



# **Fostering Digital Skills of lecturers at academic institutions with the help of a Serious Game**

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**HfH**

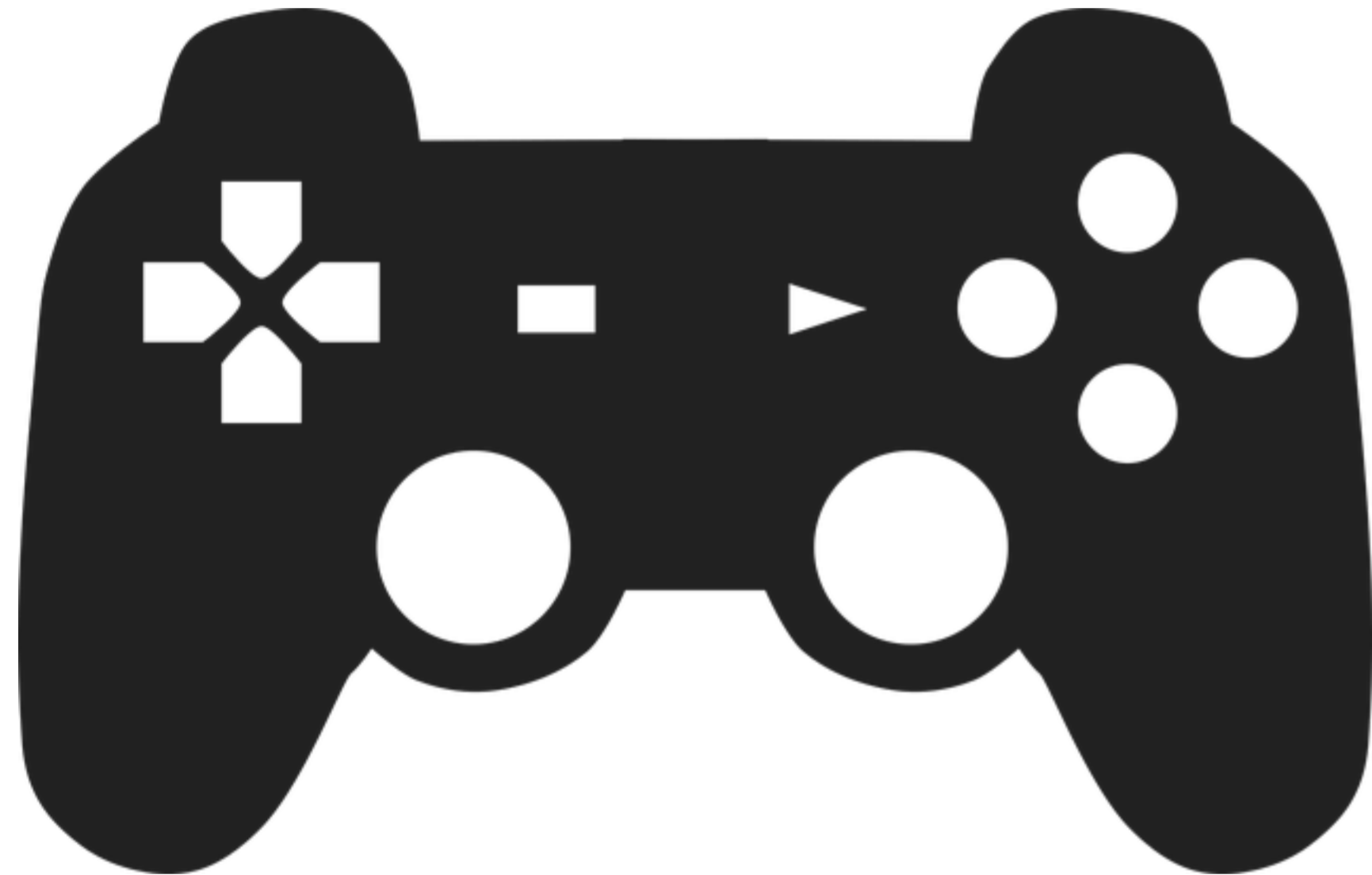


# Expectation Management

1. Theoretical Basis – some terms and definitions
2. Human-Centered-Design (HCD)
3. Application of HCD in the Serious Game
4. Prototype: adopt to a heterogeneous target group
5. User Tests: set-up and questions
6. Demo Prototype
7. Results of User Tests
8. Q&A



