

Concept of Gamification



Gamification

Gamification is the use of game design elements or creating game like emotions in non-game context

(Deterding 2011, Marczewski, 2013)

Similar Concepts

- **Playfication** – the use of play elements in non-playful context (Nicholson, 2012)
- **Funification** – the use of game elements as an extra layer in serious context – bad integration or using only hedonic elements
- **Gamefulness** – experiential and behavioral qualities of gaming (McGonigal, 2011)
- **Playfulness** – experiential and playing qualities of playing (McGonigal, 2011)
- **Gamefull design** – artifacts that afford gamefulness (Deterding et al., 2011)

Serious Games

Games with a serious objective

Not only for entertainment

E.g.: **education**, defense, health care,
scientific exploration, emergency
management, urban planning, engineering,
religion, politics, ...

Game Based Learning Digital Game

Based Learning **Serious**

Games Learning Games

Edutainment **Gamification**

Game

Game is a **activity** of play in the **pretended** reality where participants try to achieve **challenging goal** by acting in accordance with **rules**

Ernest Adams (2009) Fundamentals of game design

Game is not always

- Competition
- Conflict – Game theory (math)
- Entertaining – serious games
- Fun

Game Elements

Any element that can be found in
the game

Achievements Actions **Aesthetics** Altruism Art Atmosphere Attitudes
Autonomy **Autotelic** Avatar Badges **Balance** Boss **Challenges** Characters
Cheating Cognition Collaboration Communication Community Competences
Competition **Concentration** Conditions **Control** Creativity Culture Curiosity
Decision_Making **Difficulty** Dimensions Discovering **Emotions** Empathy
Engagement Engrossment **Enjoyment** Environment Ethics Events
Experience Expressions Fairness Fantasy **Feedback** Fight **FLOW** Followership
Fun Gameplay **Goals** Group Identity Imagination Immersion Importance
Interaction Interest **Involvement** Knowledge Levels Location
Loosing_Self Loyalty Luck Meaningfulness **Merging** Messages
Motivation NPC Opponent Performance Physiology Player Points Preferences
Progress Psychology Recruiting Relatedness Relations Reputation Resources **Reward**
Risk Roles Rules Scoreboard Skills **Socialization** Sound Space Status Stile **Story**
Support Surprise Teamwork Time **Time_Transformation** Turns Uncertainty
Unknown Utility Voluntariness **World**

Gamification Fields

- Marketing
- Business
- Management
- ICT
- Sports
- Health care
- Education
- Libraries
- Zoo

Gamification in Business

**Business and Games are both
based on competition (mostly)**

Gamification in Education

Games and courses have similar
elements

Similar Elements

- Goals - course goals as game goals (pass, finish)
- Challenges - assignments
- (Interactive) activities
- Rules
- Reward - XP or grades
- Collaboration - in teams
- Socialization
- Big Boss fight – Exam
- Safe environment
- Time pressure
- Levels

Different Elements

- Competition
- Fight
- Instant feedback
- Game world
- Game aesthetics
- Story
- Characters
- Risk
- Luck
- Resource acquisitions
- Control
- Voluntariness
- Altruism
- Nonessential
- Fun
- Immersion
- FLOW
- ...

Gamification in Health Care

- **Sports** – increase the physical activity
- **Nutrition** – promote healthy diet
- **Life stile** – promote healthy life style (decrease smoking, drinking, sitting, ...)
- **Treatment** – prevention, detection and rehabilitation
- Product and service design

Gamification in Business

- Innovative product or service functionality
- Marketing and advertisement
- Customer loyalty and involvement
- Staff motivation and management

Purpose of the Gamification

Increase the motivation

Engagement, participation, activity, ...

Flow

State of mind where one is so deeply **concentrated** in the task in hand that she loses the sense of **time** and stop worrying about **self**
(Csikszentmihalyi 1990)

