GamefulBits

Classifying User Preferences for Groups of Gameful Design Elements

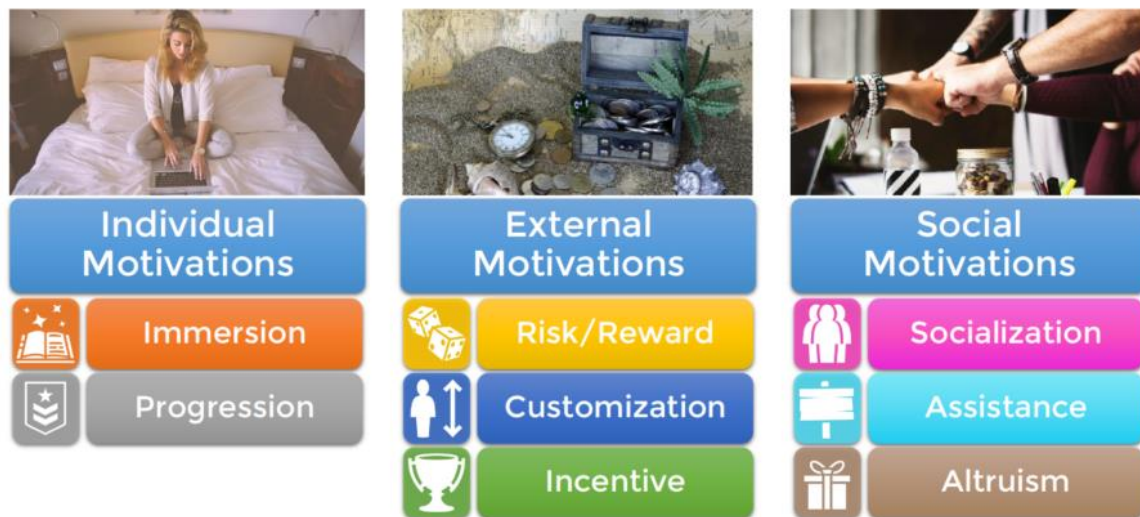## What are the Groups of Gameful Design Elements?

A classification of user preferences for different gameful design elements, which are the building blocks of gameful apps. For example, using this classification, we can tell if someone is more likely to enjoy social competition, a character progression tree, or receiving rewards, among other elements.

How was this classification developed?

Through a research study conducted by the HCI Games Group and led by Gustavo Tondello. We asked participants how much they enjoy each gameful design element when interacting with a gameful application. Then, we conducted a factor analysis to group the design elements by user preferences. A factor analysis allows us to group elements that share the same characteristics; in this case, how much each participant enjoy them. This means that when a user likes an element from one group, they're also likely to enjoy the other elements from the same group.

What did the study conclude?

Our analysis identified nine eight groups of gameful design elements, which we further clustered into three high-level groups. This means that we can classify the kind of elements that users enjoy in gameful applications in three high-level types, further divided into eight groups.

Groups of Gameful Design Elements

Individual Motivations

This group represents the user's interest in their own experience with the system. It includes two groups of design elements: Immersion and Progression, which include elements aimed at supporting the user at the individual level so they can successfully achieve their goals.

Immersion: enables users to have a more engaging experience, to feel that they are part of something bigger than themselves. This group includes elements such as theme, narrative, story, and mystery box.

Progression: helps users track their completed steps and plan the next ones towards achieving their goals. This group includes elements such as levels, meaning, progress feedback, and learning.

External Motivations

This group represents the user's interest in earning external incentives and tailoring the system to them. It includes three groups of design elements: Incentive, Risk and Reward, and Customization.

Incentive: this group includes elements aimed at providing external incentives for carrying out the activities that make up part of the gameful system, such as badges, achievements, certificates, and rewards.

Risk and Reward: this group includes elements that allow the user to feel the thrill of winning, either by playing games of skill (like challenges or boss battles) or games of chance (like lotteries).

Customization: allows the user to make the system working in their favour, thus empowering the user to modify the external factors that influence their ability to achieve their goals. This includes elements like avatars, virtual economy, and points that can be exchanged by customization elements.

Social Motivations

This group represents the user's interest in relatedness and social interactions. It includes three groups of gameful design elements: Socialization, Altruism, and Assistance. They all include elements that allow users to interact with others while carrying out their activities in the gameful system.

Socialization: enables users to interact with each other, collaborate in carrying out their tasks, or compare themselves with others. It includes elements such as leaderboards, competition, and social networks.

Altruism: allows users to feel they are part of something meaningful and contribute to a worthy cause. It includes elements like knowledge sharing and gifting.

Assistance: allows users to receive aid from other users or from the system, thus, helping them alleviate any difficulty that they might experience in carrying out their tasks by themselves. It includes elements such as beginner's luck and signposting.