# Why so serious?



**Serious Games  $\neq$  serious content or story**

**Difference between a Game vs. Serious Game**

- Main purpose of a game: entertainment
- Serious Games: can be entertaining, but entertainment is not their main purpose (Abt, 1970)

Side note: not all Serious Games are digital

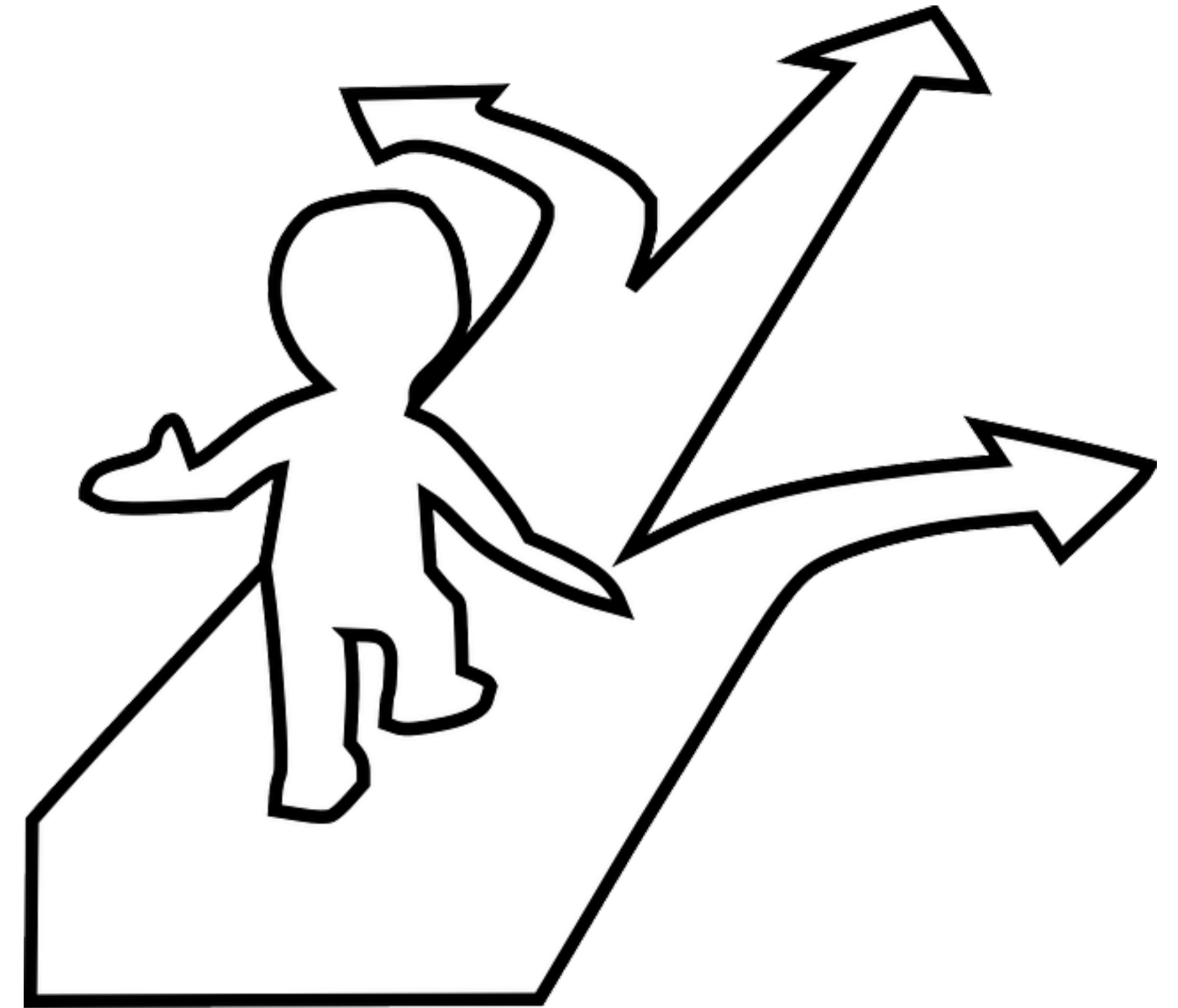
# Motivation through game elements

## PBL-Triad

- Points
- Badges
- Leaderboards

## Game elements and motivation

- 3 universal psychological needs (Ryan & Deci, 2000):
