaningful learning—most of which emphasized on student-centred learning, cognitive load, retention rate, mixed-ability, student diversity, and the like – while at the same time **they should not compromise the quality of knowledge** imparted to the students.



How can we judge the worth of society? If the children and youth of a nation are afforded the opportunity to develop their capacities to the fullest, if they are given the knowledge to understand the world and the wisdom to change it, then the prospects for the future are bright.

—Urie Bronfenbrenner (1970)

**Are you
ready to gamify
your instruction?**



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