

How to "Unboxing" Gamer Competencies: via Systematic Literature Reviews to get Analytical Framework is workable?

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Abstract: The long-term lack of structural resources in game studies has been a constant obstacle preventing researchers from academicizing video game community knowledge and gamer competence (Lin, 2011). The difficulty lies in the fact that one cannot make bricks without straw. Each paper on game research is like a piece of brick, without a sufficient amount of bricks, it is naturally difficult to produce a relatively large-scale structure. Such a predicament is interrelated and affect one another. Nowadays, a certain number of studies on gamer competence has accumulated in various fields such as neuroscience, communications, psychology, sociology, and pedagogy, however, a coordinate system for gamer competence in the academic circle of game studies has yet to be established. Based on this, this paper uses the document analysis method to propose a two-dimensional analytical framework for classifying current gamers' competencies. The results are presented according to a systematic review, which specifically points out the literature gaps and research method breakthroughs in each quadrant, providing a reference for relevant studies when choosing a research topic or focusing on a research path. To conclude, this paper uses a graphical framework to compile the current state of player competence at this stage, so that subsequent researchers can locate their own point of focus and relative position, making it easier for discussion and focus in their respective area of exploration.

Keywords: analytical framework; systematic review; gamer competence; video game

1. Introduction

What exactly are the abilities that players derive from their gaming experiences? It is still a black box. This central concern of the latest learning sciences has yet to be explained. This dilemma has been taken up by heavyweight researchers in learning sciences, such as John Seely Brown and James Paul Gee, who have called for researchers to inquire into the unknown abilities of the gaming generation (Thomas & Brown, 2011). In recent years, there have been single-point breakthroughs on unknown player competencies, but standalone sporadic findings can rarely be used as structural resources to reverse the dilemmas encountered in the field (Ulrich & Wright, 2010), and there are still very few systematic "unboxing" of gamer competence to improve the overall understanding.

Based on this, this study will follow up in Chapter 2 with a review of the relevant frameworks for gamer competence to date, seeking to improve the understanding of gamer competence with a systematic review, and subsequently propose an analytical framework and competency distribution in response to the urgency of deconstructing the aforementioned player knowledge and abilities.

2. Literature Review

Analytical frameworks with a focus on community significance can provide key indexing functions. Analytical frameworks are mostly found in review article/ review paper of extensive past literature on a specific topic, summarizing the current research development of the

theme in a graphical framework. Since an analytical framework already contains a large amount of compilation and analysis of past literature, it is extremely helpful for areas where structural resources are scarce, or those who want to get a quick and concise summary, or for researchers who are trying to figure out the direction of their research.

2.1 Current Status of the Analytical Framework of Gamer Competence

Structural or review studies of gamer competence are very rare. In the past, many studies have individually explored players' abilities developed through gaming, such as reaction speed, hand-eye coordination, reasoning, spatial exploration, information ability, and social cognition (Crawford, Medendorp, & Marotta, 2004), which are all valuable results that researchers have advanced individually to counter the negative image of "gaming" in the past and their attempt to capture the unknown abilities of players.

The existing analytical framework for gamer competence is rather lacking. There is not yet a mature classification method that can incorporate these unknown abilities into the analysis. After a systematic review, only one framework article, "Key Dimensions of Contemporary Video Game Literacy: Towards A Normative Model of the Competent Digital Gamer" by Klimmt (2009) in the Journal for Computer Game Culture was found.

This three-dimensional analytical framework cannot easily be used to categorize gamers' competencies. Klimmt (2009) proposes three dimensions of player competence, namely (1) resilience against effects of game content on automatic cognition, (2) the ability to cope with social affordances of multiplayer games, and (3) the ability to manage inertia processes in playing motivation that result in a perceived risk of losing investments of time and effort when deciding against playing. These three types of competences are quite meaningful. However, and most critically, these three dimensions cannot be used to categorize existing findings of gamer competence. Therefore, even though this framework paper is the only literature available on player competence, there is still room for improvement if it does not achieve the indexing effect that an analytical framework should have. The research question is: what is the analytical framework of gamer competence obtained through systematic review?

3. Research Methodology

The review was conducted in an objective and systematic manner. Document analysis is an effective method to understand the current status of player competence. This chapter is divided into: (1) data collection, (2) data analysis, and (3) establishment the framework.

3.1 Data Collection

Four methods were used to carry out literature search: online database, ancestry approach, descendancy approach (Cooper, 1982), and invisible college.

