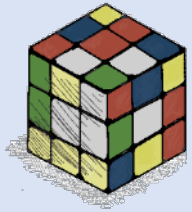
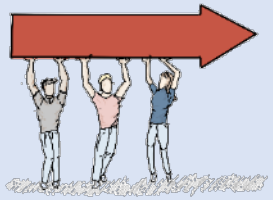
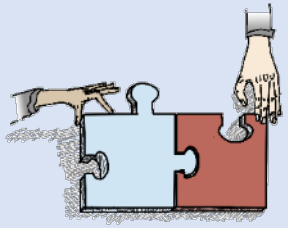
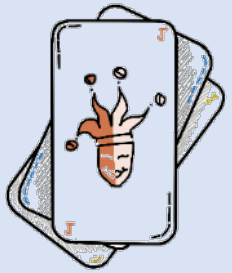





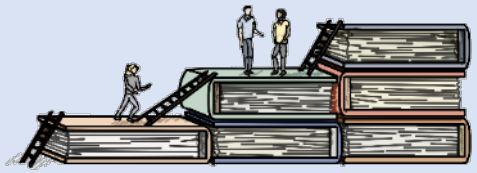



GAMES FOR INNOVATION

Session by Sune Gudiksen & Henning Breuer at ISPIM conference 2024






Values-Based & Sustainable Innovation

Co-funded by the Erasmus+ Programme of the European Union

Project ID: 101056410;
Project Duration:
July 2022 - June 2025

Project ID: 600947-EPP-1-2018-1-DE-EPPKA2-KA
Project Duration:
January 2019 - December 2021

Agenda workshop

1. Introduction – foundation from three sources
2. Introduction to gamification design patterns through cards
3. Exercise I: Diving into patterns through challenge
4. Exercise 2: Demonstration of SHIFT Barrier game
5. Dimensions and Directions for the future

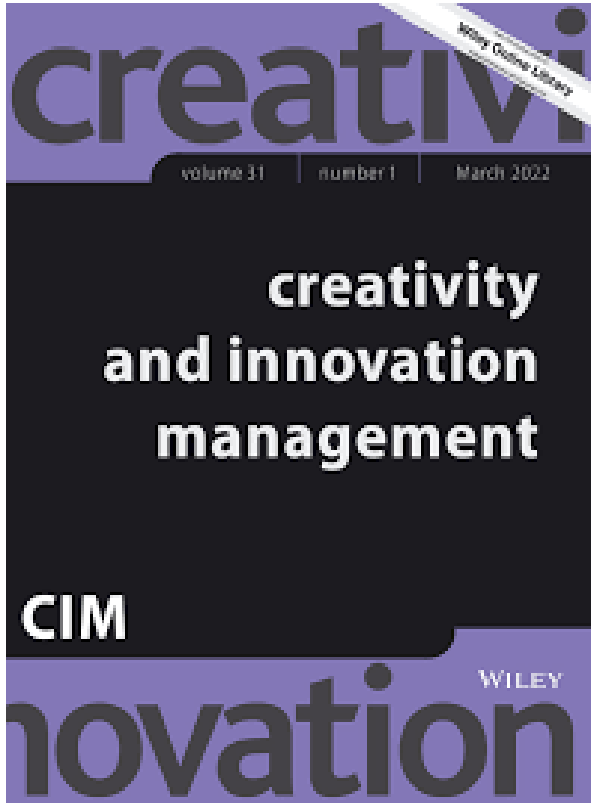
1. Introduction

Gamification, games and play as drivers of innovation and entrepreneurship

1. Introduction – based on three recent practice-based sources

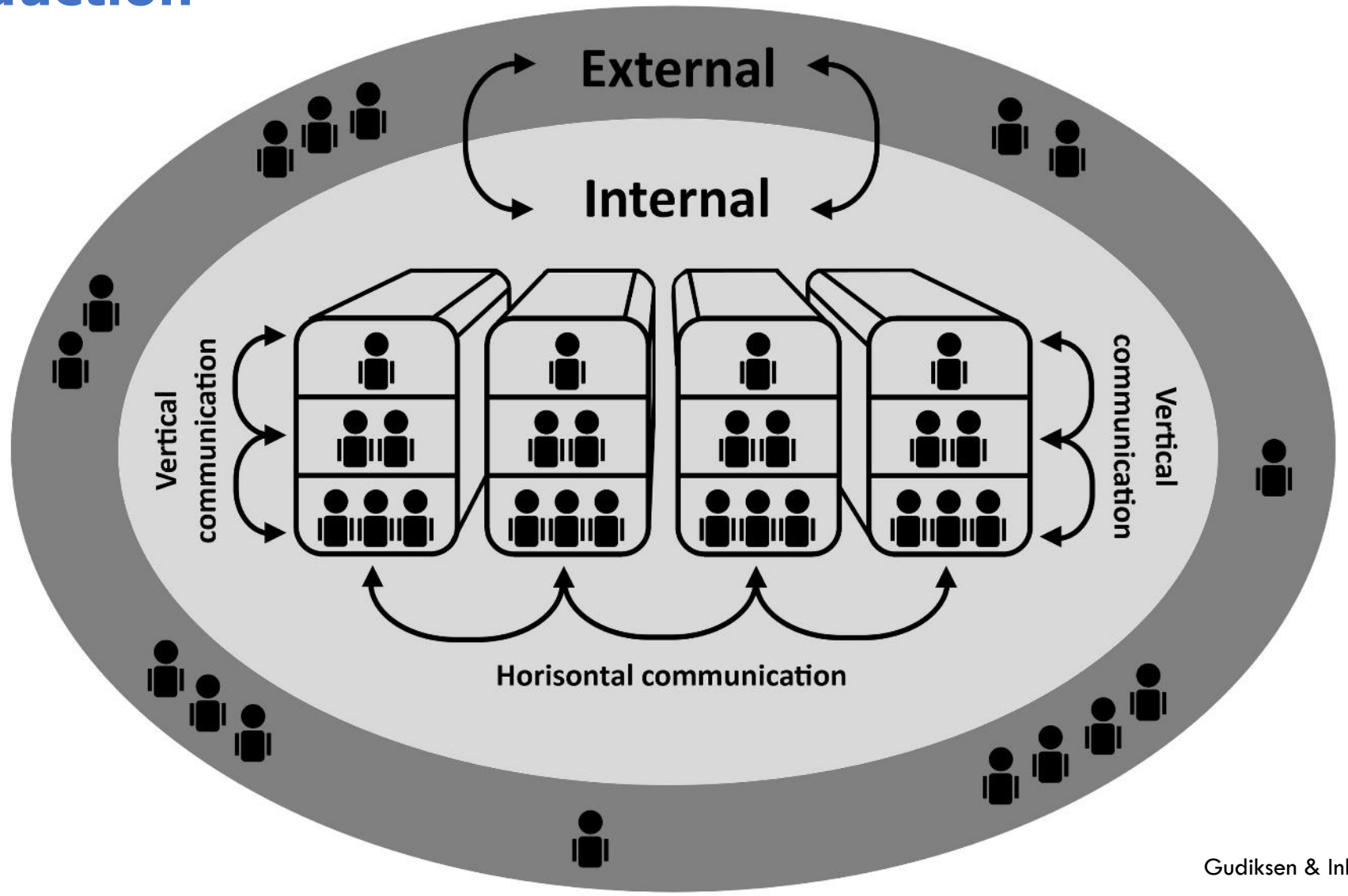
2018 book

2022 book



2024 special issue (upcoming)

1. Introduction

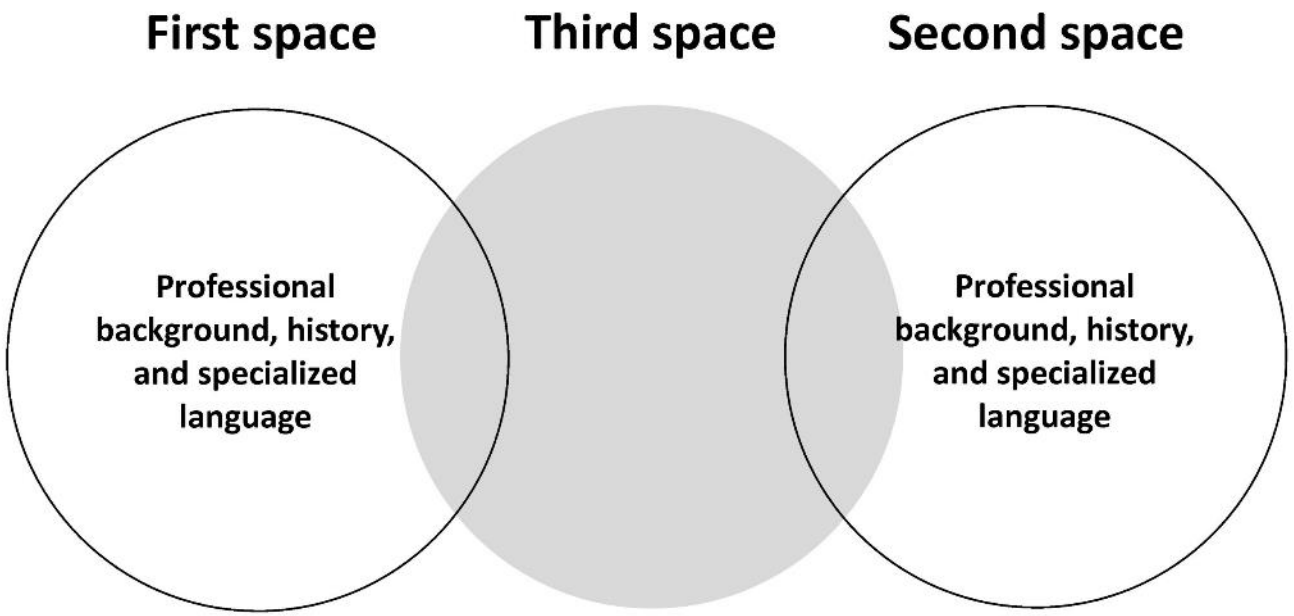


Gudiksen & Inlove 2018

/// Gudiksen, S. & Inlove, J. (2018). Gamification for business. Why innovators and changemakers use games to break down silos, drive engagement and build trust