Flow

Autotelic Experience

Losing
Self-consciousness

Time
transformation

Merging
Action-awareness

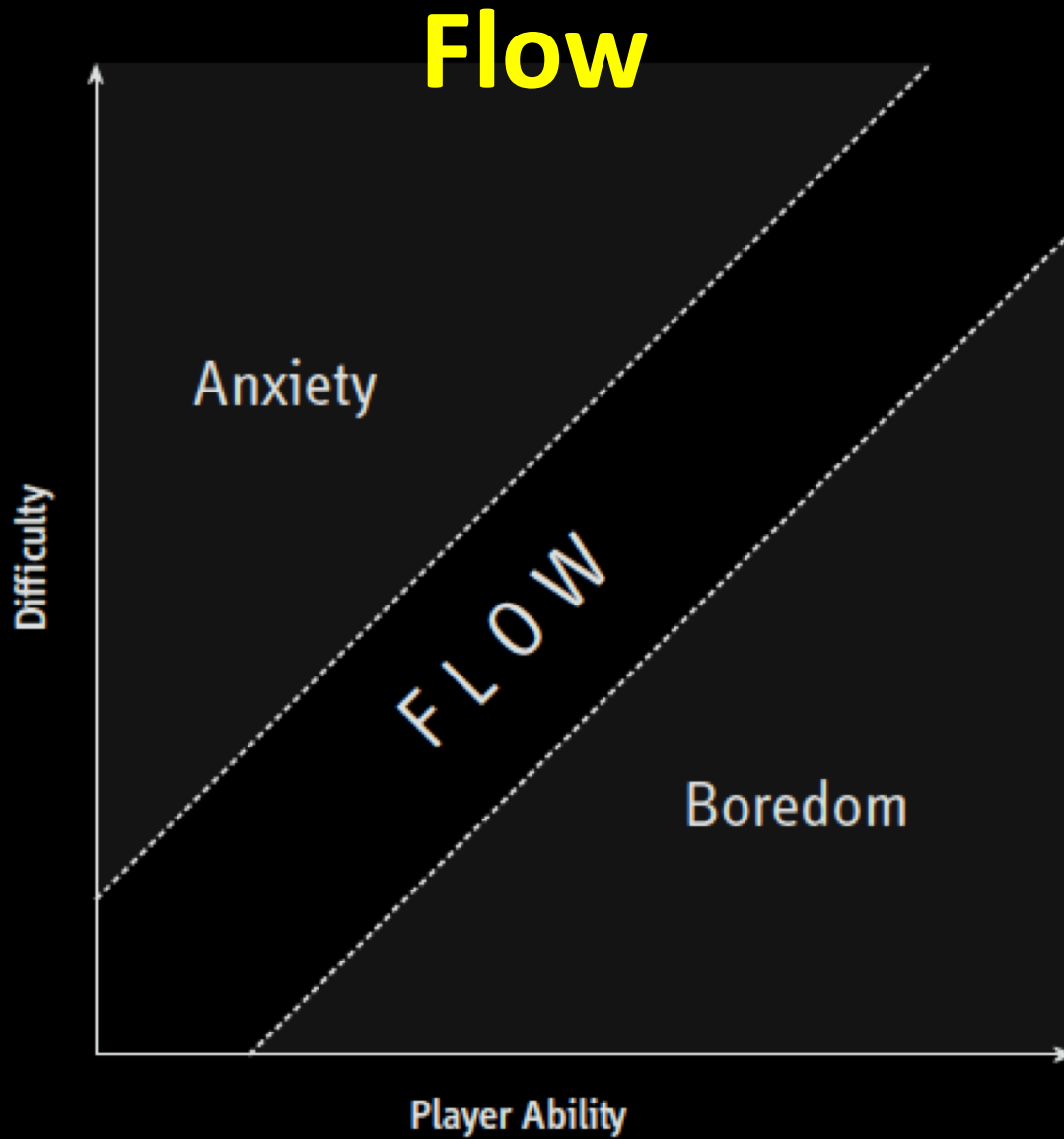
Control

Concentration

Clear
Goals

Skill-challenge
Balance

Unambiguous
Feedback



Mihaly Csikszentmihalyi 1990

Most frequently used game elements in gamification?

