Universität Zürich[UZH]

Digital Game-Based Learning

Game Topic

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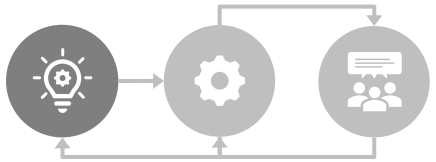
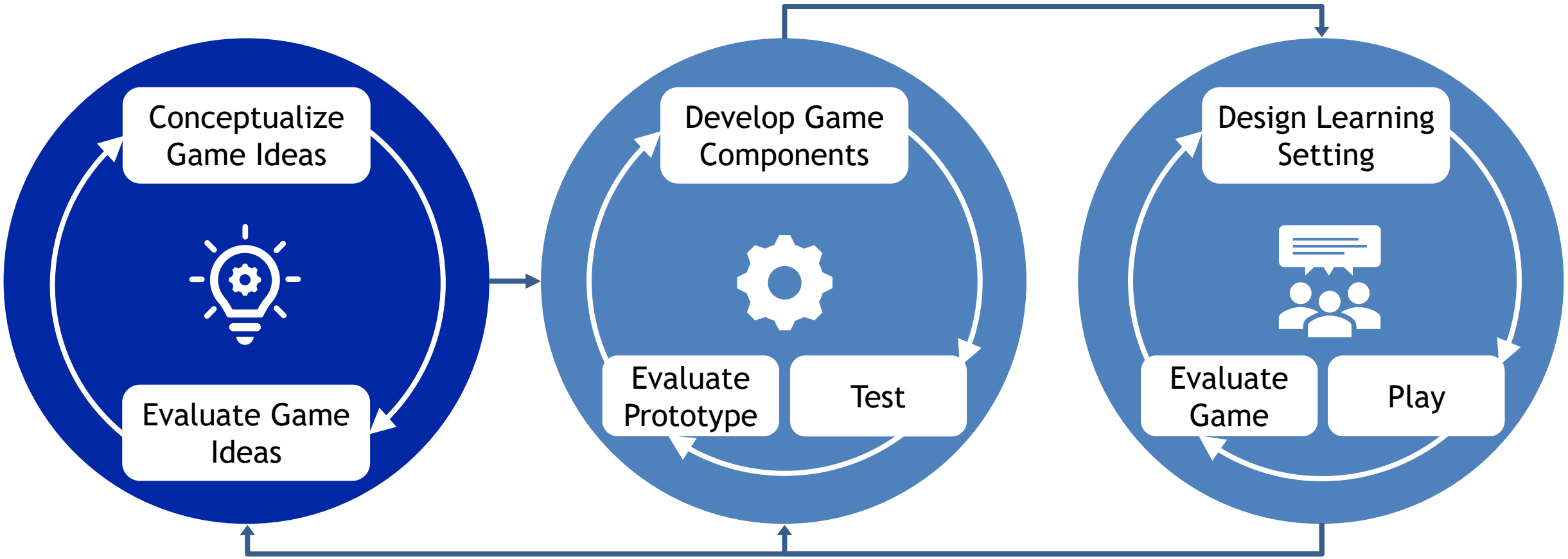
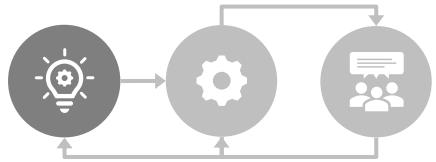
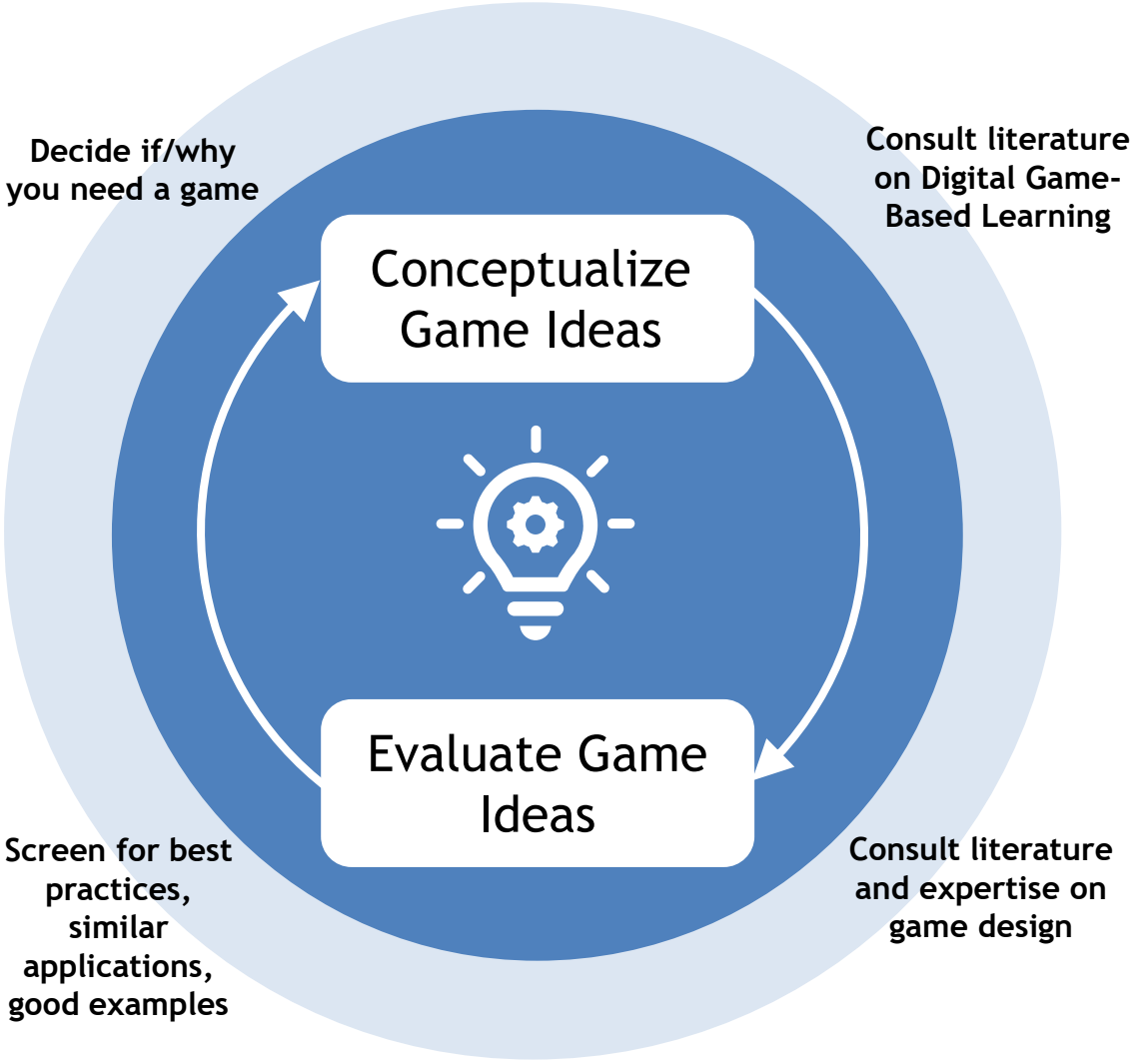
Overview