  - experiencing competence
  - experiencing autonomy
  - social integration
- > e. g. free choice of your way through the game / offering options



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# Human-Centered-Design (HCD)



How to engage  
your users?

**Ask them!**

## Basis of HCD:

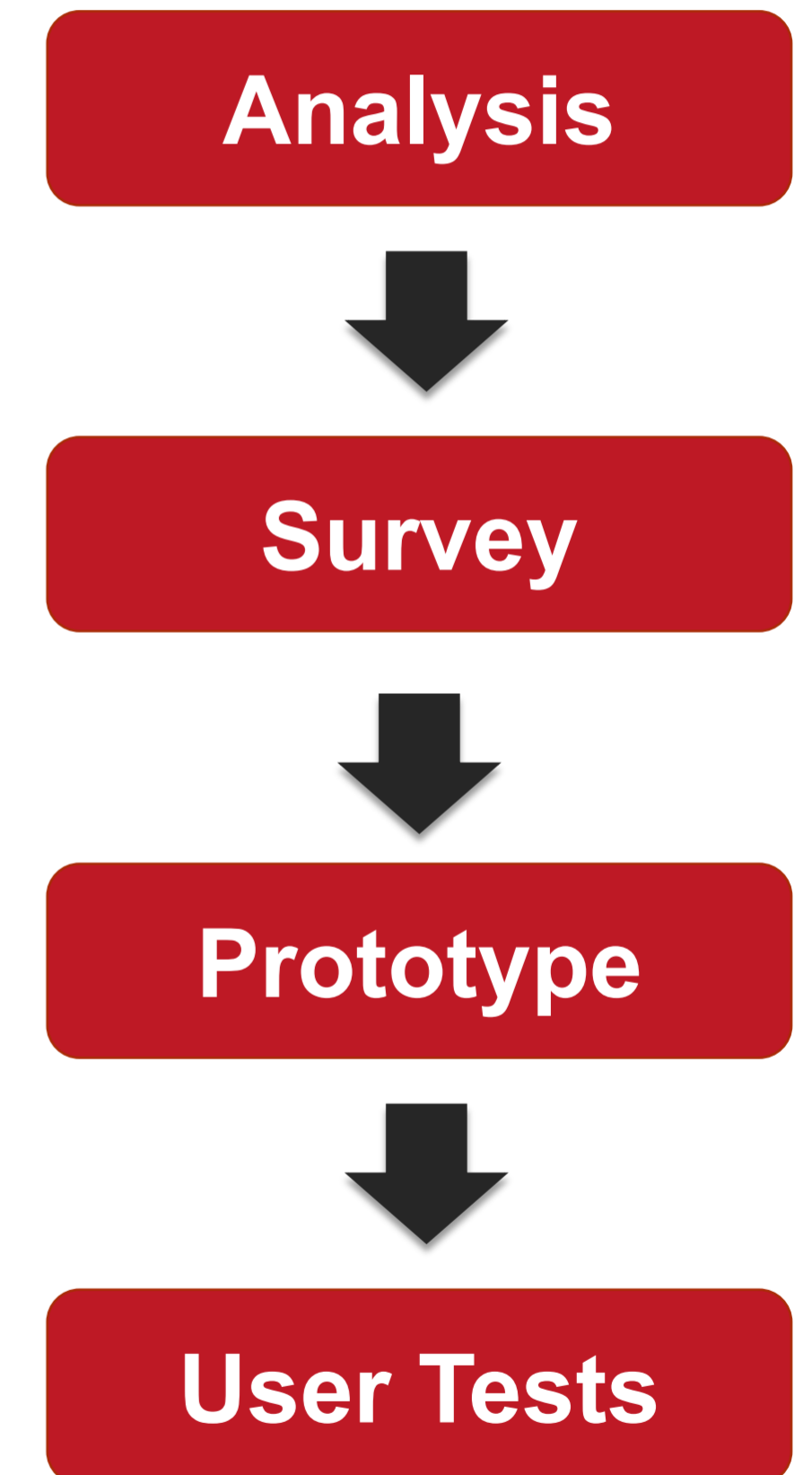
**ISO-Standard 13407 «Human Centered Design Process for Interactive Systems» (1999) and its updated versions**