1. Introduction

Creating third spaces



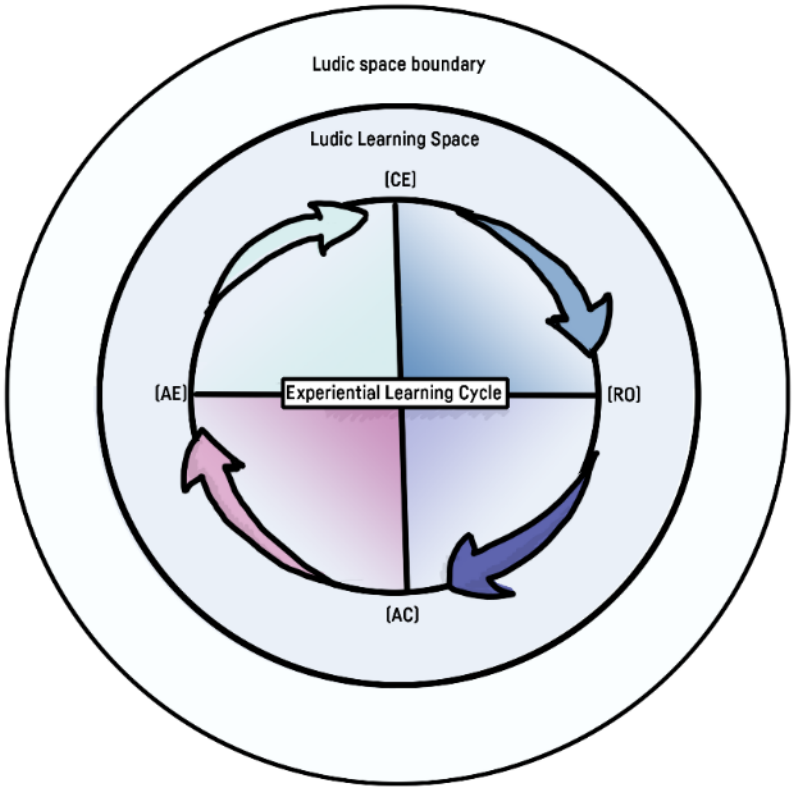
Gudiksen & Inlove 2018

/// Gudiksen, S. & Inlove, J. (2018). Gamification for business. Why innovators and changemakers use games to break down silos, drive engagement and build trust

1. Introduction

Definitions: The ludic space and experiential learning cycle

- The **ludic space boundary** is defined by the rules of the game. For example, the rules of turn-taking set a basic framework for interaction. Deep learning then takes place in the **ludic learning space** at the centre. It may involve tensions between competitiveness and fair play, self-absorption and empathy, experiencing an authentic self and one that is imagined.
- The ludic learning space is made up of **play elements**: feeling free to play, tolerating uncertainty, welcoming foolishness, stepping out of real life, balancing competition (agon) and structured interaction (ludus) with free play (paidia), community and communication, and then replicating the ludic space through recursive practice.
- **A learning spiral**: **Concrete experience** (CE) is enriched by **reflective observation** (RO) giving meaning to the experience. Such reflection can be guided by teaching/coaching inputs (e.g. questions, probes, illumination) in order to build or reinforce concepts (**active conceptualisation** / AC), which are then evaluated through **active experimentation** (AE) further deeping learning and enabling transfer.



/// Kolb, A.Y. and Kolb, D.A. (2010). Learning to play, playing to learn: A case study of a ludic learning space. Journal of Organisational Change Management, 23 (1), 26-50.

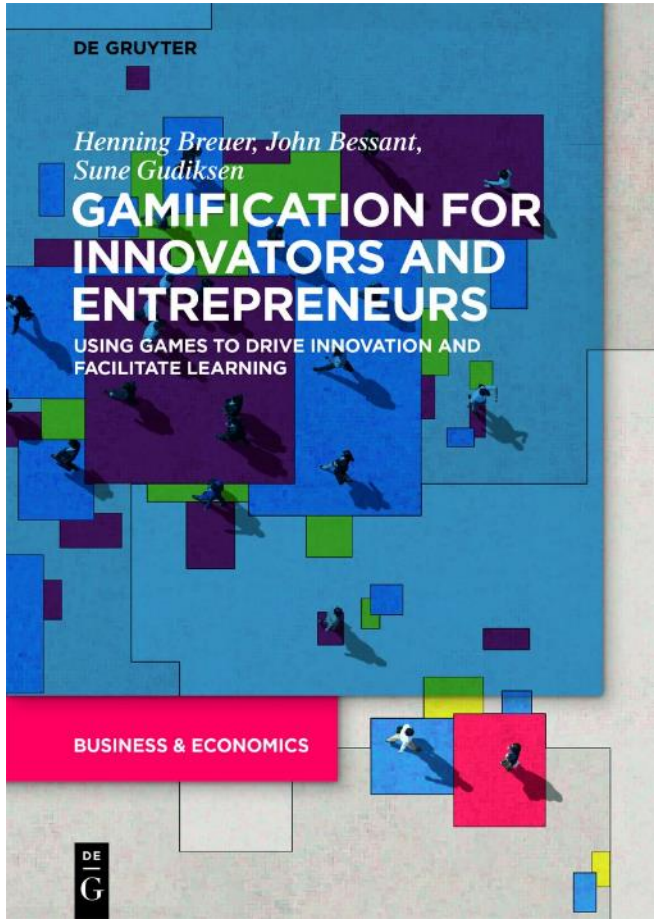
1. Introduction

What makes gamification a superpower?

Safe space for experimentation in small groups – allowing to “fail early and often” in order to learn

Unconventional forms of (inclusive) collaboration: Replace rules of social convention with rules of the game

Design to solve great challenges: Reframe and combine **proven methods**, and iteratively improve



/// Breuer, H., Bessant, J. & Gudiksen, S. (2022). Gamification for Innovators and Entrepreneurs. Using games to drive innovation and facilitate learning. London: deGruyter

1. Introduction

Safe Space: In how far do games provide a safe space for experimentation?

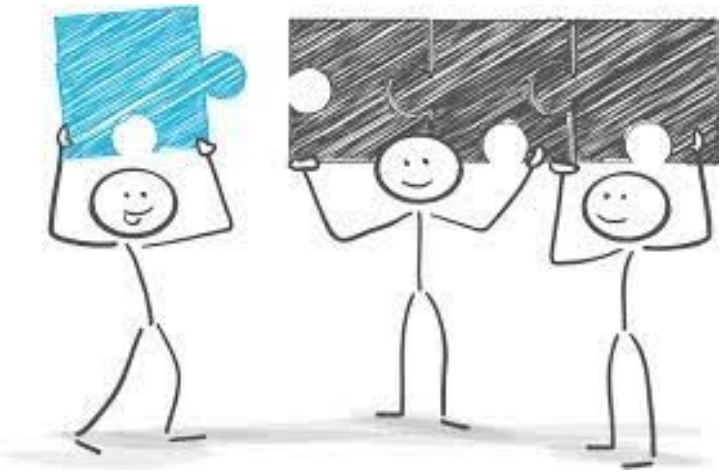
- A ludic space or an artificially constructed environment based on **rules, goals, artefacts and boundaries provide a safe space** for experimentation and play
- While **fun** is an intrinsic feature of playing, the attainment of **surprising perspectives and immersive and interactive experiences** through games generates **value-add** for business.
- **Consequences of failure are limited** to the boundaries of the game but players can easily translate **newly acquired ideas, knowledge, feedback, or perspectives** into the 'real' world.

Image from: www.pinterest.de/pin/194358540148683307/

1. Introduction

Innovative Social Collaboration: How are games promoting collaboration?

