

Gameanalyse

What is game analysis?

Analyse

"An analysis (...) is a systematic investigation in which the object is broken down into its components. These elements are recorded on the basis of criteria and then structured, examined and evaluated."

Gameanalyse

Games **systematisch** und auf Grundlage von spezifischen **Kategorien** in ihre Bestandteile zerlegen

Vorgehen

1. Konkrete **Fragestellungen**
2. Passende **Kategorien**
3. Ergebnisse **ordnen, untersuchen und auswerten**

What can be analyzed?

 x39  x08  x14

Char. Design

003526630

⌚ 452



Multiplayer

Playtime

🕒 64

Communities

Items & Upgrades

UI Design

Level of difficulty

Story Narrative

Immersion

World Design

Norms & Values

Feeling of Flow

Art Style

Level Design

Game Loops

Meaning

Enemy types

GP mechanics

Performance

Game analysis approaches

Recherchiert eine Quelle zu Gameanalyse-Ansätzen

- Wie seid ihr mit der Recherche klargekommen?
- Wo habt ihr gesucht und welche Keywords habt ihr verwendet?
- Was sagt uns die Quelle über Methoden und Ansätze zur Spielanalyse?

MDA Framework



Mechanics describes the particular components of the game, at the level of data representation and algorithms.

Dynamics describes the run-time behavior of the mechanics acting on player inputs and each others' outputs over time.

Aesthetics describes the desirable emotional responses evoked in the player, when she interacts with the game system.

„...bridge the gap between
game design and development,
game criticism, and technical
game research.“

What **dynamics** emerge out of
which **mechanics**?

Basic Needs in Games Scale

Analyse von Motivation und Spielerlebnis (positiv / negativ)

Zufriedenheit / -Frustration

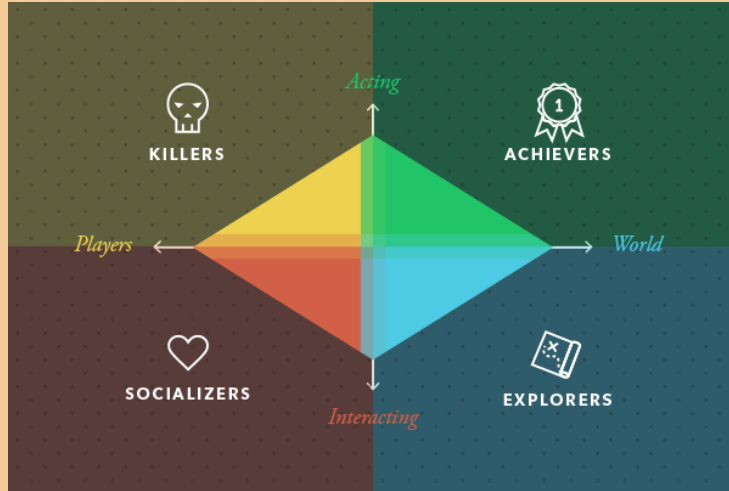
- Autonomie
- Kompetenz
- Soziale Eingebundenheit

Die Basic Needs in Games Scale (BANGS):

1. I could make choices regarding how to play [X].
2. I could play [X] in the way I wanted.
3. I could direct my own play experience in [X].
4. I felt forced to take certain actions in [X].
5. Many actions in [X] were boring.
6. I often found myself wishing I could do something else within [X].
7. I felt I was getting better at playing [X].
8. I felt that I made progress while playing [X].
9. I felt a sense of achievement while playing [X].
10. I often felt that I lacked the skills necessary for [X].
11. I kept failing to accomplish what I wanted to while playing [X].
12. I felt disappointed with my performance in [X].
13. I felt I formed relationships with other players and/or characters in [X].
14. Engaging with [X], I felt a connection to others, virtual or real.
15. I felt that other players and/or characters in [X] cared about me.
16. Interactions with other players and/or characters in [X] felt toxic to me.
17. The community or virtual world in [X] made me feel unwelcome.
18. Others in [X] were unfriendly towards me.

