

# Game Research, Measuring Gaming Preferences

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## ABSTRACT

The development and validation of tools and measurements for gaming experiences is an ongoing challenge for game studies researcher. This paper describes a questionnaire that collects information on fine-grained gaming preferences across genres. The data is analyzed quantitatively. Results obtained from this tool point out to what specific aspects of games are preferred.

## Categories and Subject Descriptors

K.8.0 [Personal Computing]: General – *Games*.

## General Terms

Measurement, Design, Human Factors, Standardization, Theory.

## Keywords

game preference, game design, game element, genre, research tool, questionnaire.

## 1. INTRODUCTION

Game research works dealing with gameplay experiences have been concerned about defining variables into operationalized concepts in order to be able to standardize their findings. For instance, concepts as flow and immersion have been analyzed by translating them into galvanic skin response, electroencephalography, heart rate and eye tracking, and by employing subjective measures, such as oral reports [9]. However, measuring gaming phenomena still lacks measurements and tools that are agreed by the academic community [7], partially due to the complex nature of the gaming experience, and the different methodologies employed.

The main concepts studied in works focused on gameplay experiences are: flow [6], immersion [9], play styles [5], emotions [8], and fun [12].

The vast majority of researchers have analyzed the above mentioned aspect of the gameplay experience on a particular genre at a time. For instance, Nacke and Lindley [9] have worked on First-Person Shooters (FPS), whereas Tychsen et. al. [11] focused on Role-Playing Games (RPG).

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The present work aims to gather data on gaming preferences across genres. A questionnaire is proposed for data collection which allows quantitative analysis. The goal of this tool is to understand at a granular level what aspects of the game are usually enjoyed by certain people. This kind of information would help to tailor games for a targeted audience.

## 2. PROPOSED QUESTIONNAIRE

### 2.1 Foundations

The questions asked to gamers should be worded in a familiar way to them in order to avoid double meanings, confusion, and misinterpretation. At the same time, the answers to those questions should provide meaningful information. For these reasons, the work of Rollings and Adams on game design [10] has been selected as the foundational source for the construction of the questionnaire. These authors who are experienced game designers provide detailed descriptions of games genres.

### 2.2 Game Genre versus Game Element

Game genres are the most used labels for identifying game taxonomy. When gamers discuss about games they refer to them by genre or by direct title comparison. For instance, stating that Command & Conquer 3 [1] is a Real-Time Strategy game (RTS) like StarCraft [2]. Bateman and Boon [5] make an extended analysis of game genre classification and its relationship to play styles. Although game genres change through time, and different authors have different classifications, their usefulness resides in summarizing some expected characteristics of a game. However, it seems insufficient to identify game preferences by just referring to a genre without further nuance on the specific aspects. Hence, a granularity level has to be introduced. Every game genre described by Rollings and Adams [10][4] was analyzed, and game elements (understood as those that they mentioned as specific characteristic or aspects for each genre) were identified. At the same time, some new game elements were introduced in order to update the list; for example, 'rhythm' being an integral part of the gameplay like in Guitar Hero [3]. Another adjustment done was a slight modification to the enumeration of genres.

A total of 50 game elements and 7 genres (some of them with subgenres) were identified.

### 2.3 The Matrix

All game element and genre information was condensed into a matrix. This table has game elements in rows and genres in columns. Some game elements belong to more than one genre. Those cells where an element intersects with the genre it belongs are checked and a relative weight is given. There are three possible weights (low, medium and high) according to how

representative that element is to the genre. Some examples of game elements are: 'moving the character really fast' belongs to the action genre (including its 3 subgenres shooting, no-shooting, and fighting) and it also belongs to the Sport genre. 'Big and complex worlds' is associated to Strategy games but only to the Based-Turn subgenre, to the RPG and Adventure genre.

Some genres have more game elements than others. This fact plus the weighting reveal different total values for each genre. This diversification is welcome since it allows flexibility, it will make possible to continue updating the matrix with future changes. For instance, by incorporating a new game element or a new genre if a new trend in the market appears without infringing the tally achieved so far.

