

R E I M A G I N E

Evaluating GameFlow in a Multiplayer Online Strategy Game Under Development

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GameFlow

A model of player enjoyment in video games

38 criteria, 8 elements

Maps to Csikszentmihalyi's concept of flow

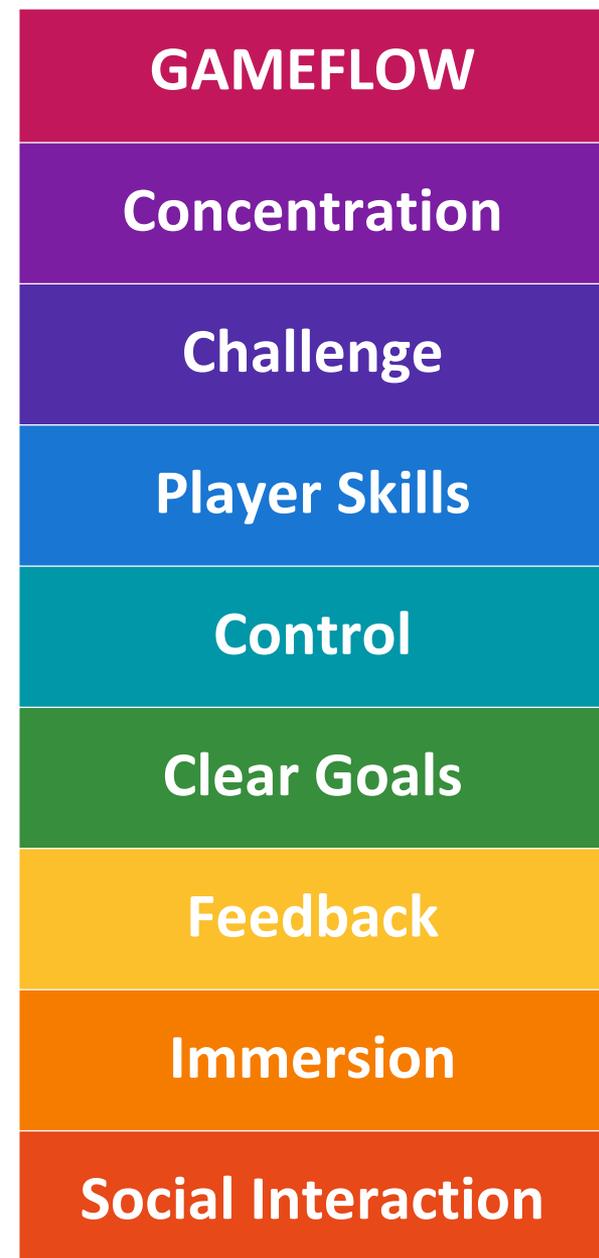
Criteria derived from games UX/PX literature

Heuristics for design and evaluation

Widely cited (>2000) and used (>200)

Games and game-like experiences

Penelope Sweetser and Peta Wyeth. 2005. GameFlow: a model for evaluating player enjoyment in games. *Comput. Entertain.* 3, 3 (July 2005), 24 pages.
<https://doi.org/10.1145/1077246.1077253>



GAMEFLOW

Concentration (6 criteria)

Games should require concentration and the player should be able to concentrate on the game

Challenge (4 criteria)

Games should be sufficiently challenging and match the player's skill level

Player Skills (7 criteria)

Games must support player skill development and mastery

Control (6 criteria)

Players should feel a sense of control over their actions in the game

Clear Goals (2 criteria)

Games should provide the player with clear goals at appropriate times

Feedback (3 criteria)

Players must receive appropriate feedback at appropriate times

Immersion (5 criteria)

Players should experience deep but effortless involvement in the game

Social Interaction (3 criteria)

Games should support and create opportunities for social interaction

A Story



GameFlow
(2005)

Industry
(2005-10)

QUT
(2011-3)

Indie
(2014-7)

*

ANU
(2018-?)