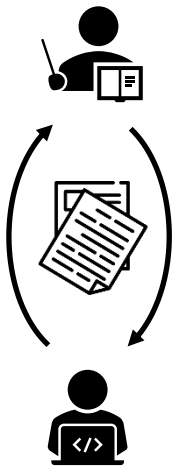



Game Topic
Game Development
Game Execution
Conceptualize Game Ideas
Evaluate Game Ideas
Develop Game Components
Evaluate Prototype
Test
Design Learning Setting
Evaluate Game
Play

Workflow







Approaches

Surveys, workshops (e.g. «Design Thinking»), expert interviews, market analysis (existing games), literature research

Responsibilities

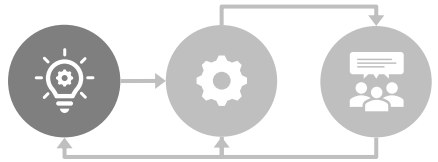
Content:

- Define target groups and learning outcomes
- Conceptualize, prioritize & evaluate game ideas (content & methodology)
- Define properties like language and modality (e.g., web application, tablet application)

Technical:

- Evaluate feasibility in terms of cost and resources
- Game engine (Unity, Unreal, Web App, etc.)
- Programming languages and overall setup

Conceptualizing Game Ideas: Student Survey Example



Brainstorming for topics and specific ideas among Bachelor students in the class «Asset Management: Investments» at the University of Zurich

Game-based Learning

In welchem Studienjahr befindest du dich?

Bitte wählen Sie eine der folgenden Antworten:

- 1. Jahr
- 2. Jahr
- 3. Jahr
- 4. Jahr
- 5. Jahr
- 6. Jahr
- > 6. Jahr
- Keine Antwort

Beim sogenannten Game-based Learning werden analoge und digitale (Brett-)spiele oder Simulationen eingesetzt, um die erlernten theoretischen Inhalte anzuwenden und zu festigen. Bist du Game-based Learning während deinem Studium schon mal begegnet?

Ja | Nein | Keine Antwort

Meiner Meinung nach sollte "Game-based Learning" ..... im Unterricht eingesetzt werden.

Bitte wählen Sie eine der folgenden Antworten:

Bitte auswählen..

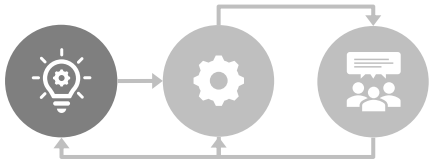
Folgende Themen, welchen ich während meinem Studium an der UZH begegnet bin, könnten mit "Game-based Learning" vertieft vermittelt werden:

Hättest du Interesse an einem Workshop (Aufwand ca. 2 Stunden) mitzuarbeiten, um zusätzliche Themen oder Ideen generieren zu können?