- Game rules provide new and **unconventional forms of interaction** that can **cut across formal hierarchies** and structures or unwritten organizational norms.
- **Role-play** facilitates variation in roles and positions **to acquire empathy** with stakeholders, **break established thought patterns** and **discover novel perspectives** and insights
- Playing establishes **mutual trust** and social bonds that facilitate subsequent **cooperation** among participants.
- Gamification in education supports **learning** architectures that deviate from the standards of frontal teaching and group project work.



 /// Breuer, H., Bessant, J. & Gudiksen, S. (2022). Gamification for Innovator and Entrepreneurs. Using games to drive innovation and facilitate learning. London: deGruyter. Chapter 1.

1. Introduction

Tackling Grand Challenges: How to use games for tackling grand challenges?

- Games can **couple in-game challenges with innovation challenges** and thus prompt new ideas, knowledge or solutions
- They provide “superpowers” in that they **integrate, repurpose and combine already powerful methods** from different disciplines (e.g. futures studies, user experience, agile management, design thinking or business design) into new, action-oriented and engaging frameworks.
- Complex challenges cannot be solved by isolated initiatives, individual actors or a within a single session. For this reason, instead of providing a single solution, many games aim to **yield competing directions to discuss and reflect on**.
- Games create **endless variation**, generating unique scenarios and consequences for anticipating alternative future developments.

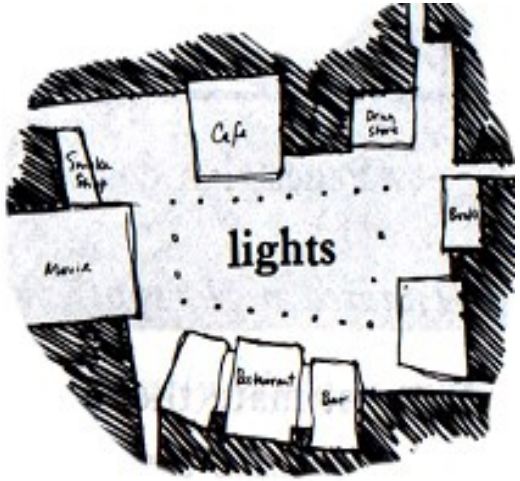
2. A Pattern Approach

Gamification Design Patterns to address innovation challenges

2. Introduction to design patterns

What is the design pattern approach?

- “Each pattern describes a problem which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice” (Alexander et al., 1977, p. X).
- Patterns represent proven problem-solution combinations that encapsulate knowledge in the form of general ‘rules of thumb’. They serve as design tools that are practically useful.
- Application fields include architecture, software design, interaction design, business modelling, and the design of gamified formats



“Night life”

/// Prof. Dr. Henning Breuer Picture source: http://www.patternlanguage.com/apl/aplsample/aplsample.htm /// Lüdeke-Freund, F.; Breuer, H. & Massa, L. (2022): Sustainable Business Model Design – 45 Patterns. Berlin. https://www.sustainablebusiness.design/ Alexander, C. (1977). A pattern language: towns, buildings, construction. Oxford university press.

2. Introduction to design patterns

We can distinguish four levels of challenges and patterns to address them

I. **Overarching domains of challenges** from the literature: 10 domains associated to the operational, strategic and normative innovation management.

II. **A typical innovation or entrepreneurship challenge** to be addressed through gamification that the pattern aims to solve. This includes **challenges** identified in the needs analysis with industrial partners within the GAMIFY project.

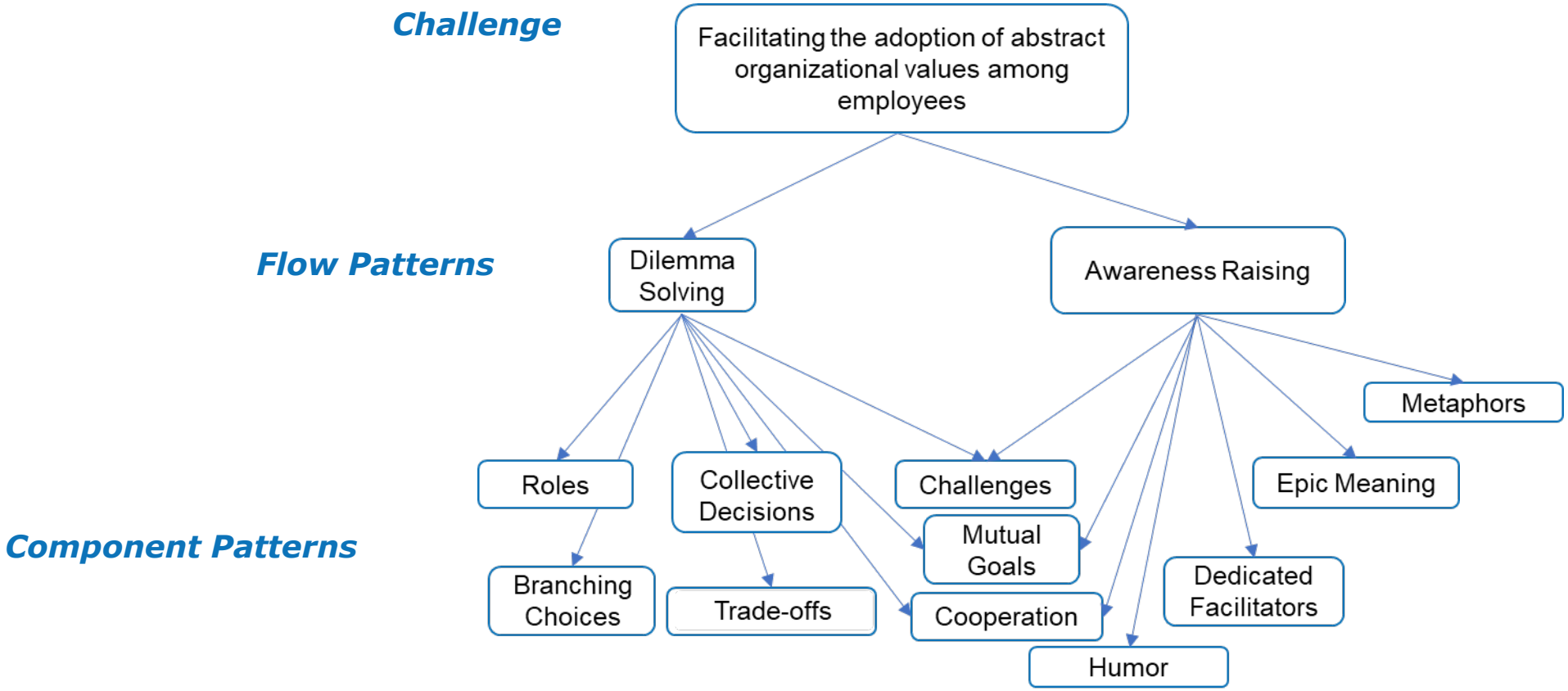
III. **Flow pattern**: A Reusable flow of interactions between participants and artefacts to address an innovation or entrepreneurial challenge. Flow patterns combine several component patterns through a defined flow of interactions to address a specific innovation challenge**.**

IV. **Component patterns:** Reusable, stand-alone game elements that can be aggregated as building blocks in the design of innovation-specific game flows and game-like activities. Related to game elements "a set of building blocks or features shared by games" (Deterding et al., 2011) and game atoms "the smallest possible design element of a game" (Brathwaite & Schreiber, 2009).

/// Prof. Dr. Henning Breuer /// Deterding, S. (2011, May). Situated motivational affordances of game elements: A conceptual model. In Gamification: Using game design elements in non-gaming contexts, a workshop at CHI (Vol. 10, No. 1979742.1979575). // Brathwaite, B., & Schreiber, I. (2009). Challenges for game designers. Nelson Education.