Ballou, N., Denisova, A., Ryan, R., Rigby, C. S. & Deterding, S. (2024). The Basic Needs in Games Scale (BANGS): A new tool for investigating positive and negative video game experiences. *International Journal Of Human-Computer Studies*, 188, 103289. <https://doi.org/10.1016/j.ijhcs.2024.103289>

Player Types



Erweiterung um Motivation

- **Achievers** (Planner / Opportunist)
- **Explorers** (Scientist / Hacker)
- **Socializers** (Networker / Friend)
- **Killers** (Politician / Griefer)

Bartle, R. (2003). Designing Virtual Worlds (S. 768). New Riders.

GAMER MOTIVATION MODEL



Action "Boom!"	Social "Let's Play Together"	Mastery "Let Me Think"	Achievement "I Want More"	Immersion "Once Upon a Time"	Creativity "What If?"
Destruction Guns. Explosives. Chaos. Mayhem.	Competition Duels. Matches. High on Ranking.	Challenge Practice. High Difficulty. Challenges.	Completion Get All Collectibles. Complete All Missions.	Fantasy Being someone else, somewhere else.	Design Expression. Customization.
Excitement Fast-Paced. Action. Surprises. Thrills.	Community Being on Team. Chatting. Interacting.	Strategy Thinking Ahead. Making Decisions.	Power Powerful Character. Powerful Equipment.	Story Elaborate plots. Interesting characters.	Discovery Explore. Tinker. Experiment.

Quantic Foundry. (2025, 15. Mai). Gamer Motivation Insight Report. Quantic Foundry. <https://quanticfoundry.com/insight-report/#>

The Digital Game Analysis Protocol (DiGAP)

Rationale & Objectives	1. Rationale 2. Objective(s) 3. Research question(s) 4. Hypotheses
Researcher background	5. Orientation/Motivation 6. Prior game experience 7. Socio-demographic background 8. Multiple researchers
Game selection	9. Chosen game(s) 10. Rationale for game selection 11. Sample type
Boundaries	12. Date and place 13. Software version 14. Platform 15. Difficulty level 16. Mode(s) played 17. Engagement level 18. Mode of completion 19. In-game choices 20. Unitizing 21. Use of meta-ludic texts
Analysis approach	22. Qualitative or quantitative 23. Analytical framework 24. Analyzed dimensions 25. Analysis example
Coding techniques & Data extraction	26. Type of data 27. Coding method 28. Method of data extraction 29. Software for data extraction
Reporting & Transparency	30. Inter-coder reliability 31. Open science transparency

1. Rationale & Objectives

Warum wird das Game analysiert?

Welche Forschungsfragen und eventuell Hypothesen liegen zugrunde?

2. Researcher Background

Da Forschende die Games aktiv spielen müssen, beeinflussen sie automatisch den analysierten Inhalt. Erfasst werden eigene Spielerfahrungen, Motivationen und persönlicher Hintergrund.

3. Game Selection

Welche Games werden untersucht und warum? Welche Art von Auswahl liegt vor?

4. Boundaries

Klare Grenzen setzen. Datum, Software-Version, Plattform, Schwierigkeitsgrad, gespielte Modi und getroffene Entscheidungen im Spiel.

5. Analysis Approach

Qualitativer oder quantitativer Ansatz? Welches Framework?

Welche Aspekte des Games werden untersucht? (Z.B. Story, Mechaniken, Grafik)

6. Coding Techniques & Data Extraction

Welche Daten werden gesammelt? (Z.B. Videos, Screenshots, Notizen)

Wie werden diese strukturiert und ausgewertet?

7. Reporting & Transparency

Wie werden Übereinstimmungen zwischen Forschenden gemessen?

Wie werden Daten transparent veröffentlicht?

Daneels, R., Denoo, M., Vandewalle, A., Dupont, B., & Malliet, S. (2022). The Digital Game Analysis Protocol (DiGAP): Introducing a guide for reflexive and transparent game analyses. *Game Studies*, 22(2)

Analysis approaches: Gameplay, Time & Information

Formal Analysis of Gameplay – Lankoski & Björk (23 ff.)