## HCD a nutshell:

- comprehensive understanding of the user
- iterative customizing and development based on user centered evaluation
- interdisciplinary knowledge and viewpoints

# Application of HCD in the Serious Game „Home Office“

- Target Group Analysis
- Rough ideas for learning targets and content
- Create several story ideas -> test story ideas -> adapt story ideas
- Conduct Survey (story ideas, content proposals, room for feedback)
- Combine story (“Home Office”) with selection of learning targets (content)
- Build prototype for Serious Game in prototyping tool
- Design user tests of prototype -> test user test -> adopt user test
- Conduct user tests
- Integrate findings from user tests into prototype



# Consider individual preferences of target group

Different elements for different player types

## Four types of “pages”



## Autonomy

- Choose your way through the game at your own pace according to your own interests
- View or skip additional content (tips, context pages)

# Reward different achievements

Different options for success for heterogenous digital skills



## Different types of rewards

- Points: based on performance
- Badges: based on subject-specific progress
- Crowns: based on engagement, not on performance

(Story: independent from performance of the player)

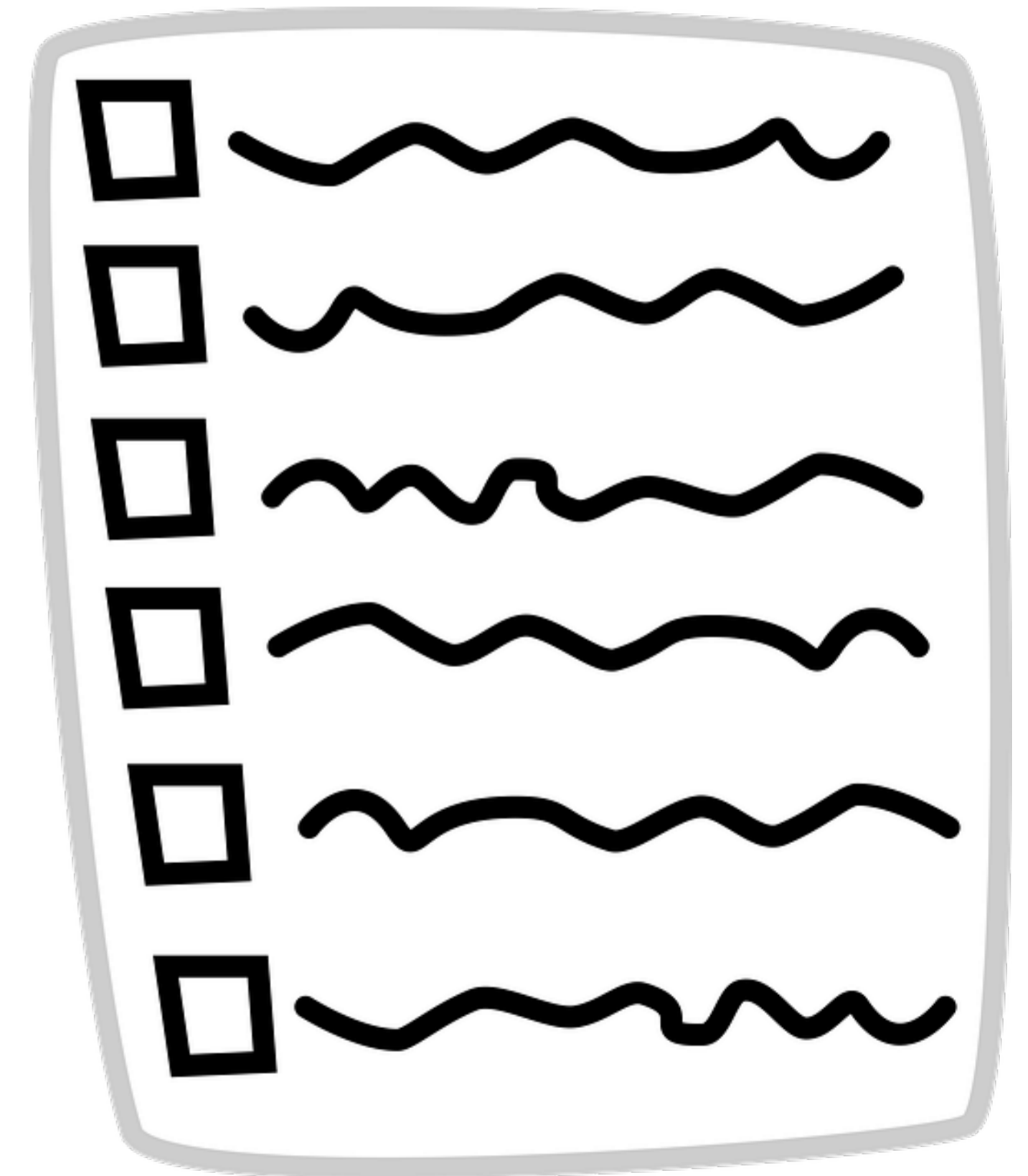


# User Tests

5 persons, approx. 1 hour per test person, video conference  
(test person shares screen)

## Approach

- Short introduction
- No speaking aloud, instead recording of user test
- General questions before game phase:
  - How would you rate your own digital skills? (5,4)
  - How do you like learning with games? (6,2)
- Game phase (ca. 15 Min.)
- Unstructured feedback (“How did it go? What have you noticed?”)
- Standardized questions



# Prototype Demo

- Serious Game “Home Office”
- created with Adobe XD
- no logic (no saved points, personalized data etc.)

✕ Beenden



## Home Office

Ein Serious Game zur Stärkung von digitalen Grundfertigkeiten.

Interkantonale Hochschule für Heilpädagogik Zürich  
Digital Learning Center

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Start ▶▶

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# Results and learnings from user tests

- What did my test users like about the Serious Game?
- What did motivate them? What was entertaining?
- How did they rate the content?
- What else would they like to see in the game?



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# Standardized questions after the game phase