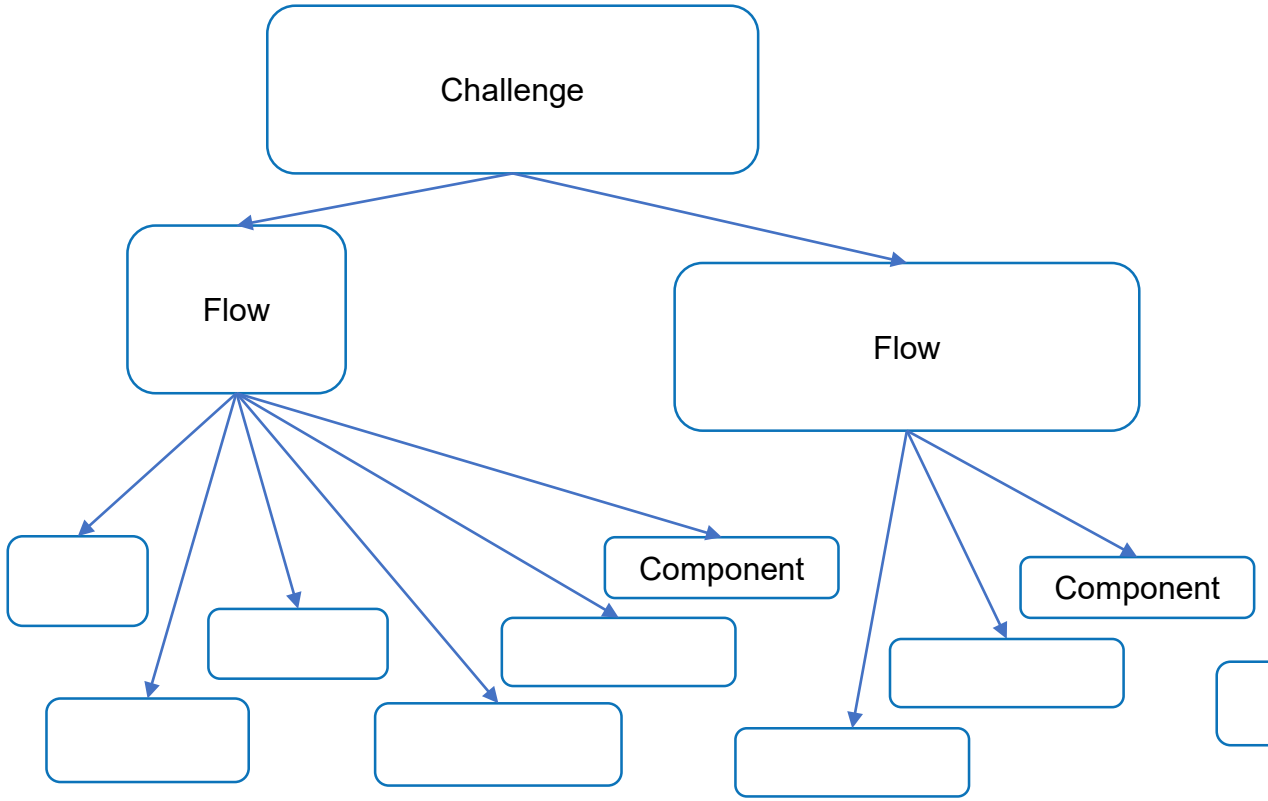
2. Introduction to design patterns

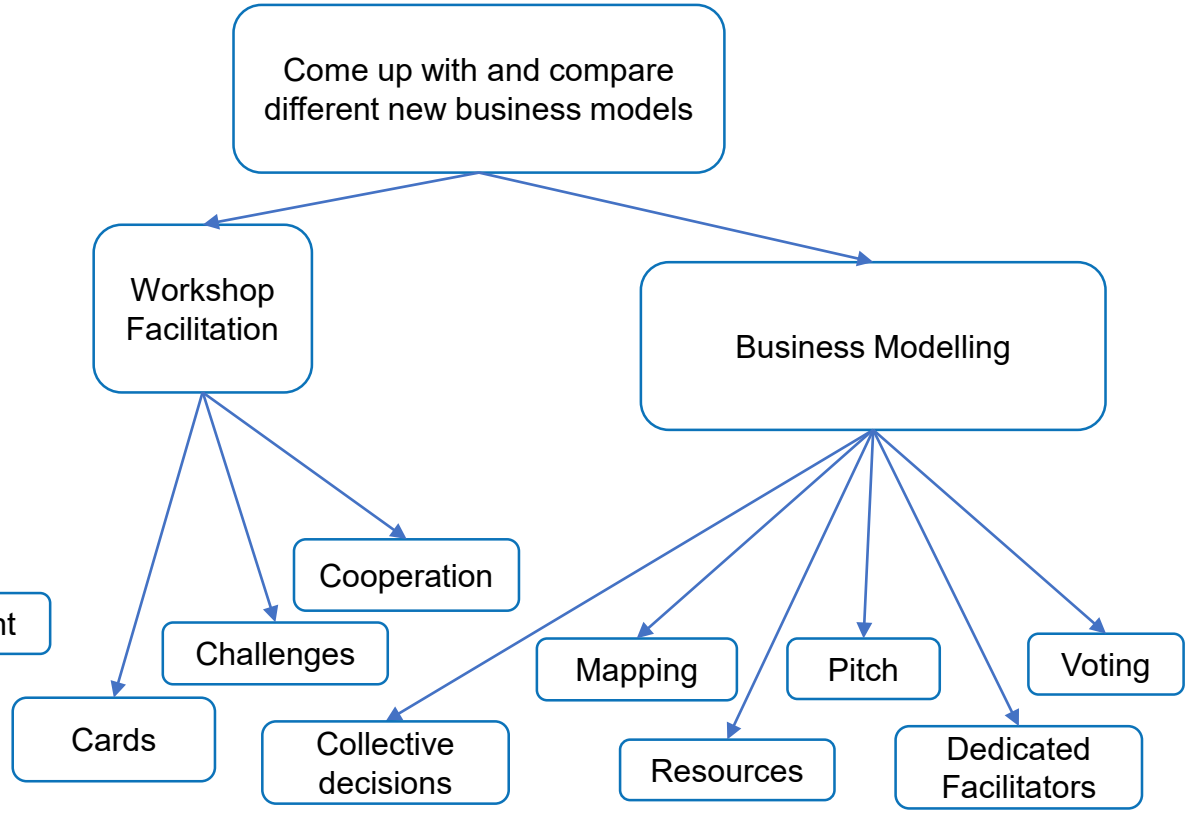
Example of gamification approaches to facilitate deliberation of values



2. Introduction to design patterns

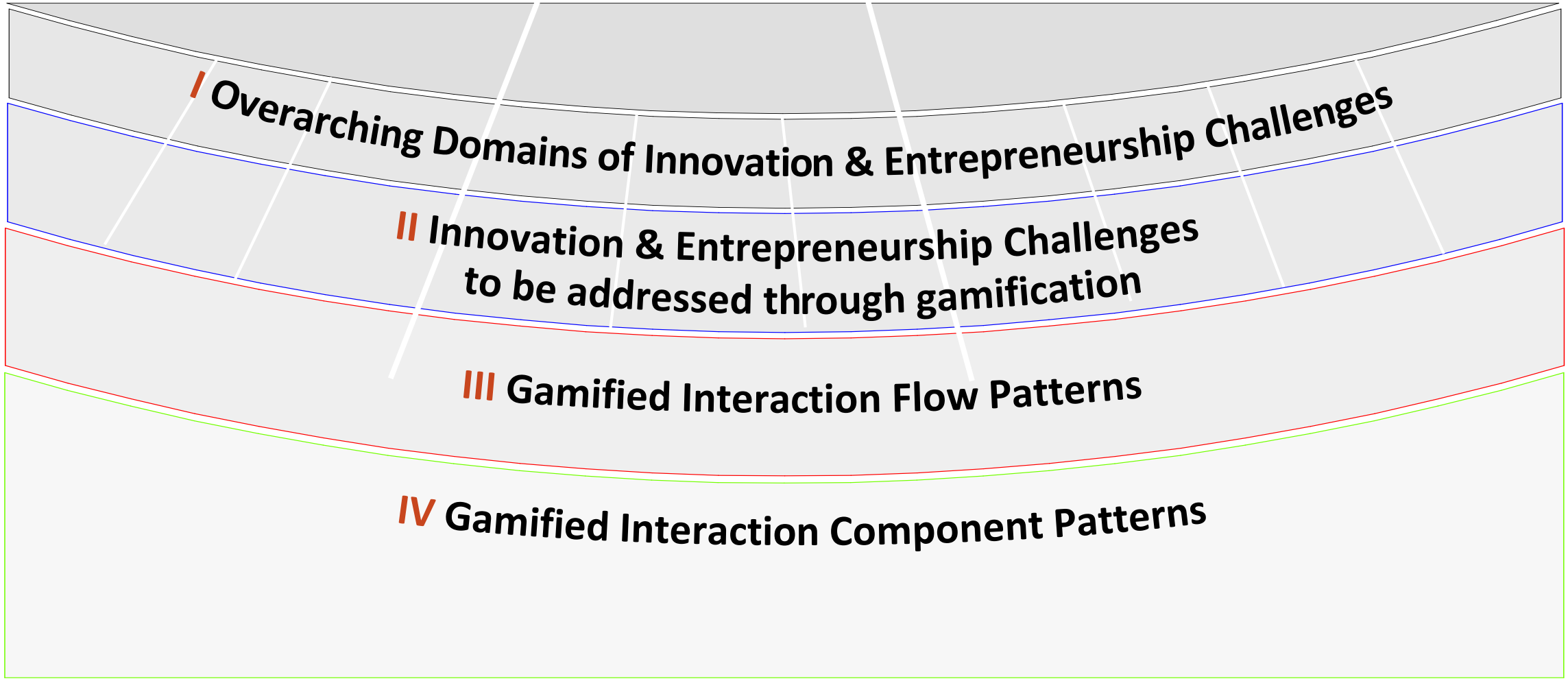
Example of gamification approaches to business model challenges