As for Web of Science, the search was based on the Web of Science Core Collection's Social Sciences Citation Index (SSCI), and 445 entries were obtained from Web of Science (Retrieved by 2021 summer). For the invisible college, four researchers with more than 10 years of experience in game research were consulted and provided supplemental information. A total of 14 additional articles were added by the ancestry approach, descendancy approach and invisible college. After 4 criteria used to filter the literature, a total of 107 articles met the criteria.

3.2 Data Analysis

The data analysis is based on the document analysis method. The author carefully read the recorded in detail in order to analyze the competencies of the players mentioned in various papers. Document analysis is a method of systematic research and analysis of document content to generate the context and meaning of the documents' content. The content is

explained and interpreted by extracting the theme, issue, or motif after analyzing the document (Denzin & Lincoln, 2005). For a more detailed categorization, this study adopted a phenomenologically sensitive expert coding for content assessment, called interpretative document analysis. In this paper, three checking methods used in qualitative research were applied to ensure the trustworthiness of the study. First, data triangulation: as mentioned above, three major databases and four data collection methods were used to collect data from multiple sources to help understand the overall phenomenon. This is a means to obtain evidence based on structural corroboration (Ary, Jacobs, & Sorensen, 2010). Second, descriptive validity: it refers to the factual accuracy of the researcher's interpretation in the text, without assembling or distorting what one has seen or heard (Maxwell, 2005). Third, code-recode/intra-rater agreement (Ary et al., 2010; Guba, 1981): Analysis in this paper was initially coded in January 2019 and recoded in January 2021, when comparing the analysis results of the two after the 2-year interval, the intra-rater agreement can be confirmed.

3.3 Selection and Establishment of the Analytical Framework

Establish the analytical framework dimensions that can be used to classify the present-day player competence. The researcher carefully reviewed 107 related studies in the Chinese and English literature on gamer competence and used the aforementioned notation method to delete the unused categories. Finally, two important attributes of player competence were identified, which can be effectively used to cover the current research development.

4. Research Results

Two important attributes of player competence were identified, which can be effectively used to cover the current research development. These are: the classic dimension of gamer culture “solo and team battle”, and the latest achievement in new media literacies, “consuming and prosuming”, and the most appropriate representation image was also chosen. The analysis results showed that the X-axis and Y-axis were plotted as continuous axes, and the relative positions of gamer competencies in video games discussed in the literature were placed respectively, and Figure 1 in the following was produced.

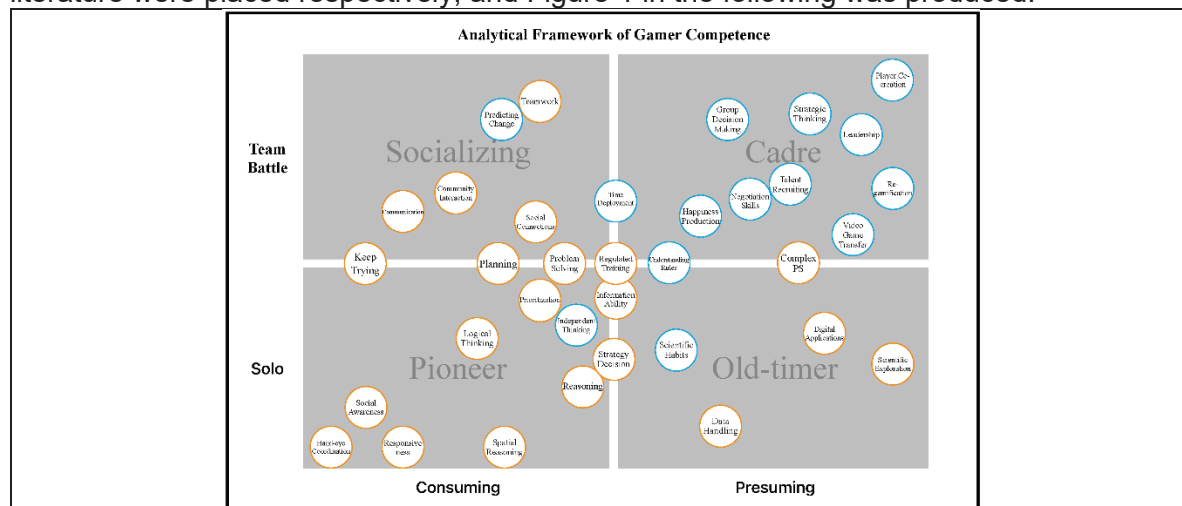


Figure 1: A Review of the Current Video Game Competencies Drawn by the Author

The main purpose for the development of an analytical framework is to “use the known to lead to the unknown, uncover the unknown, and gain the latest insights.” For this paper, such an analytical framework is easier for readers to understand and use when presenting results, and it helps researchers to analyze and rationalize the data and evidence, which is an efficient way to communicate trends and insights.

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