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# A Lexical Approach to Classifying Computer Games

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# A Lexical Approach to Classifying Computer Games

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## ABSTRACT

According to the Entertainment Software Association (2009), more than two-thirds of all American households play computer games. This vast audience is fueling the growth of the multi-billion dollar computer game industry and bringing jobs to communities across the nation. The rising popularity and proliferation of computer games call for systematic research on the design of computer games and their impact on game players. Systematic research on computer games inevitably requires an accurate description of the traits or characteristics of games. However, the traits of computer games haven't been well studied. Currently, computer games are often classified into genres by the computer game industry. Existing computer game genres, such as action adventure, simulation, single shooter, are designated by vendors and publishers. These genres are often general, overlapping, and not indicative of the complex traits of games and the hedonic information technologies. A few published studies on game genres are primarily based on qualitative analysis and are inconsistent with the views of different stakeholders -- game developers, game players, and game reviewers (Myers, 1990). The absence of a reliable game classification scheme could hinder research on hedonic information technologies and their interaction with users.

The objective of this study is to systematically investigate the essential traits for computer games and empirically validate the classification scheme. We propose to use a lexical approach to identify basic computer game traits. We argue that these computer game traits can be used to establish a more reliable and consistent classification scheme than the current game genres. Results from this study will help researchers investigate characteristics and designs of different types of games for educational as well as hedonic purposes.

The idea of using a lexical approach to obtain personality traits stems from the lexical hypothesis for personality research. The lexical hypothesis states that people will want to talk about personality traits that they view as having important consequences in their lives (Ashton, 2007). As a result, people will inevitably invent some words to describe those who exhibit high or low levels of these essential traits. Over long periods of time, words that describe important traits should become established in every language. In applying a lexical approach to

personality research, a researcher first systematically searches the dictionary of the language to be examined in order to obtain a list of personality-descriptive adjectives. After establishing this list of adjectives, the researcher excludes terms that are rarely used. The resulting list is then administered to a large sample of participants who are asked to provide self-ratings on these adjectives, indicating the extent to which each adjective describes their own personalities.

In our research project, we argue that computer game traits, like personality traits, can be characterized by a set of adjectives, and consistently rated by different game players and developers. Therefore, the lexical approach can be applied to studying computer game traits. To overcome the problems with current computer game genres, we propose a classification scheme for computer games. In this classification scheme, computer game traits are defined as differences among computer games consistently perceived by different game players at different times. These traits are independent of one another. They are reliable and specific, because they can be consistently observed by different players and at different times. We hypothesize that any given computer game can be described by a finite set of traits. When a group of computer game traits form a cluster, it is called a genre. Different genres may share same trait(s) but traits are distinctive and mutually exclusive.

This bottom-up classification scheme will enable game developers, players, and researchers to more accurately define the characteristics of a computer game and categorize it more consistently. We propose a lexical approach for identifying and clustering game traits.

The proposed research involves three phases: 1) creation of a list of game-descriptive adjectives, 2) online surveys to rate the adjectives, and 3) factor analyses to group the computer game traits.

## Keywords

genre, computer games, lexical approach, classification scheme, computer game traits, hedonic information technology.