2. Introduction to design patterns

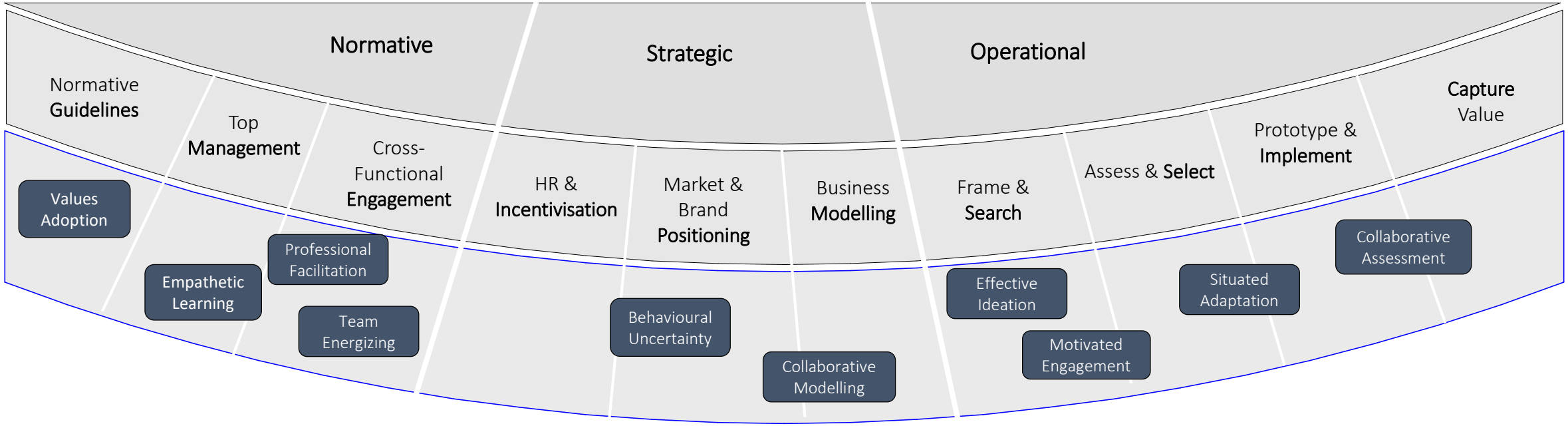
Four levels of the innovation challenges and gamification design patterns



 /// Breuer, H., Bessant, J. & Gudiksen, S. (2022). Gamification for Innovator and Entrepreneurs. Using games to drive innovation and facilitate learning. London: deGruyter

2. Introduction to design patterns

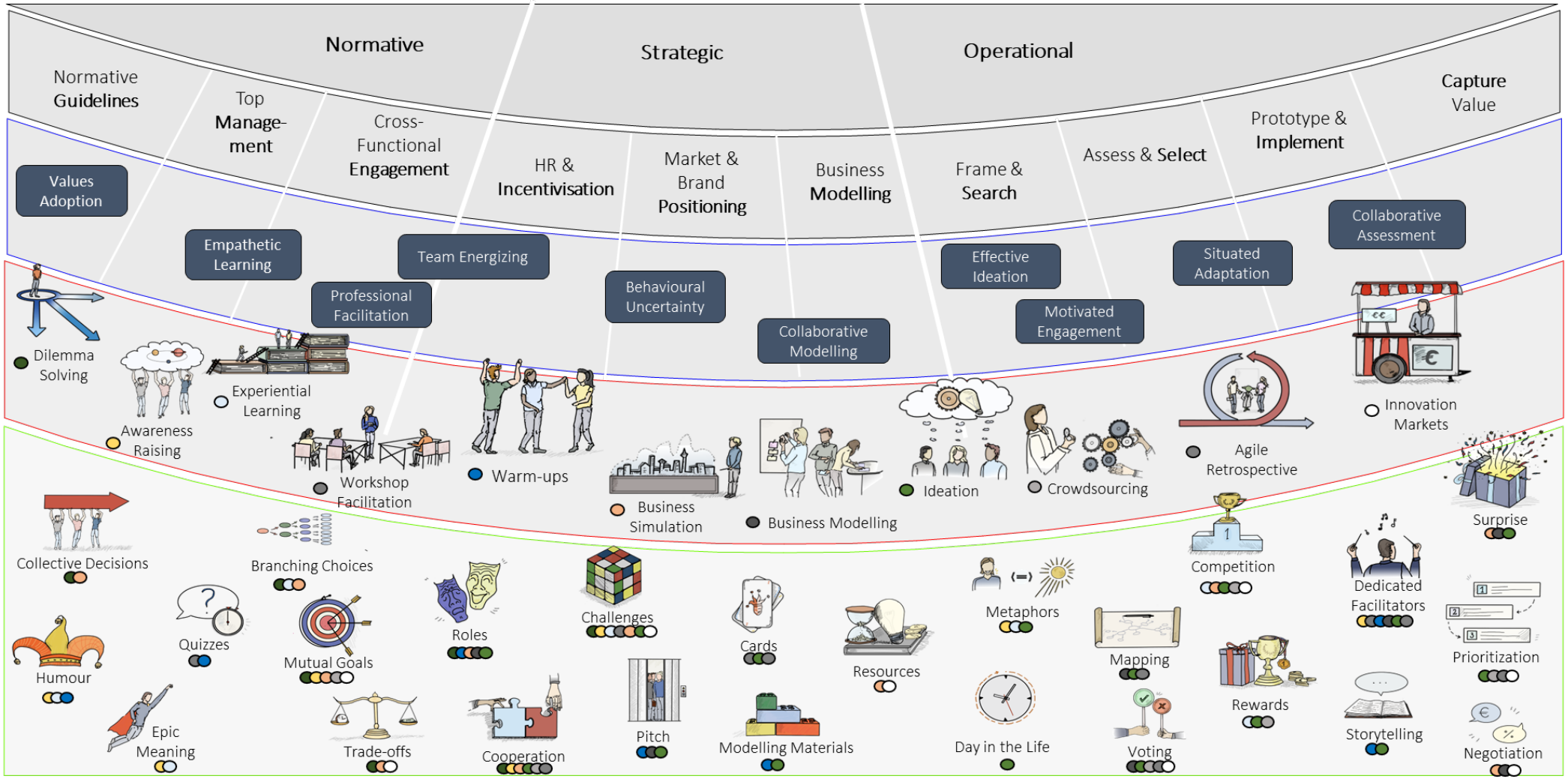
Ten innovation and entrepreneurship challenges to be addressed through gamification mapped onto management dimensions and overarching domains of innovation



 /// Breuer, H., Bessant, J. & Gudiksen, S. (2022). Gamification for Innovator and Entrepreneurs. Using games to drive innovation and facilitate learning. London: deGruyter

2. Introduction to design patterns

Overview of 36 flow and component patterns with associated challenges



 /// Breuer, H., Bessant, J. & Gudiksen, S. (2022). Gamification for Innovator and Entrepreneurs. Using games to drive innovation and facilitate learning. London: deGruyter

GAMiFY

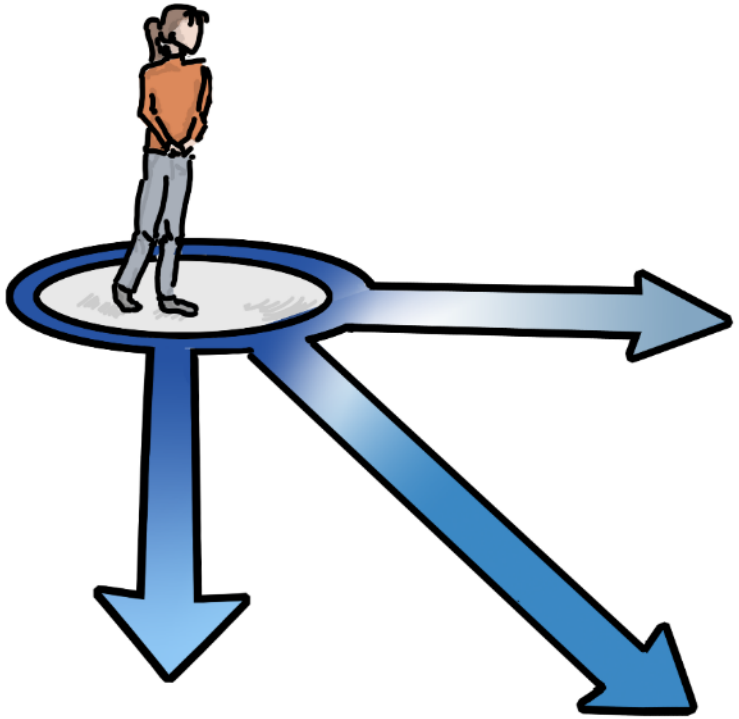
2. Introduction to design patterns

Flow Pattern: Dilemma Solving

Innovation challenge: How can we turn abstract, organisational values into actionable heuristics?