- Games als Artefakte (System)
- Spielregeln (rules)
- Spielmechaniken
- Ziele, Zustände, Ressourcen
- konstitutive Regeln
- operationale Regeln
- Methode: wiederholtes eigenes Spielen

Analyzing Time in Videogames – Zagal & Mateas (S. 37 ff.)

- Zeitstrukturen
- Echtzeit, Spielzeit, narrative Zeit
- Pacing, Spannung, Flow
- Wie Games Zeit manipulieren

Viewpoint of Information – Sköld, Adams, Harviainen, Huvila (S. 57 ff.)

- Informationsanalyse
- UI-Design, Feedback, Symbolik
- Beeinflussung der Spielerfahrung
- Perfekte, imperfekte, asymmetrische Information

Spatial analysis

Analyzing Spatial User Behavior using Geographic Information Systems (GIS)

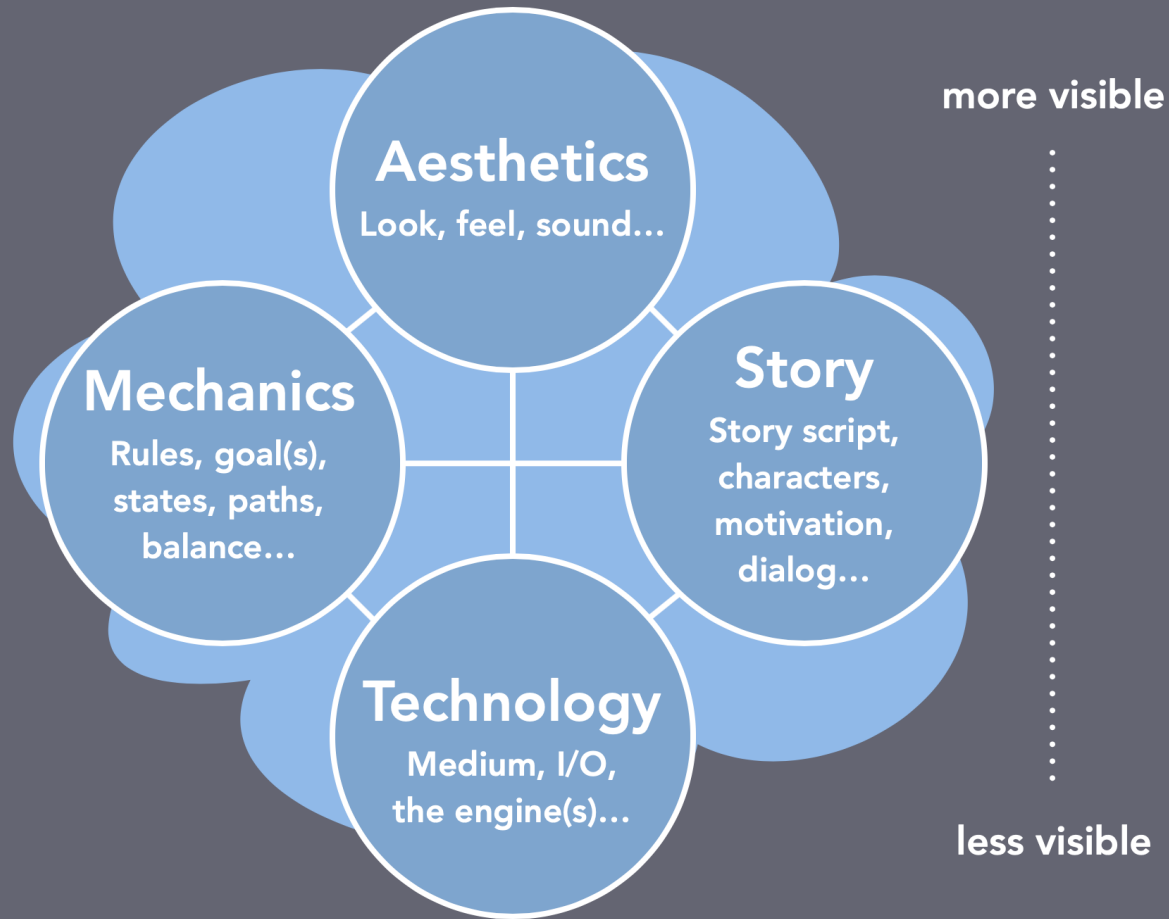
- UX Research -> Visualize and interpret player behavior
- Analyse von Navigation, Hotspots, Problemzonen, Risikobereichen
- Heatmaps and spatial overlays