Points

Badges

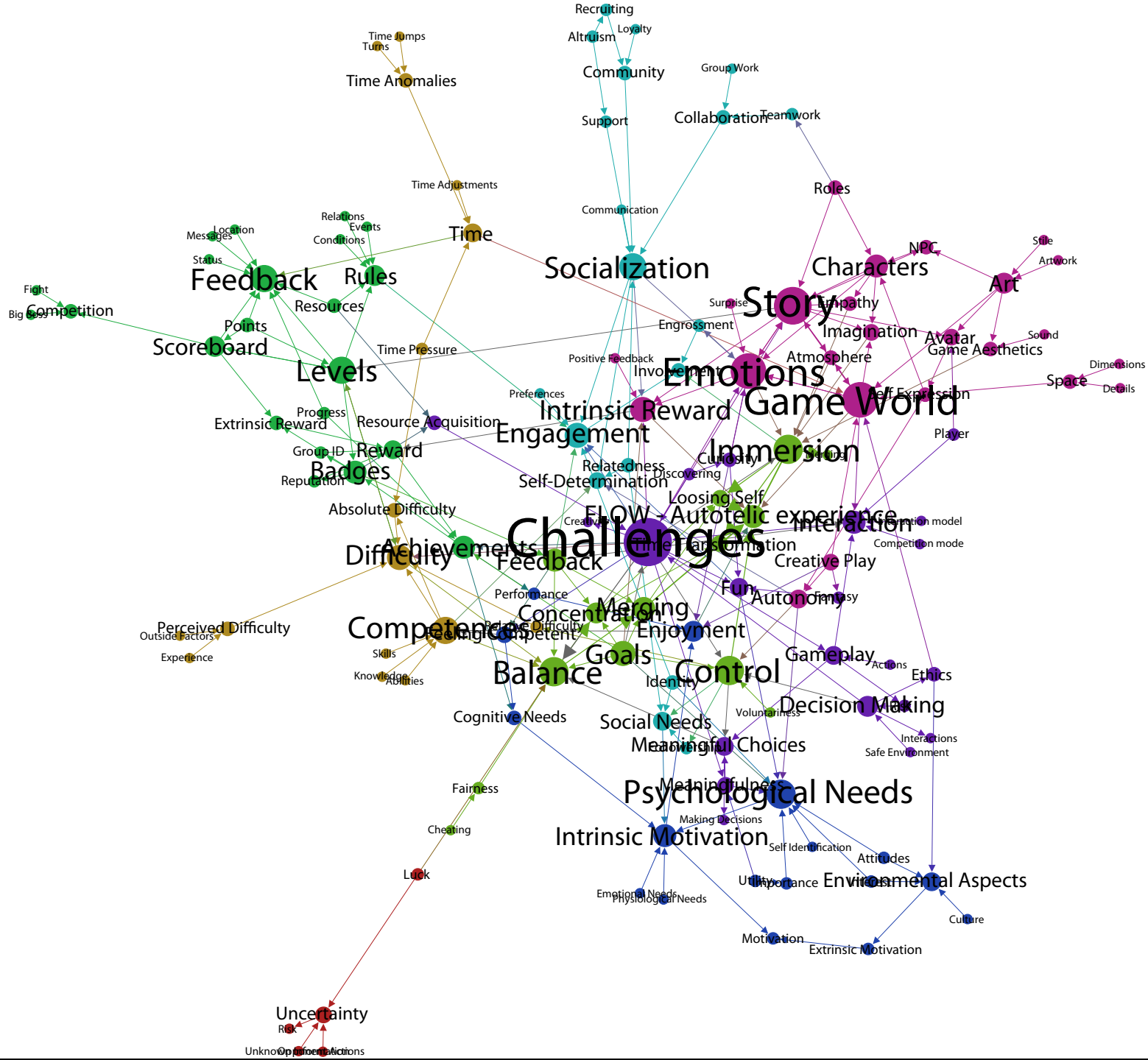
Scoreboard

Easy to implement

Extrinsic motivator only

Most important game element

Challenges



Typical Challenges

- **Physical coordination** – speed and accuracy
- **Formal logic** – puzzles where no additional information is needed
- **Math** – e.g. financial calculations
- **Time pressure**
- **Factual knowledge** – e.g. quiz
- **Memory**
- **Pattern recognition** – in NPC action or in environment
- **Exploration** – finding hidden objects
- **Strategy** – planning and executing
- **Economics** – resource accumulation
- **Conceptual reasoning** - puzzles where external knowledge is needed

Genre = Challenge

	Phys	Eco	Concept	Tact	Log	Expl	Logic
Action	+	+	~	~	-	-	-
Strategy	-	~	~	+	~	~	-
Role	-	+	~	+	+	+	~
Simulation	+	-	-	+	~	-	-
Management	-	+	+	+	~	-	-
Adventure	-	~	~	-	-	+	+
Puzzle	~	-	+	-	-	-	+

Ref: Ernest Adams (2009) Fundamentals of game design

Intrinsic Motivators

Meaningful challenges *

Feeling competent

Feedback

Entertainment

Feeling emotions

Curiosity (interest)

Feeling control (power)

Self identification

Relatedness

Feedback Elements

- Messages
- Progress
- Resources
- Points
- Badges
- Levels
- Scoreboard
- Time
- Status
- Location

Feedback Loop



Entertaining Elements

- **Gameplay** – challenges* and actions
- **Aesthetics** – style of the environment
- **Harmony** – all elements fit in to the big picture
- **Storytelling** – interactive story telling
- **Risk and reward** – uncertainty, hidden information
- **Novelty** and variety
- **Learning** – how to proceed, content
- **Creative and expressive play** – design of game items
- **Socializing** – communicating with others
- **Immersion** – forgetting real world

How to implement **collaboration** in the gamified service?