Ja | Nein | Keine Antwort

Absenden

Conceptualizing Game Ideas: Student Survey Example



Results of a survey among Bachelor students in the class «Asset Management: Investments» at the University of Zurich. Outcome: Topics for which students think a digital Game-Based Learning approach would be beneficial.

Category	Topics
Accounting / Controlling	• Accounting, managerial accounting & cost accounting • Finance controlling
Quantitative Finance	• Asset pricing
Banking	• Banking & bank regulation • Capital requirements / liquidity of banks
Corporate Finance	• Valuation • Corporate finance • M&A, investment banking
Game Theory	• Game theory
Mathematics / Statistics	• Algebra • Empirical economics • Statistics
Portfolio Management	• Investment strategy development and investment strategies • Portfolio management, investment simulations, portfolio game

Evaluating Game Ideas: Workshop Example

Making a decision for favoured ideas matching the needs of the Department of Banking & Finance and of the students – Sample outcome of a workshop:

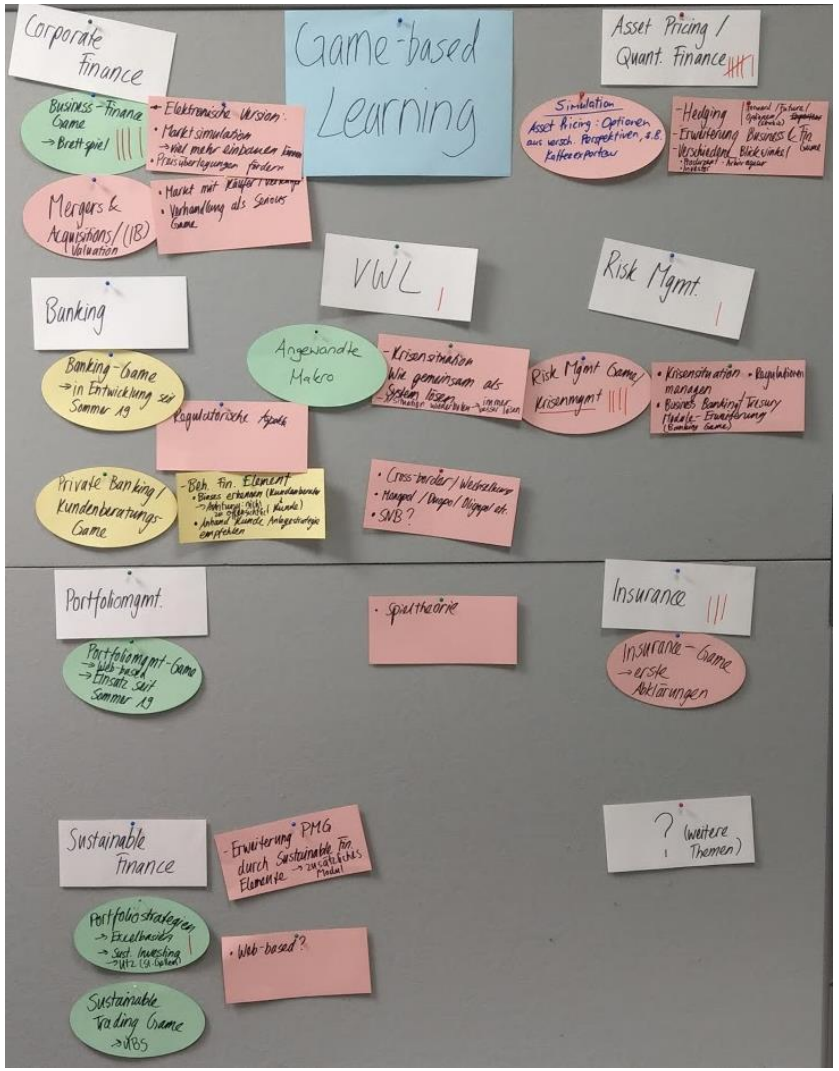
Topic categories

Ideas on a specific topic

Serious Game/ Simulation (existing)

Serious Game/ Simulation (in development)

Serious Game/ Simulation (open)



After deciding for specific serious game / simulation ideas: Prepare learning objectives for the favoured ideas

Best Practice from Our Experience

- Involve potential users (e.g., students and lecturers) in the game creation process with surveys, workshops, or other interactions.
- Think about didactical and technical implementation and feasibility when evaluating ideas.
- Establish a link between science and practice during the development of the game idea (i.e., what is the theory and how is it applied in practice/at work).

- Time and financial resources are limited, therefore set priorities thoughtfully.
- Ensure that the defined learning outcomes for the game are aligned with the goals and knowledge level of the users.

Key Takeaways

1. Evaluate first whether a learning game is a good fit for your problem, as other teaching methods can work better depending on your use case.

2. Involve potential users in the idea generation process to get a broader perspective.

3. Ensure that the knowledge level of the potential users and the learning goals of your game match well.