Figure 4: Grid-based heatmap of the locations of player death in the Valaskjalf map unit of *Tomb Raider: Underworld*. Scale ranges from light green (low numbers of death) to red (high numbers of death). Locations with no color have zero deaths. Dark red corresponds to 3050 deaths occurring within a single grid cell. Heatmap created in ArcGIS. Four of the most lethal areas are marked with red circles.

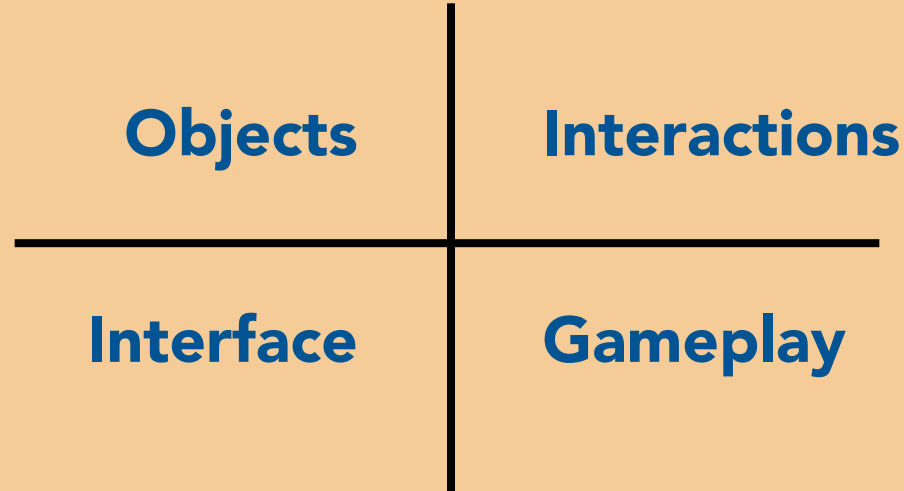


Drachen, A., & Canossa, A. (2009). Analyzing Spatial User Behavior in Computer Games using Geographic Information Systems