Solution: The *dilemma solving* flow helps employees to understand “abstract” values through specific instantiations and associated actions. It helps to align individual and organizational values and sensitize employees for potentially conflicting values.

Example: ACT, promotes values of being ‘Accountable’, ‘Customer driven’ and ‘Together’ (Gudiksen & Sørensen, 2017). In the game players assess specific dilemmas and give scores on how much they affect the three values. Then they suggest different ways to deal with the given dilemmas.



2. Introduction to design patterns

Component Pattern: Roles

Innovation challenge: How can we facilitate empathy and taking on different viewpoints?

Solution: *Role* playing participants assume the goals and behaviors of fictional agents, enacting their goals and behaviors in a playful manner, and acquiring a deeper understanding of their emotions and motivations. In addition, *roles* can allow practicing certain desired behaviors in a risk-free environment.

Example: The Innovation Diamond Learning Game enables the internalization of behaviors associated with four typical leadership roles (gardener, jester, conceptualizer and challenger). In the game players gain hands on experience with the roles and learn how they offer differing approaches for advancing innovation in its early stages.

6. Design process, canvas and materials

The GAMIFY Game Development Blueprint

Step 1 – Understanding

See challenge in context

- Stakeholder interviews
- Ethnographic observations
- Contextual inquiry
- Crowdsourcing challenges from employees
- Desk research

Step 2 – Briefing

Brief through Canvases

- Challenge / HMW
- Stakeholders / Participants
- Purpose
- Methodology
- Media type and flow
- Components

Step 3 - Concepting

Search for core metaphor/story

- Build main story, narrative, metaphor that frames conversations

Step 4 – Sketching

Build skeleton

- Refine the flow and activities
- Add, take out or modify design patterns and elements to support the overall storyline and the core flows of the format

Step 5 – Prototyping

Evaluate and refine iteratively

- Evaluation, e.g. using survey, observation guides
- Iterative prototyping and testing

/// Prof. Dr. Henning Breuer // Breuer, H. & Ivanov, K. (2021). Design patterns to teach and learn about gamification for innovation. ISPIM Innovation Conference – Innovating Our Common Future. 20-23 June 2021.

6. Design process, canvas and materials

Revealing the GAMIFY Blueprint Canvas:
What should be considered when designing a new game or game-like format?

1. Challenge / HMW:

Specify the innovation or entrepreneurial challenge or problem you want to tackle through gamification or games (and translate it into a how-might-we question).

2. Stakeholders / Participants

Identify the stakeholders and specify the participants or players, their background and a minimum and maximum number. Define boundary conditions for their engagement.

3. Purpose

Define the purpose of the gamified intervention or the intent of the game, defining which aspect of the problem / challenge you intend to focus on. Consider criteria to end the game or intervention.

4. Methodology

Describe the basic methodology, how the game should work,
i.e. how learning or change should take place through the course of actions.
Consider, for instance, if a moderator is required or if participants interact in a self-directed manner. Also consider online and offline, one-time or longitudinal format, micro vs full-size, loose vs tight focus, individual vs group, contextual boundaries

5. Game type and flow

Generate ideas about different media and types (genre) of games that might suit the participants and the purpose (e.g. online or offline, board game, card game, construction game, role-playing game), and which basic flows might be applied. Make short list with pros and cons of each short-listed type and format to decide about game method, media and type.

6. Components

Generate ideas about different components and pieces of content (e.g. Challenges, Competition, Mutual Goals, Resources, Rewards, Trade-offs). Prioritize the ones you consider most suitable and experiment with alternative combinations of those (usually involving different individuals or small groups each developing one composition to compare them with one another).

/// Prof. Dr. Henning Breuer // Breuer, H. & Ivanov, K. (2021). Design patterns to teach and learn about gamification for innovation. ISPIM Innovation Conference – Innovating Our Common Future. 20-23 June 2021.

3. Exercises I

Familiarize with selected Gamification Design Patterns

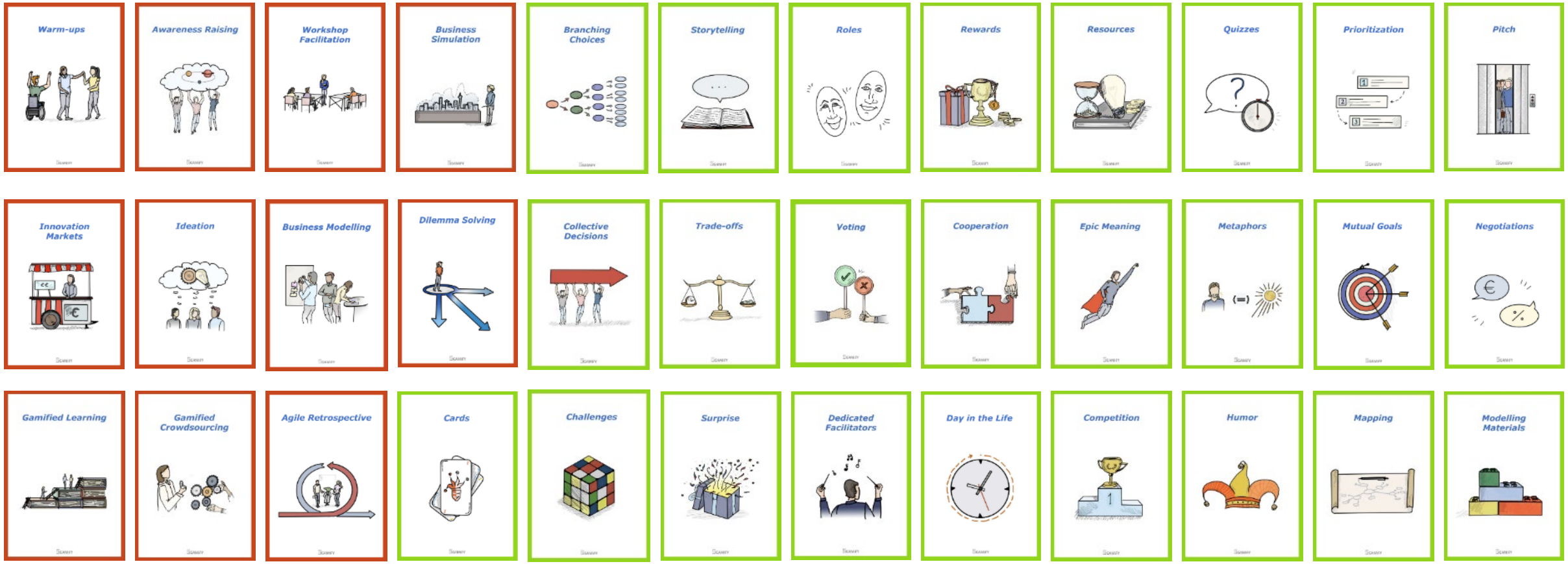
Exercise I: Select suitable patterns to address an innovation challenge

How might we overcome typical organizational barriers in innovation processes after ideation?

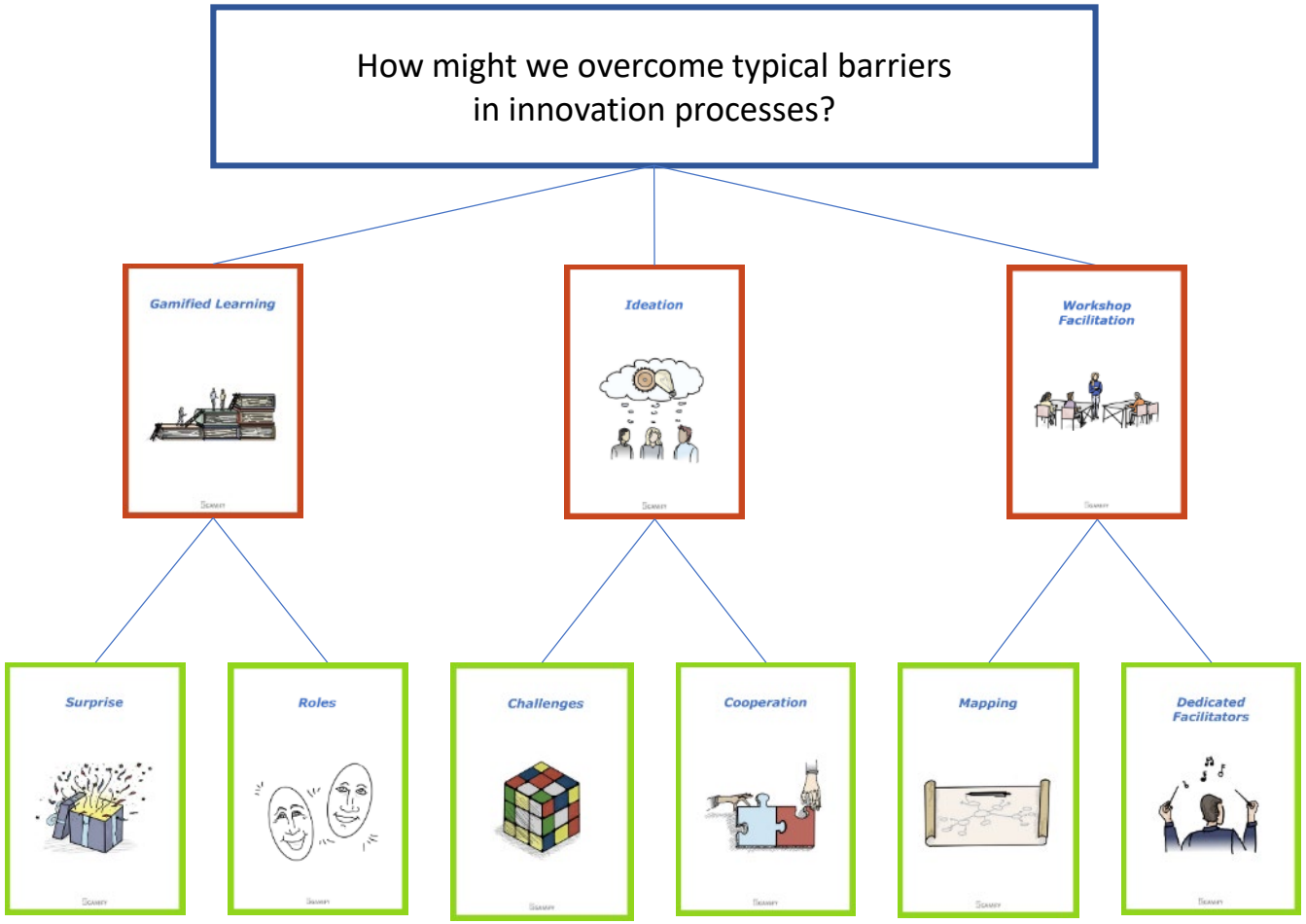
Participants:

