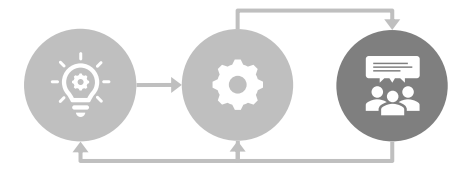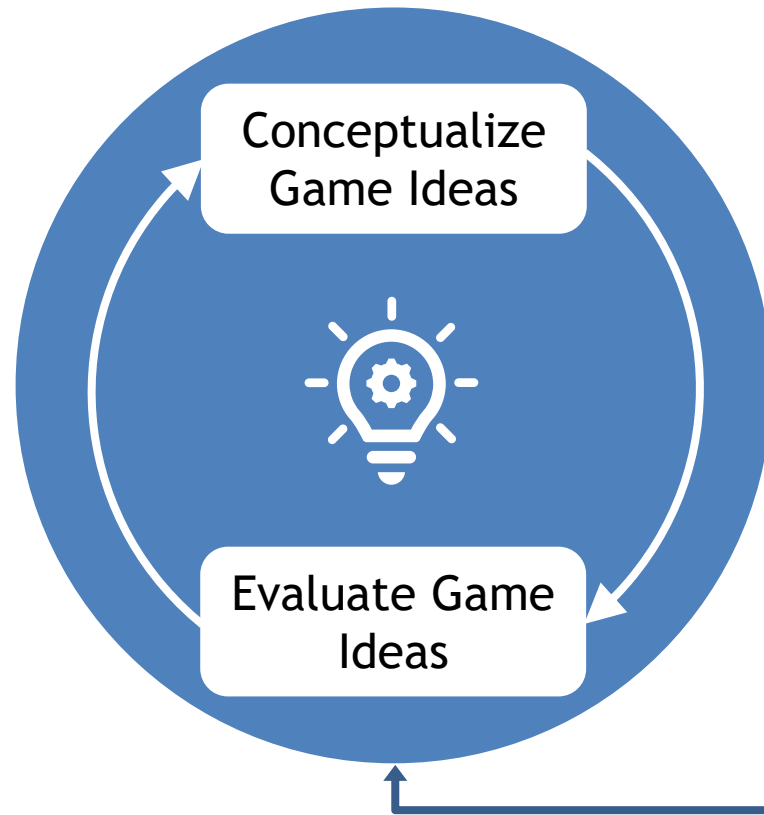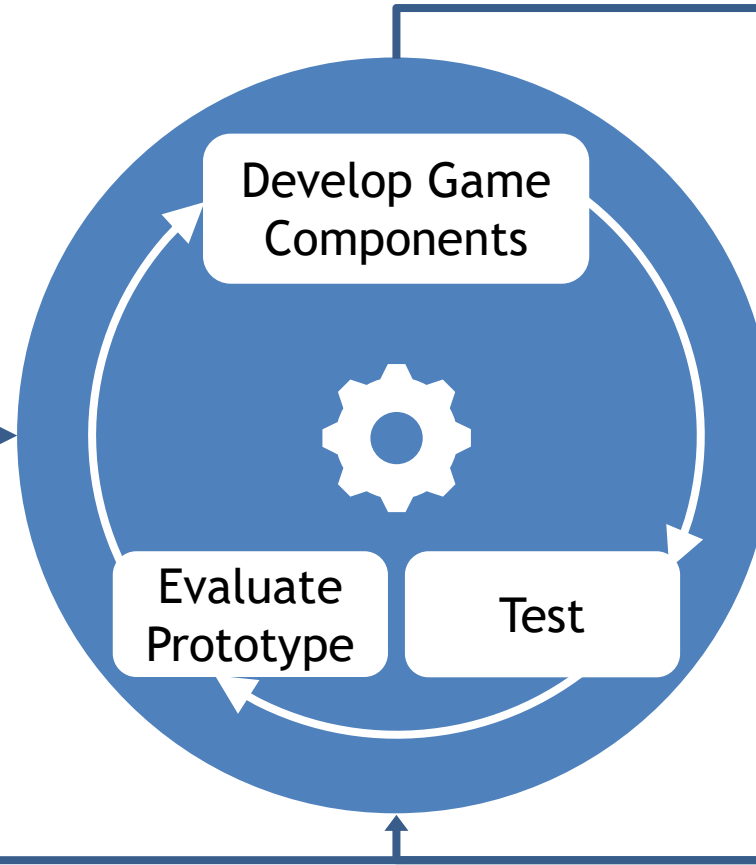# Digital Game-Based Learning
Game Execution