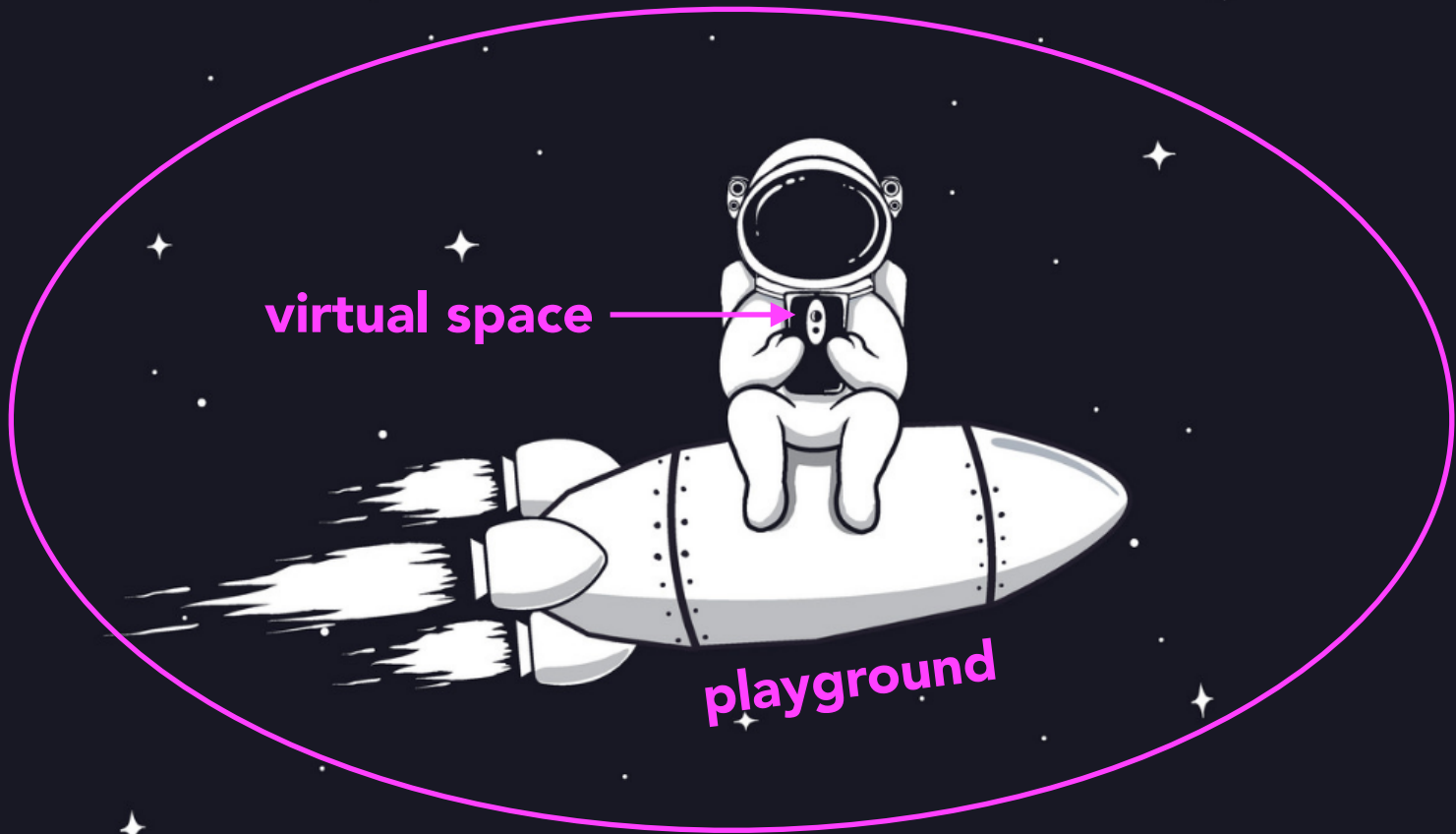
Holistic analysis



4 Dimensions



Consalvo, M., Dutton N. (2006). Game analysis: Developing a methodological toolkit for the qualitative study of games. *Game Studies Journal* 6 (1)



Seven different layers

1. (Hardware)
2. (Program code)
3. Functionality (nature of the game)
4. **Gameplay** (game structure)
5. **Meaning** (semantic)
6. **Referentiality** (comparing to other)
7. **Socio-culture** (interaction, target groups, utilization)

3 dimensions & games research perspectives

- | | |
|---|--|
| A. Gameplay: players' actions, strategies and motives | (sociological, ethnological, psychological etc.) |
| B. Game-structure: rules, including simulation rules | (Game Design, business, law, computer science, AI) |
| C. Game-world: fictional content, level design, textures | (Art, history, cultural / media studies, economics) |

Focused analysis

Example: Focus on **gender roles**

What possibilities of development does a character have?