- *Please select one or two cards (from a pre-selection)*
- *Think how the pattern can be used to create an innovation game addressing this challenge*
- *Present and discuss your ideas*

Exercise I: Select suitable patterns to address an innovation challenge



Example: The SHIFT Game (reconstructed with patterns)

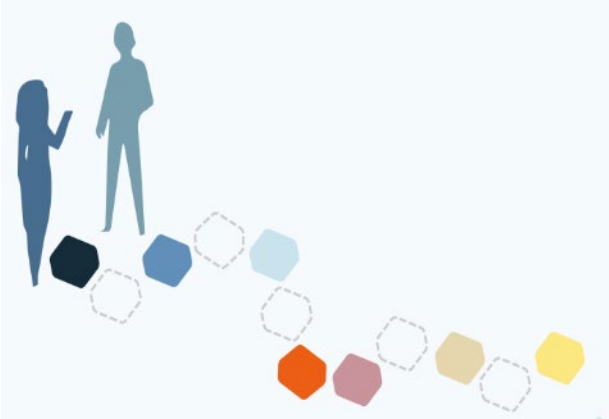


4. Exercise II

Exercise 2: Playing Shift – overcoming innovation barriers

[Online resources (game slides, facilitator's guide)]
[Video]

Exercise 2: Playing Shift – overcoming innovation barriers



Exercise 2: Playing Shift – overcoming innovation barriers

- **Problem / challenge:** How might we overcome typical innovation barriers in the full scale of innovation processes
- **Purpose & Objectives:** When working through development, design and innovation processes in both private and public organizations stakeholders stumble upon a number of gates and challenges which are difficult to overcome. This games helps participant to develop strategies for overcoming the barriers.
- **Methodology:** Floor-based game with a three-step level progression and hidden barriers in the bricks. The game has two content versions – either it can be played narrowly connecting to only ideation stages or more broad to the full run of innovation processes. Archetypical roles are incorporated to change perspectives and viewpoints.
- **Participants:** Groups of 5-6 participants. With a bigger floor up to 4 groups can play within the same game using the same bricks.
- **Experiences (strengths and weaknesses):** The game has a strong core that lets people experience realistic barriers and role-play reactions to the approaches the participants suggest to overcome them. The game effectively targets core problems in innovation processes due to the maturity in most companies. Since it is floor-based a weakness can be
- **Patterns:** Flow: Simulation; Component: Roles, Negotiation
- **Background**: Created by Emilie Bech Jespersen, Klara Birgisdottir, Lea Chenot and Sune Gudiksen in collaboration with Lufthansa; add-on called Fall-Fly specifically for Lufthansa was created by Param Jain and Cyprien de Hauteclocque.

5. Status Quo & Future orientation

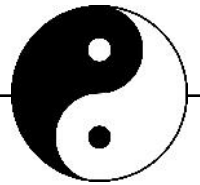
Dimensions & Directions

Dialectic poles in games for innovation

Gudiksen & Inlove 2018
Gudiksen 2020

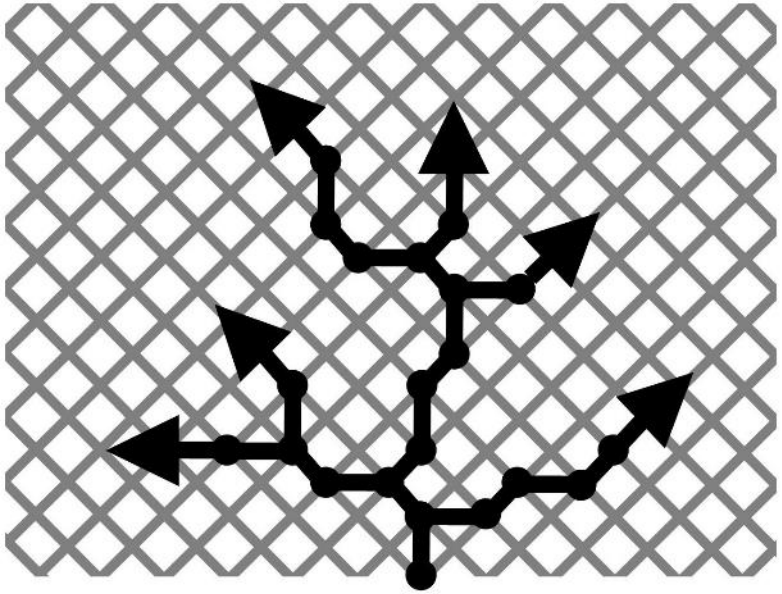
Emergence

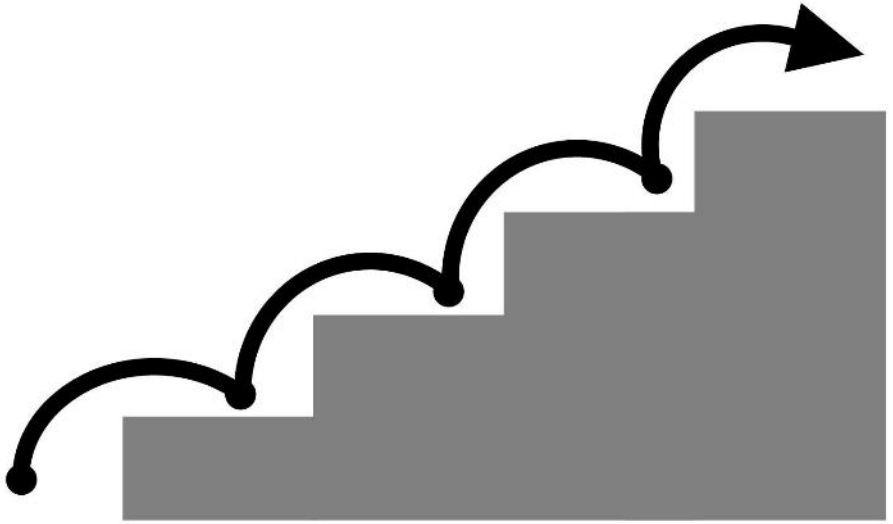
(Informal, Unstructured)



Progression

(Formal, structured)

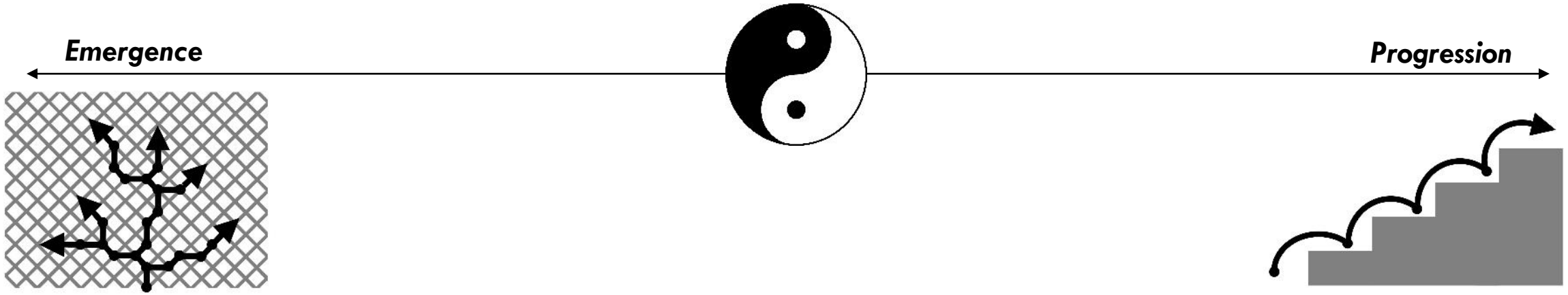




Emergent-structure based on triggers or few rules, that creates a play space where many situations, actions and directions can emerge.