**How would you feel if you were sent out of the game in order to try something directly in your browser?**

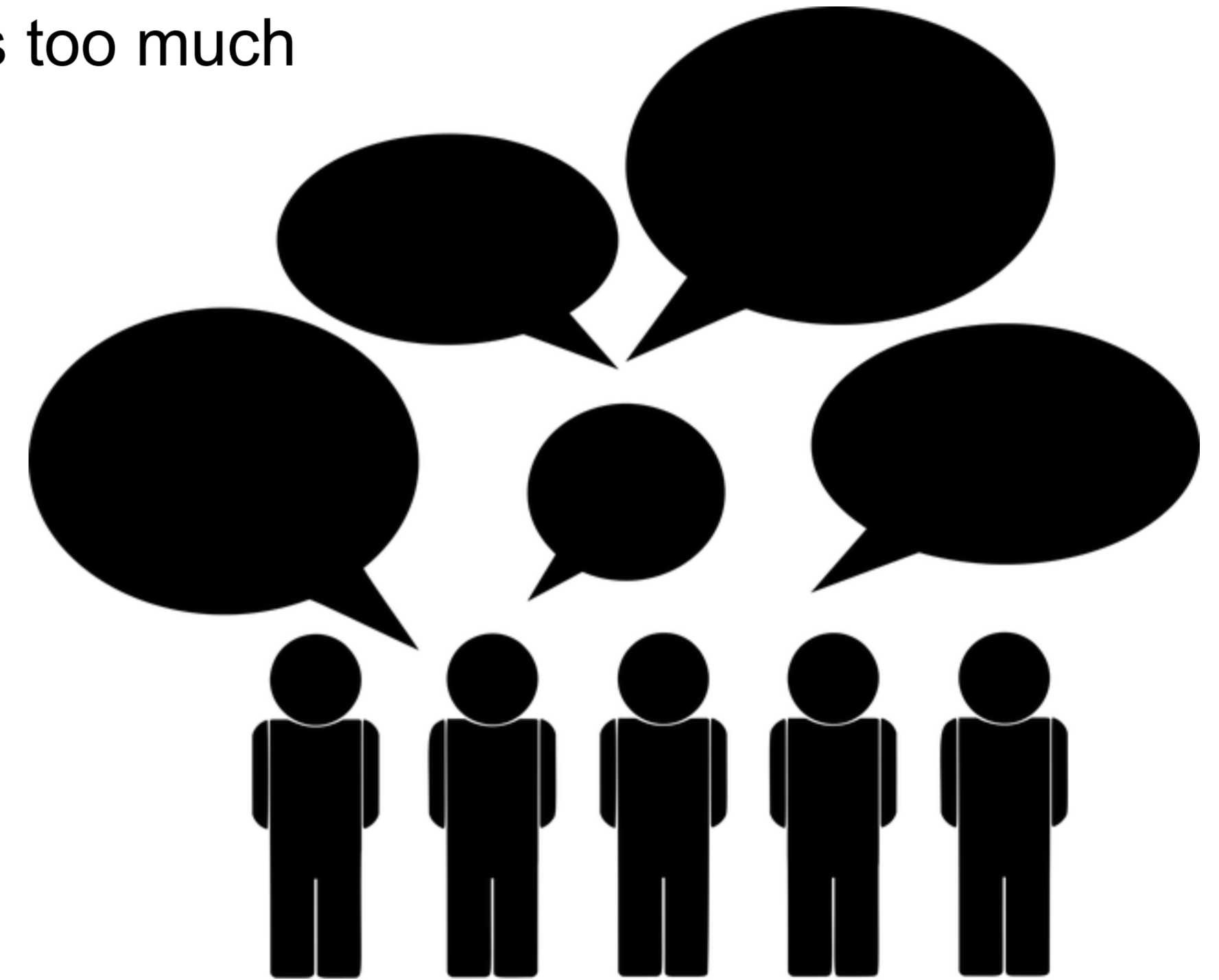
- All test users would be fine with that.
- 1 out of 5 would explicitly appreciate being sent out of the game to try out something in the browser.
- 2 out of 5 already tried out in their browser while playing the prototype.
- 2 out of 5 said that they wouldn't mind leaving the game if they were informed beforehand that this would happen.

Conclusion: leave it up to the players

# What else would they like to see in the game?

## What several test persons liked / requested

- more feedback, e. g. in the wimmelpicture: When are you done? When is the task solved?
- 4 out of 5 users liked the stars animation, for one person this was too much
- “swell mix of subject-specific content and superhero stuff”
- that there was no entry test at the beginning of the game
- 2 out of 5 would suggest some kind of “Ice breaker” at the beginning of the game (quick success)
- 2 out of 5 appreciated that there was no gender bias in the characters / story
- the choice of the characters and how they were presented