Questionnaire

If you want to survey the preferences of your users, you can use the following questionnaire. Ask the participants the following question.

Question: How much do you enjoy each one of the following elements when interacting with a gameful application?

Then, ask participants to score each element in the list below on a 5-point Likert scale (i.e., a scale with the options such as "Dislike it very much", "Dislike it a bit", "Neutral", "Like it a bit", "Like it very much" – feel free to customize the labels if you wish).

Do not list the group names, only the elements' names and descriptions. The group names are for your internal use, to calculate the score later.

Note: if you want to make your questionnaire shorter, you can use just the first three elements per group instead of four. This will result on a slightly lower reliability, but the difference is not very large.

Immersion

- **Mystery Box**: The system leaves some things unexplained and motivates me to seek the answers through curiosity.
- **Easter Eggs**: Finding surprise content deeply hidden inside the application or game's structure.
- **Theme**: The system is described by means of a real of fictional central theme.
- **Narrative or Story**: The system tells a story and lets me be part of the story through my actions and decisions.

Progression

- **Levels or Progression**: Being informed how much I have progressed in the system and how much I still can go to reach the top.
- **Meaning or Purpose:** Understanding that that my effort will fulfill a meaningful goal (real or virtual) or feeling I am part of something greater than myself.
- **Progress Feedback:** Having a clear understanding of how far I am and what I need to do to achieve the next level or complete the next achievement.
- **Learning:** Being invited to learn new skills that may be useful inside the system or in real life.

Incentive

- **Badges or Achievements:** Receiving recognition for accomplishing meaningful goals inside the application or game.
- **Certificates:** Receiving certificates for completing special challenges or achievements.
- **Collections:** Completing collections of items or achievements with special meaning in the application or game.
- **Rewards or Prizes:** Receiving rewards or prizes by completing specific tasks, goals, or achievements, or by progressing to specific levels.

Risk/Reward

- **Access:** Access to advanced system features is only available to users who have contributed or achieved more.
- **Lotteries or Chance:** Earning rewards based on mere lucky or chance.
- **Boss Battles:** Test everything I have learned and mastered in one epic challenge. Boss battles are often more difficult than regular challenges and may require a group to overcome.
- **Challenges:** Tackling difficult tasks to test my knowledge or skills.

Customization

- **Avatars:** Being represented in the game or system by a customizable digital character (an avatar).
- **Customization:** Customizing my experience and how I present myself to others.
- **Points:** Receiving points or experience for completing specific tasks. Points may be used to redeem rewards or towards progression.
- **Virtual Economy:** Earning virtual currency and using it to buy virtual or real goods.

Socialization

- **Social Comparison:** Comparing my performance with others and finding out how I rank among my friends or everyone else.
- **Leaderboards:** Comparing myself to others and show my status to others.
- **Social Competition:** Challenging and proving myself against others into specific tasks.
- **Social Networks:** Connecting with as many other users as I want through an accessible social network.

Altruism

- **Knowledge Sharing:** Sharing my knowledge with other users in forums, questions and answers, or likewise features.
- **Gifting:** Giving gifts or sharing items with other users to help them achieve their goals or to express our relationships.
- **Innovation Platforms:** Being able to suggest and discuss new features to the application or game.
- **Development Tools:** Developing add-ons or plugins to add new features or content to the application or game.

Assistance

- **Glowing Choice:** If I am stuck too long on a problem, the system provides free hints or clues to help me move forward.
- **Beginner's Luck:** I am helped to achieve a high rate of success in the first few tasks or quests.
- **Signposting:** Just-in-time cues show me the next possible actions or paths to follow.
- **Anchor Juxtaposition:** Just-in-time cues show me the next possible actions or paths to follow.

Scoring

Score each answer on a scale from 1 to 5, then calculate the average score for each one of the groups (for example, the score for Immersion is the average of the participant's answers to Mystery Box, Easter Eggs, Theme, Narrative or Story). An average score of 3 is neutral. Lower scores mean a dislike for elements in the group, while higher scores mean a preference for them.

Citing this Research

If you use this questionnaire in your research project, you must cite our original work:

Gustavo F. Tondello, Alberto Mora, and Lennart E. Nacke. 2017. Elements of Gameful Design Emerging from User Preferences. In *Proceedings of the Annual Symposium on Computer-Human Interaction in Play (CHI PLAY '17)*. Association for Computing Machinery, New York, NY, USA, 129–142. DOI:https://doi.org/10.1145/3116595.3116627

Additional Information

For a short summary about the Groups of Gameful Design Elements, with more details than this document, you can check the three-part post series on the Gameful Bits blog:

1. Part 1
2. Part 2
3. Part 3

For the scientific details, please read the original CHI PLAY '17 paper: Elements of Gameful Design Emerging from User Preferences.