Progression-structure based on a predetermeant sequence of activities that participants should go through step-by-step.

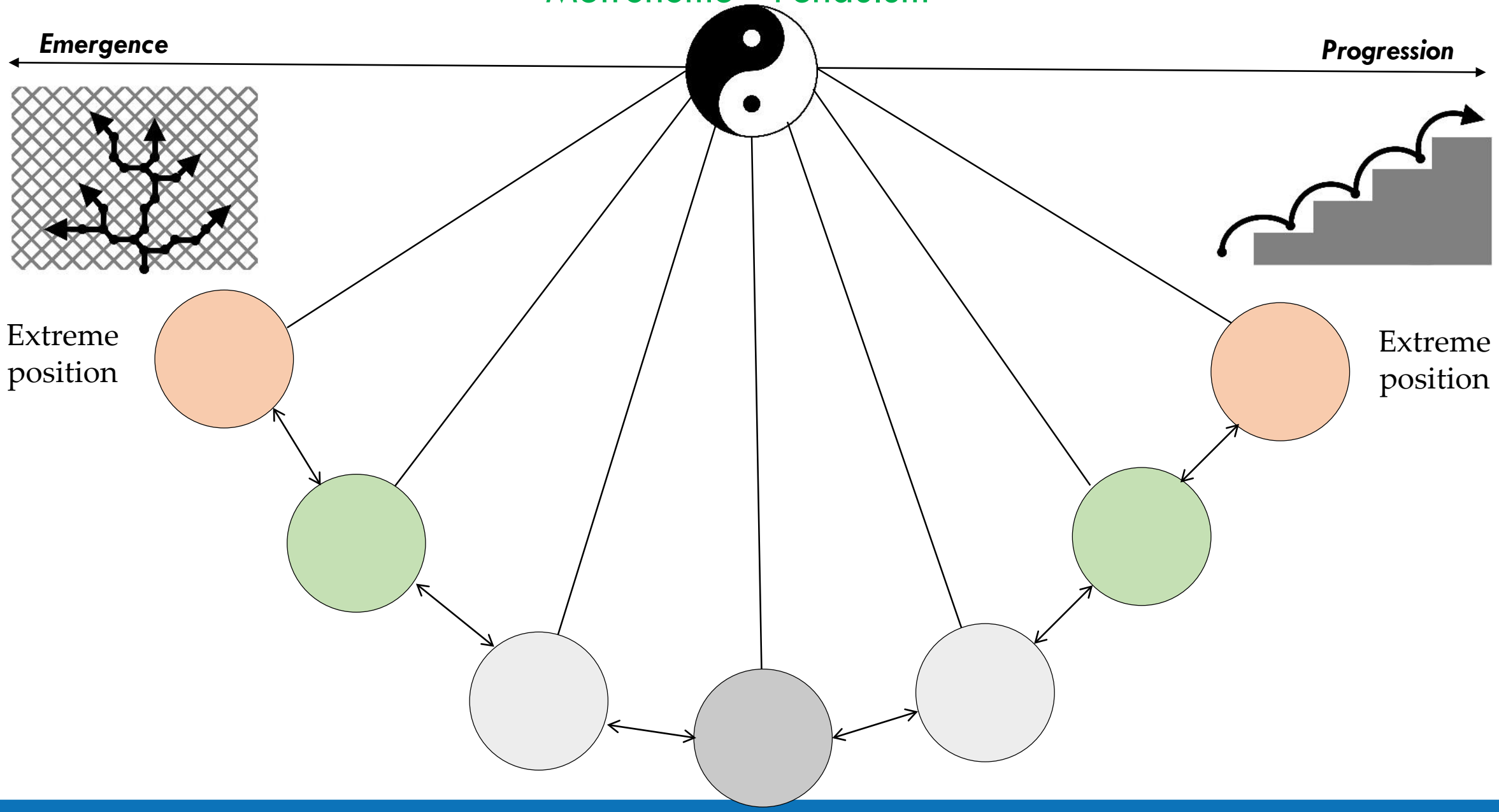
Dialectic poles in games for innovation



Unpredictability	↔	Predictability
Chaos	↔	Repetition
Long-term	↔	Short-term
Participant-driven	↔	Instructor-driven
Emergent purpose	↔	Predefined purpose

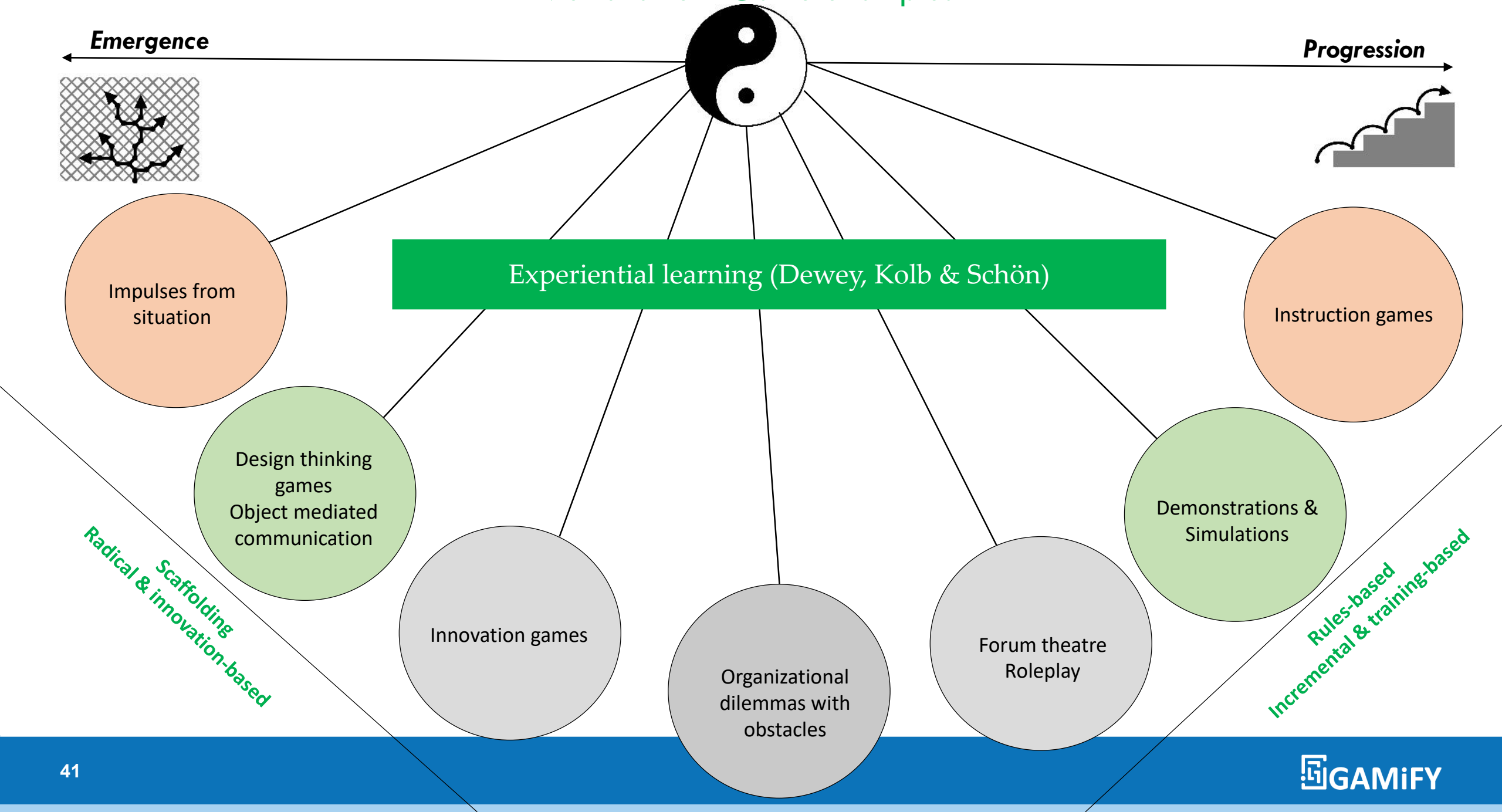
 /// Gudiksen, S. & Inlove, J. (2018) & Gudiksen, S. & Patricio, R. (2024). Upcoming special issue in Creativity and innovation management journal.

Metronome - Pendulum



Open-ended

Metronome – Game examples



Discussion & Questions

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Thank you for your attention! Feel free to reach out

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Project Duration: January 2019 - December 2021

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