Form teams

Define roles

How to implement game **aesthetics**
in the gamified service?

Game like environment
Game world and characters

How to implement **characters** in the gamified service?

Player **avatar** design

Avatar **journey** and development (RPG)

Doctors, teachers, bosses ... as
characters (NPC)



Unicow

Having only one horn since birth, she was made fun of by the other cows. Driven by the urge to find a place where she would belong to, she stumbled upon the legend of unicorns. Now, believing she's an unicorn, she has set out to find the mystical creatures. Will she find the unicorns? Will she ever acquire magical powers? Find out in the next episode.

How to implement **Risk** in the gamified service?

Randomly pointed tasks

Assignments based on **unknown information**

Results affected by **other players**

True Random Number Generator

Min:

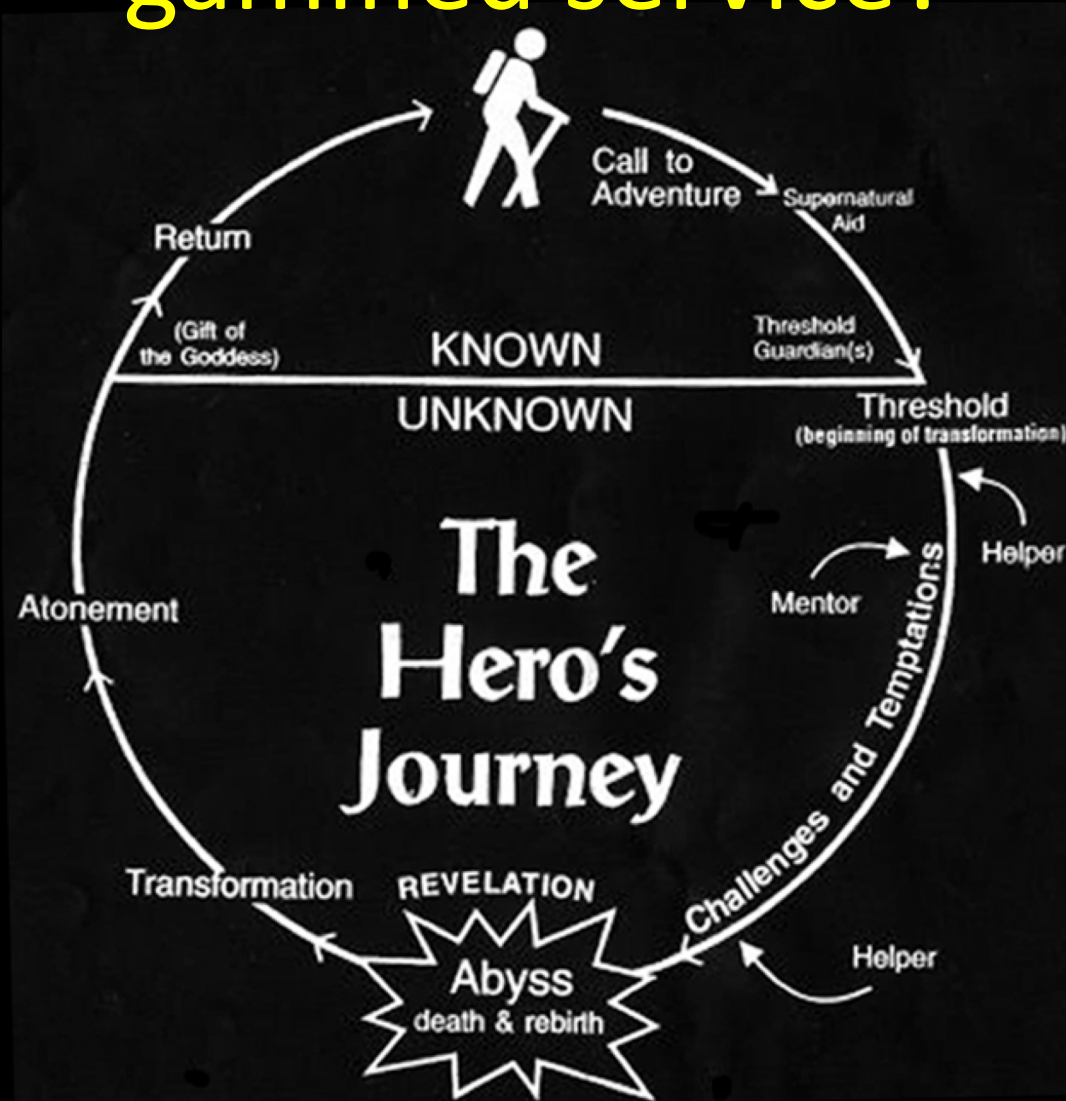
Max:

Generate

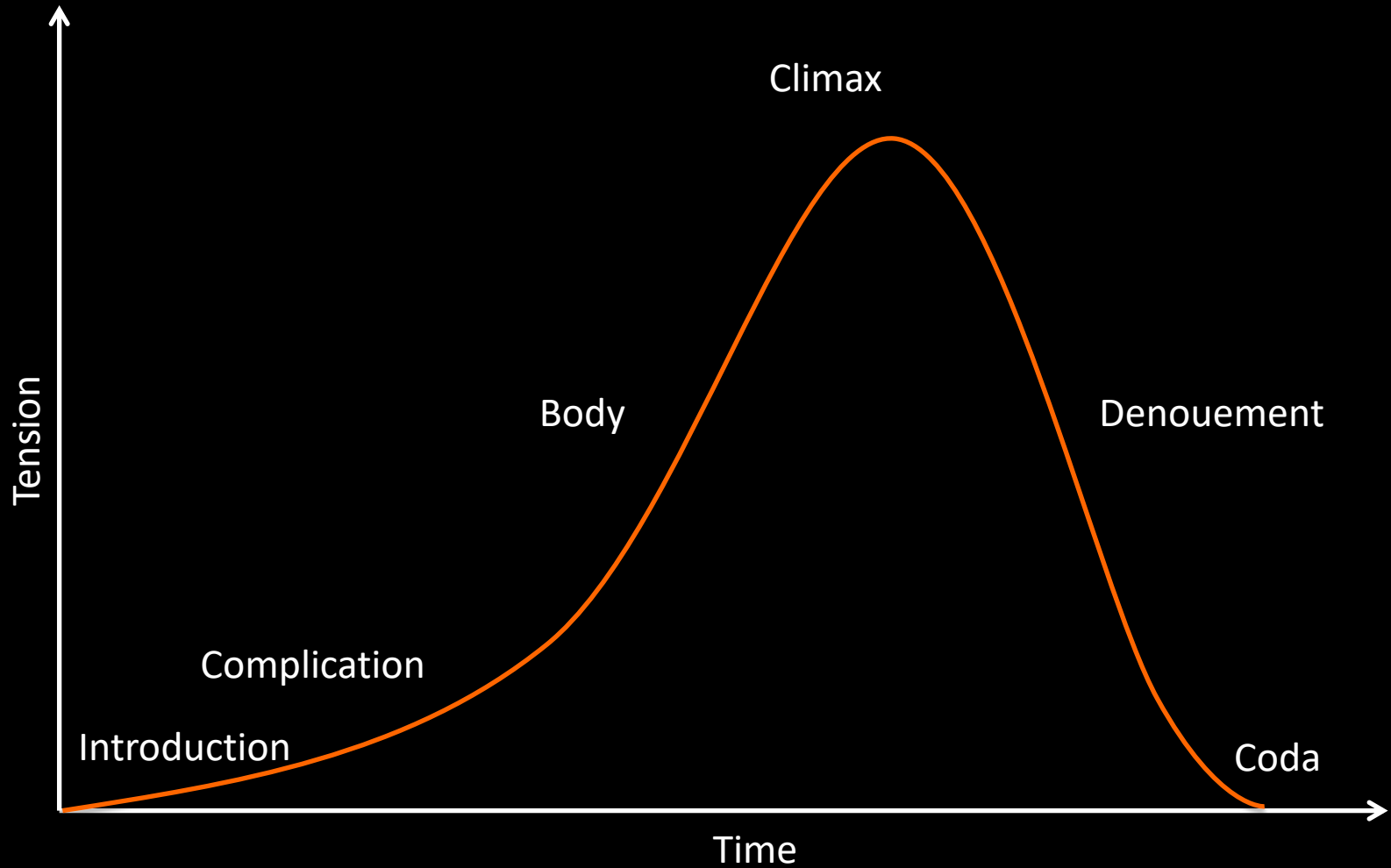
Result:

Powered by RANDOM.ORG

How to implement **Story** in the gamified service?



