

THE TRICK IS TO STAY BEHIND?: Defining and Exploring the Design Space of Player Balancing Mechanics

David Gonçalves, Daniel Barros, Pedro Pais, João Guerreiro,
Tiago Guerreiro, André Rodrigues

LASIGE, Faculdade de Ciências, Universidade de Lisboa, Portugal

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human-
-computer
interaction



You're playing a competitive video game with your best friend.

But your friend has less experience and ends up losing every match.

You feel **bored and unchallenged** while your friend simply feels **frustrated and powerless**.

THAT'S NO FUN!

PLAYER BALANCING MECHANICS

To accommodate disparate skill levels, some games present mechanics that give **advantages to low-performing players** or provide additional **obstacles to high-performing players**.

Examples:



Aim assist in shooting games

Automatically adjusts the aim for players who use a controller and struggle with aiming.



Rubberbanding in racing games

Keeps players behind near the front of the race by increasing their speed and power-ups.

How are these perceived by players and how do they affect the experience?

Research shows it **depends on the design decisions behind the mechanic**, such as timing (e.g., when it activates) and visibility of the effect.

To comprehensively understand the impact of these, we first need to develop a shared understanding of the **design possibilities within this space**.

We make a **two-fold contribution**:

- 1 The **design space** of player balancing mechanics
- 2 **User study** focused on the impact of **TARGETING DIRECTION** and **EFFECT DEPENDENCY ON SKILL**.

1) DESIGN SPACE OF PLAYER BALANCING

We built a design space that captures the **range of possible approaches** when designing a player balancing mechanic.

Our procedure consisted of:

Reviewing research + Analyzing balancing in commercial games + Researchers' expertise

It consists of various dimensions within six main categories:

DETERMINATION
TIMING
TARGETING
EFFECT
FEEDBACK
INFORMATION

2) USER STUDY

Eight pairs of participants Questionnaires + Interviews

We focused on the impact of two design dimensions:

TARGETING DIRECTION
EFFECT DEPENDENCY ON SKILL
 Which side is affected by the balancing mechanic. How much the effect is dependent on the skill of the players.

Assisting OR Hindering SPECTRUM FROM Independent TO Dependent

We developed a competitive racing game with **seven player balancing mechanics**, manipulating these two dimensions.



We outline implications under three core concepts:

- Sense of merit
- Sense of agency
- Obtrusiveness



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