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Game Topic

Game Development

Game Execution

Conceptualize Game Ideas

Evaluate Game Ideas

Develop Game Components

Evaluate Prototype

Test

Design Learning Setting

Evaluate Game

Play

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Workflow
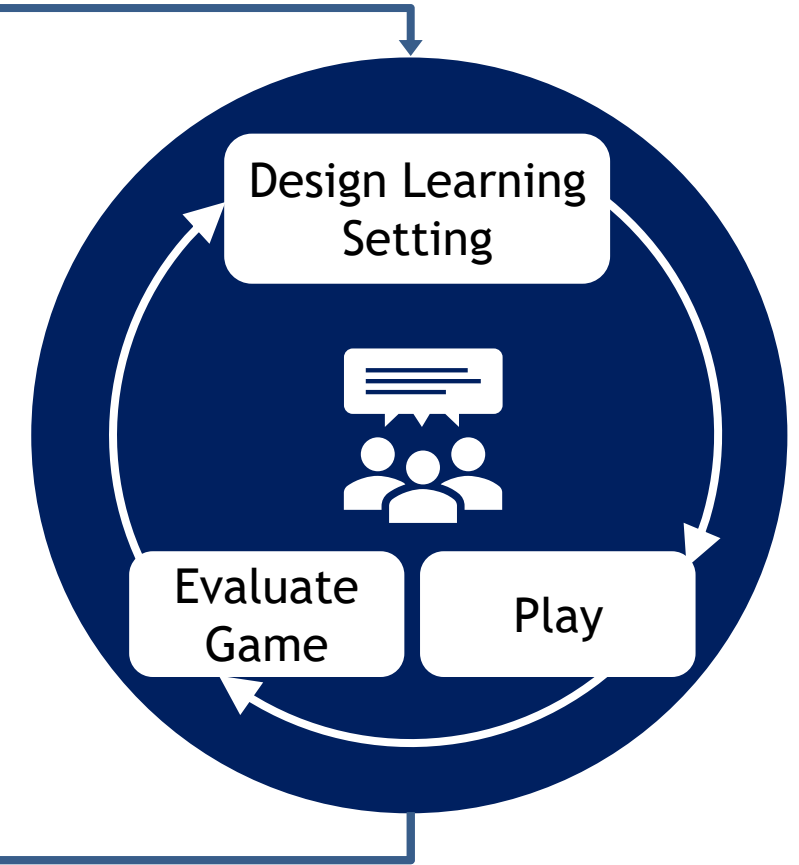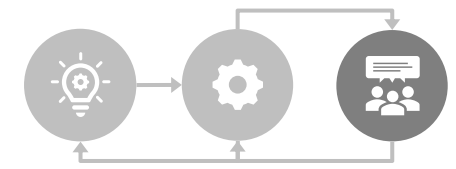
Embedding the game in a didactic environment