Story Phases



How to implement **Control** in the gamified service?

Ask participants to define the objectives

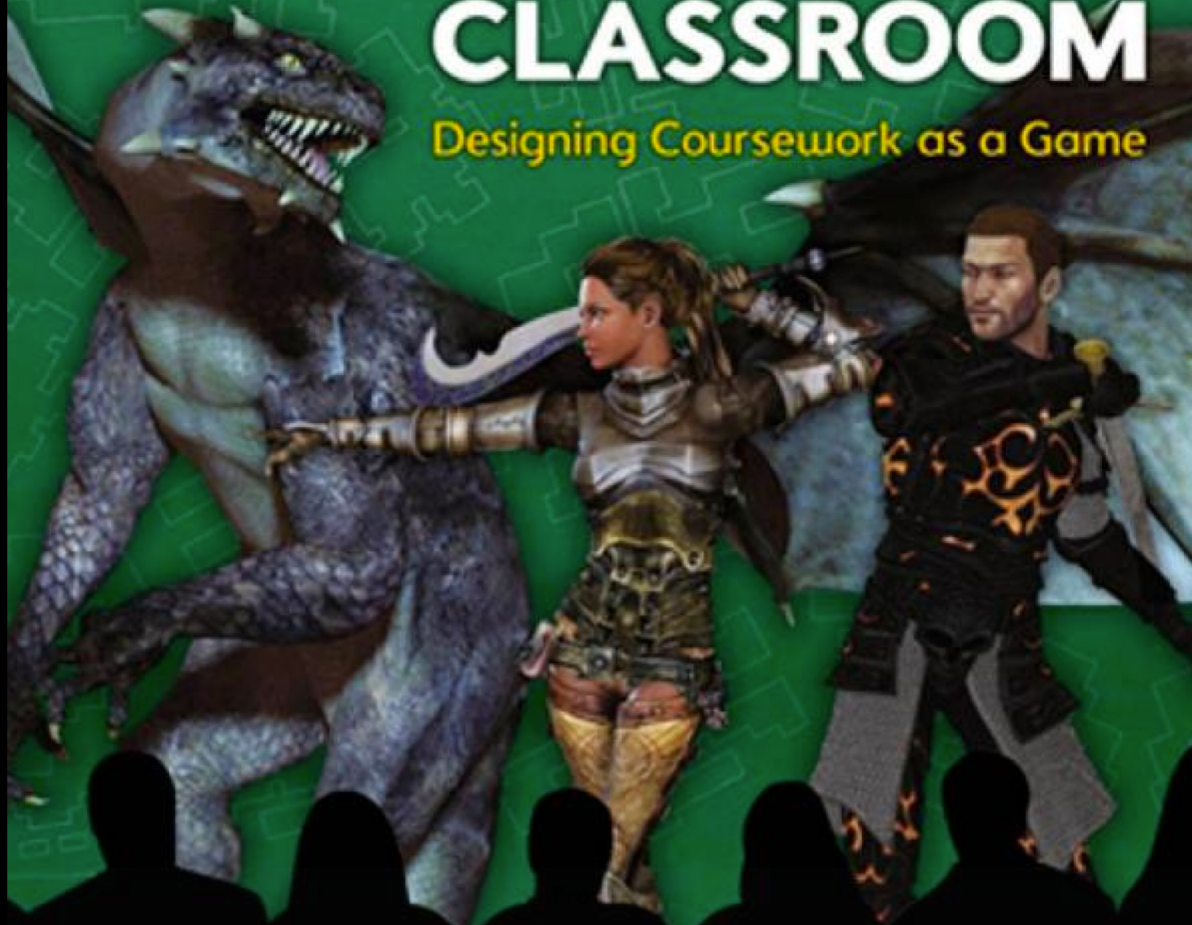
How to implement **Voluntariness** in the gamified service?

Let participants to choose the
challenges

Recommended Readings

THE MULTIPLAYER CLASSROOM

Designing Coursework as a Game



Lee Sheldon