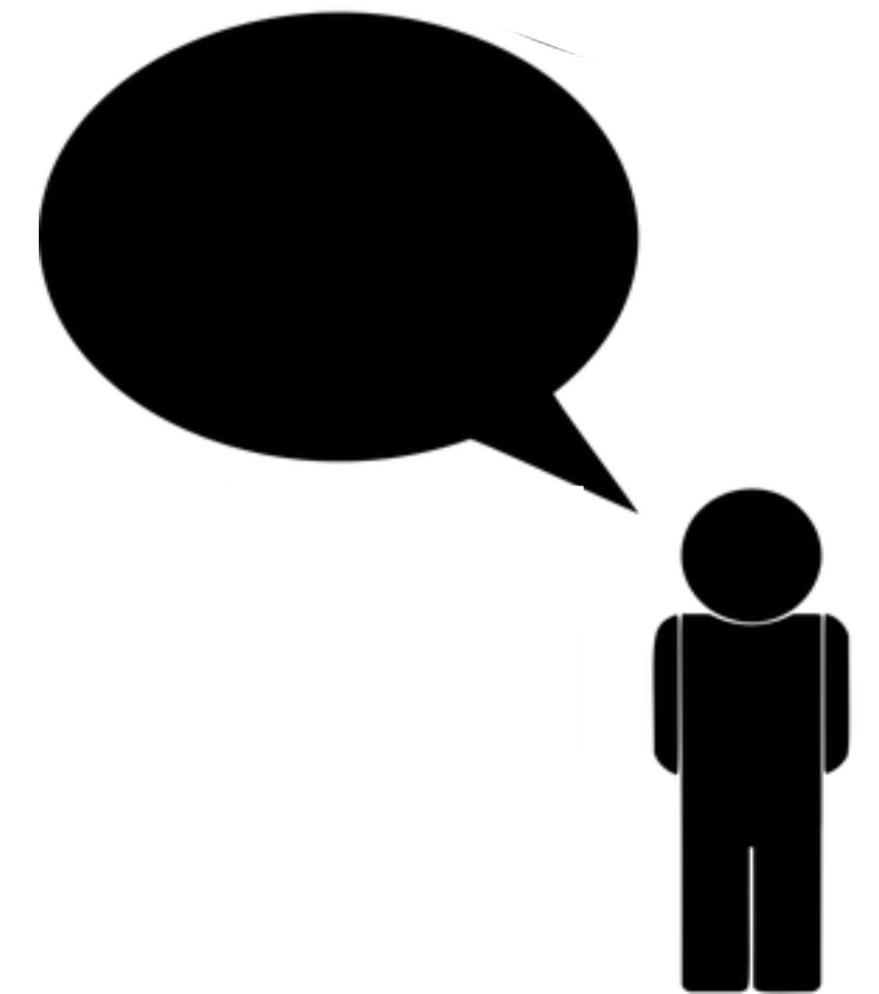


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# What else would they like to see in the game?

## What only one out of five test persons liked / requested

- That the game was realized by using characters (guiding figures)
- “That the dialogues between the characters are short and you can click through well.”
- “That the dialogues are easy, too, so you don`t feel stupid e. g. because of too much technical terminology.”
- That there`s no pressure, digital skills is a shameful topic: 'It's been explained to me three times and I still don't know!'"
- One tester emphasized that she would really like to gain a crown (game element).
- That it (the game) went to content relatively quickly.
- “Content and difficulty level is well chosen, even for people with different levels of digital skills but the subject-specific challenges in the game increased quite fast so you`ve got to read a bit more carefully.”
- Notebook functionality in the game (as a summary of own learning content, accessible during and after the game)



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# Conclusions

## **What are we going to change in the Serious Game?**

- Quick Win at the beginning
- (even more and faster) feedback to the participants

## **Gamification / a Serious Game can unfold all it`s power if...**

- the user actually wants to learn the presented content (and just needs a little support with keeping on track)
- if the content is relevant to him / her
- s/he has success experiences throughout the game

# Questions?

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