- **Avatar, Agent, Cast Char., Functional Char., Stage Char.**

Four layers of interpretation

- **Character surface**
- **Narration**
- **Gameplay**
- **Game world**

Meier, M-L. (2022). "The hardest battles are fought in the mind": The role of women in Viking Age games. In: Draycott, J. (Hrsg.): Women in Historical and Archaeological Video Games. Video Games and the Humanities, Bd. 9. de Gruyter. S. 75-100

Vorgehen

Methodisches Vorgehen

A. Spezifische Fragen (Forschungsinteresse)

B. Analysekategorien identifizieren

- Aus Literatur
- Eigene Überlegungen
- Aus empirischen Daten

-> Immer in Bezug auf Forschungsfrage

Data collection

- Observation / Logging
- Research (Fandom, Wikis etc.)
- Play yourself

Game playing as a method

„Playing games is an essential part of being a scholar in game studies, but it should be combined with a selective and thoughtful use of other sources for information, such as observing others play or interviewing players.“

Analytical play: 7 layer in engagement

1. **Superficial play** (get a feel & quick classification)
2. **Light play** (learns enough to make meaningful progress)
3. **Partial completion** (reach subgoal)
4. **Total completion** (if possible)
5. **Repeated play** &
6. **Expert play** (become an expert)
7. **Innovative play** (invent new strategies)



DEAD & CELLS

Group exercise

A) **Identify** categories

B) **Game playing** as a method (analytical play)

1. **Superficial play** (get a feel & quick classification)
2. **Light play** (learns enough to make meaningful progress)
3. **Partial completion** (reach subgoal)

Short discussion

- A) How did you get along overall?
- B) What was your **working question**?
- C) **Which categories** did you use exactly?
- D) What are your **findings**?

Comparative analysis



Comparative analysis

Comparison of two or more games

A. **Same** reference point

B. **Variety** of characteristics
(contrast)



And for the next class

(group presentation, 10min)

-> Comparative analysis of 2 games

A) Why are the games important for your research?

B) Which categories of analysis did you choose and why?

C) Findings in relation to your research topic

Eure Quellen

- Hunicke, R., LeBlanc, M., & Zubek, R. (2004). MDA: A formal approach to game design and game research. AAAI Workshop – Technical Report, 1
- Ballou, N., Denisova, A., Ryan, R., Rigby, C. S. & Deterding, S. (2024). The Basic Needs in Games Scale (BANGS): A new tool for investigating positive and negative video game experiences. International Journal Of Human-Computer Studies, 188, 103289. <https://doi.org/10.1016/j.ijhcs.2024.103289>
- Bartle, R. (2003). Designing Virtual Worlds (S. 768). New Riders.
- Quantic Foundry. (2025, 15. Mai). Gamer Motivation Insight Report. Quantic Foundry. <https://quanticfoundry.com/insight-report/#>
- Daneels, R., Denoo, M., Vandewalle, A., Dupont, B., & Malliet, S. (2022). The Digital Game Analysis Protocol (DiGAP): Introducing a guide for reflexive and transparent game analyses. Game Studies, 22(2). [hPps://gamestudies.org/2202/arRcles/gap_daneels_denoo_vandewalle_dupont_malliet](https://gamestudies.org/2202/arRcles/gap_daneels_denoo_vandewalle_dupont_malliet)
- Lankoski, P., & Bjork, S. (Hrsg.). (2015). Game research methods: An overview. ETC Press. <https://doi.org/10.1184/R1/6686765>
- Drachen, A., & Canossa, A. (2009). Analyzing Spatial User Behavior in Computer Games using Geographic Information Systems (Pre-print). In MindTrek 2009—13th International Academic MindTrek Conference: Everyday Life in the Ubiquitous Era. <https://doi.org/10.1145/1621841.1621875>

Further Reading

- Fernández-Vara, C. (2015). Introduction to Game Analysis. Routledge
- Aarseth, E. (2003). Playing Research: Methodological Approaches to Game Analysis. Proceedings of DAC 2003. RMIT University
- Konzack, L. (2002). Computer Game Criticism. A Method for Computer Game Analysis. Computer Games and Digital Cultures Conference 2002: Tampere, Finland
- Consalvo, M., Dutton N. (2006). Game analysis: Developing a methodological toolkit for the qualitative study of games. Game Studies Journal 6 (1)
- Meier, M-L. (2022). "The hardest battles are fought in the mind": The role of women in Viking Age games. In: Draycott, J. (Hrsg.): Women in Historical and Archaeological Video Games. Video Games and the Humanities, Bd. 9. de Gruyter. S. 75-100