The other advantage of this model is that the importance is on the game element. A game genre is a cluster of game elements, it is the label to quickly identify types of games. But it is the game element the information to be gathered because it is the one that captures the details of what is preferred about games.

## 2.4 Validation

The matrix was introduced to six professional game designers. They were interviewed, and asked to go over the table (while thinking aloud) making all changes that they considered necessary, such as modifying the relationships between elements and genres, and its weighting. Key questions that led the interviews were if they would approve the matrix, and if they considered that any games in the current market could be analyzed with the matrix.

All of them agreed on approving the matrix. Suggested changes that were repeated by at least three game designers were introduced.

## 2.5 The Tool

The questionnaire was created based on the matrix. Every game element was reformulated into a sentence stated in first person expressing preference or enjoyment. For instance, "I prefer games where I can create buildings or structure" that is associated to Strategy (both Turn-Based and Real-Time subgenres), and to Simulation (only the Construction subgenre). Another example is "I enjoy leveling my character" which is linked to the RPG genre. Players answer if the statements are true or false. If true, the game element is computed and the weighting is accrued to the game genre associated to it.

Once the questionnaire is completed, it is possible to identify what are the preferences of a player with high detail. For example, a certain person prefers the RTS genre because specifically enjoys the game elements 'games with fast pace', 'game with maps to engage enemies', 'to conquer, explore, and commercialize', among other items.

## 3. CONCLUSION

This paper has described the underlying principles of a questionnaire to identify gaming preferences across genres at a granular level. A refine game genre analysis was proposed in order to recognize game elements, since games genres are categories that are not always agreed or further described. Game elements were identified as the ultimate part of a game, hence a

more detailed source of information. After the analysis, the game elements were clustered into genres with a certain weight.

This proposed approach for understanding gaming preferences introduces the advantage of specification and measurement in comparison to the "play styles" described by Bateman and Boon [5]. For instances, their type 2 (Manager) is driven by strategy challenge, however this involves multiple aspects, and some of them are even opposite to each other such as time management (turn based or real time). The work presented in this paper deals with such nuances.

By completing the questionnaire players reveal their gaming preferences across multiple genres. It is possible to know in detail what is attractive to the gamer, and if the questionnaire is issued to a target audience critical information can be gathered about their expectations on an enjoyable game.

## 4. REFERENCES

- [1] *Command & Conquer 3*. Electronic Arts, 2007.
- [2] *StarCraft*. Blizzard Entertainment, 1998.
- [3] *Guitar Hero*. Harmonix, Activision, 2005.
- [4] Adams, E. and Rollings, A. *Fundamentals of Game Design*. Prentice Hall, 2006.
- [5] Bateman, C. and Boon, R. *21st Century Game Design*. Charles River Media, 2005.
- [6] Cowley, B., Charles, D., Black, M., and Hickey, R. Toward an understanding of flow in video games. *Computers in Entertainment* 6, 2 (2008), 1-27.
- [7] Ijsselsteijn, W., van den Hoogen, W., and Klimmt, C. Measuring the Experience of Digital Game Enjoyment. *Proceedings of Measuring Behavior 2008*, (2008), 88-89.
- [8] Mandryk, R.L., Atkins, M.S., and Inkpen, K.M. A continuous and objective evaluation of emotional experience with interactive play environments. *Proceedings of the SIGCHI conference on Human Factors in computing systems*, ACM (2006), 1027-1036.
- [9] Nacke, L. and Lindley, C.A. Flow and immersion in first-person shooters: measuring the player's gameplay experience. *Proceedings of the 2008 Conference on Future Play: Research, Play, Share*, ACM (2008), 81-88.
- [10] Rollings, A. and Adams, E. *Andrew Rollings and Ernest Adams on Game Design*. New Riders Games, 2003.
- [11] Tychsen, A., Hitchens, M., Brolund, T., McIlwain, D., and Kavakli, M. Group play: determining factors on the gaming experience in multiplayer role-playing games. *Comput. Entertain.* 5, 4 (2007), 1-29.
- [12] Yannakakis, G. and Hallam, J. Towards Optimizing Entertainment in Computers Games. *Applied Artificial Intelligence* 21, 10 (2007), 933-971.