Design Learning Setting

Evaluate Game

Play
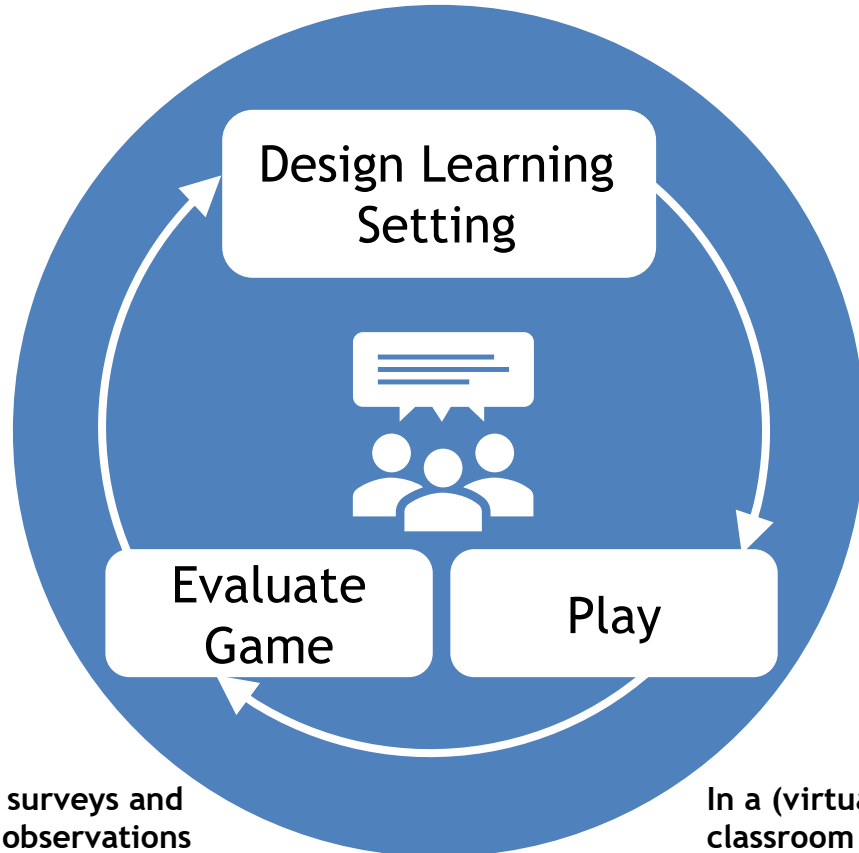
With surveys and user observations

**In a (virtual) classroom setting**

Responsibilities
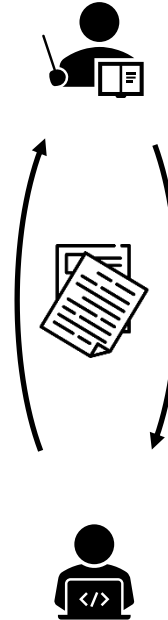
Content:
- Plan & supervise game execution
- Explain game results and theoretical background
- Perform evaluations
  - Feature-completeness
  - Bugs & other feedbacks
  - Playfulness, learning outcomes
  - Briefing and Debriefing (reflection, discussion, take-home messages)

Technical:
- Observe user behaviour regarding usability/workflows
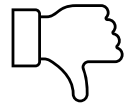- Analyse application performance/errors
- Ensure failure-free game execution

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Onsite versus Online
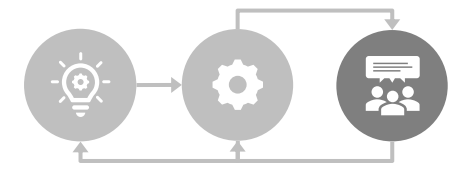
- **Onsite Game Execution:**
  - 👍 – Direct communication between participants, team spirit, use of onsite learning materials, competitive atmosphere
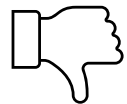 - 👎 – Access restricted to people who are present and room capacity, fixed schedule, more expensive

- **Online Game Execution:**
  - 👍 – Worldwide access, simultaneously working on same things possible, convenient, possibility of flexible hours, cost- and timesaving
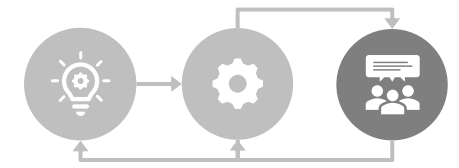 - 👎 – Network stability (streaming lags can cause irritations), looking at everyone at once can be distracting, isolating, needs more self-discipline

Role of the instructor is to provide timely and detailed feedback and facilitate critical thinking, problem-solving and use of resources (Means (2020)).
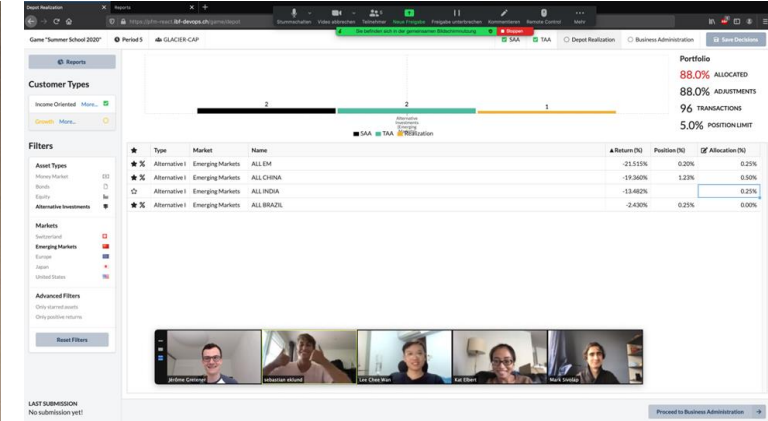
Use Case: Playing a Simulation

Onsite: Game Play

Onsite: Evaluation

Online: Game Play

Best Practice from Our Experience

- Communicate the main learning objectives so that the students know in advance what they are going to spend their time on.

- Provide sufficient theoretical background before the game starts, be it in the form of prerequisite readings or lectures.

- If a course requires grading, think about integrating assessment tasks that are related to the game but not only based on game performance. For example, players could elaborate on the outcome of their team.

- Learning games should not be used to just "fill time" in an otherwise regular schedule. Instead, the schedule needs to be adjusted such that a learning game is tightly integrated.

- Make sure that player performance is not based on luck alone, as that would lead to frustration. Instead, there should also be attribution for how the game was played.

Key Takeaways

1 Ensure that the students have the relevant theoretical background before they play the game (e.g., provide prerequisites, readings, or an introductory session).

2 Prepare a sound didactical concept that embeds the game into your course or seminar setting.

3 Provide regular feedback to the players so that they can continuously improve their knowledge throughout the game.