*(Australian Senate)

Why

Increasing number of player experience measures

Where does GameFlow fit in? How can it be most useful?

OzCHI 2019 - GameFlow compared to PX measures (PENS, FSS-2)

Previous research

- Single player experience

- Completed and shipped games

- Expert reviews by PX researchers

Multiplayer, under development, diverse set of stakeholders

Penny Sweetser and Daniel Johnson. 2019. GameFlow and Player Experience Measures: An Initial Comparison of Conceptual Constructs. In *Proceedings of 31 st Australian Conference on Human-Computer-Interaction (OZCHI'19)*. ACM, New York, NY, USA, 5 pages. <https://doi.org/10.1145/3369457.3369486>

Method

Expert reviews using GameFlow heuristics

- 12 different stakeholders (researchers, journalists, developer, players)

Game evaluated was an indie game in development (Neptune's Pride 2)

Each reviewer assigned numerical rating (1-5) to each criteria or N/A

- Also provided written qualitative comments to explain rating

- Also asked to comment on the GameFlow criteria

Aggregated and presented reviews to the developer

- Including comparison to their own review

Interviewed developer to gain their insights on process and reviews

Neptune's Pride 2: Triton

NP is an abstract science fiction strategy game

4x (explore, expand, exploit, exterminate) genre

Heavily relies on MP experience - competition and cooperation

There can be only one

NP (2010), awarded Screen Australia funding for NP2 in 2013



Reviewers

Sourced based on familiarity with NP

71% completed >20 games of NP

All completed at least 1 game of NP2 beta

Expertise in their relevant areas

Journalists who had reviewed NP

PX and game design researchers

12 different stakeholders used the GameFlow criteria to evaluate Neptune's Pride 2: Triton



2 Journalists



2 Researchers



7 Players



1 Developer

GameFlow Review Results

Summarised results for developer

Mean rating for each element/criteria, developer vs others

Summary of feedback and recommendations

Breakdown by criteria and full analysis available in paper

<i>GameFlow Element</i>	<i>Mean</i>	<i>Dev</i>	<i>Oth</i>	<i>Diff</i>
<i>Concentration</i>	4.0	4.5	3.9	-0.6
<i>Challenge</i>	2.6	1.5	2.7	1.2
<i>Player Skills</i>	3.4	3.4	3.4	0.0
<i>Control</i>	4.0	4.2	4.0	-0.2
<i>Clear Goals</i>	4.1	3.0	4.2	1.2
<i>Feedback</i>	3.8	5.0	3.8	-1.2
<i>Immersion</i>	3.4	3.8	3.4	-0.4
<i>Social Interaction</i>	4.1	4.3	4.1	-0.2
Overall	3.7	3.7	3.7	0.0

GameFlow in NP, MP, and beyond

Learn more about MP games and applying GameFlow to MP games

Applying GameFlow during development and as part of dev process

Use of GameFlow by non-researchers - developers, journalists, players

Improving GameFlow and finding its place as a tool

GameFlow Recommendations

RECOMMENDATIONS

Criteria

- Phrase as statements about the game
- Simplify to one statement per criteria
- Clarify that not all criteria apply to all games
- Consistently refer to player, game, or experience



Language

- Update and generalise for all games
- Make unambiguous and clear for all users



Immersion

- Remove or reconceptualise Immersion



GameFlow Insights

Developer unsure whether criteria need to be met by the game design or by the game experience more broadly (e.g., challenge from other players)

What the “affords” versus what the game “provides”

INSIGHTS

Developer

Concept of the game and the game’s boundaries can be different to the player



Heuristics

Important to consider the language and format for non-experts to use as a tool



What's Next

We want to support developers/researchers in inquiring into why/how

We don't want to create another PX measure

Heuristics allow depth of inquiry and draw on expertise of user

GameFlow needs some changes and updating

We want to work with more developers

We want to make a robust tool that has a place in research and dev

Questions?

REIMAGINE