

The Digital Game Analysis Protocol (DiGAP): Facilitating Transparency in Games Research

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EXTENDED ABSTRACT

Analyzing digital games can inform scholars on a broad range of topics such as avatars and character autonomy (Willumsen 2018), the portrayal of female game characters (Lynch et al. 2016), and narrative structures in action games (Ip 2011). While these studies all conducted some form of game (content) analysis, there seems to be no apparent consensus regarding how to report methodological choices and the specifics of play sessions in a transparent way. For instance, the above-mentioned study of Willumsen (2018) – while specifying the analytical framework to assess avatar control and character complexity in five case examples – leaves out crucial information on the

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how and *why* of game selection, intensity of game content played, playstyle, and other researcher characteristics that may influence the analysis of a game itself (Schmierbach 2009). Hence, the purpose of this abstract is twofold. First, we will provide an overview of methodological papers regarding game content analysis. Second, we will propose a protocol that enables authors to analyze digital games and report on their chosen approach to game content analysis in a more transparent way.

There are several often-used methodological papers that allow researchers to apply the method of content analysis to digital games. Consalvo and Dutton (2006) proposed a methodological toolkit to critically and qualitatively analyze digital games that consists of four components: *object inventory* (i.e., making an inventory of collectable game objects), *interface study* (i.e., examining on-screen and menu information), *interaction mapping* (i.e., analyzing in-game choices and player freedom), and *logging gameplay* (i.e., studying the larger game world and emergent behavior). Similarly, Malliet (2007) suggested several crucial phases of methodological preparations for qualitative game analyses. These include: (1) constructing an *analytical framework* that takes into account both representational (e.g., audiovisuals, narrative) and simulational (e.g., complexity of controls, game goals) aspects of games, (2) selecting a relevant and diverse *sample* of games to analyze, (3) marking out the *boundaries* of the content being analyzed (i.e., in terms of different versions, platforms, and modifications), and (4) describing how the analysis is affected by *researchers' motivations* and *preferences*. Furthermore, Lankoski and Björk (2015) listed three features of a formal analysis or 'close reading' of digital games, a qualitative approach which they state is often implicitly used in game studies research: *components* or in-game elements used by players or the game system, *actions* performed by players or the game system, and *goals* within the game system. In addition, they emphasized the importance of describing the researchers' background and interests as well as playing the game multiple times in different ways to obtain validity and reliability. Finally, Schmierbach (2009) offered a more quantitatively-oriented viewpoint by discussing particular challenges and solutions with regard to: *unitizing* (i.e., dividing the content into distinct units based on playing time or predefined categories like chapters or missions), *sampling* (i.e., game selection), and *diversity* in terms of researcher motivation, preferences, and gaming experience.

We argue that an update to the above-mentioned approaches is required for at least two reasons. First, several fundamental papers on game analysis methodology stem from the early days of the game studies field (e.g., Aarseth, 2033; Consalvo & Dutton, 2006; Malliet, 2007). The medium (and academic study) of games has changed since then, and so have our methods to study them. While more recent work has provided additional worthwhile methodological insights on game analyses, a cross-historical overview of the game analysis methodology is seemingly lacking. Second, most of these works focus on one specific approach to analyze games: see, for instance, Lankoski and Björk's (2015) approach to qualitative formal analysis versus Schmierbach's (2009) focus on quantitative game content analysis. While recent reflections on both quantitative (Burrige et al. 2019) and qualitative content analysis (Daneels et al. 2019) have occurred, we believe that game research would benefit from a comprehensive, flexible protocol for the analysis of digital games and subsequent reporting of game analyses. Therefore, instead of suggesting another rigid framework – as these are often adapted to a study's research goals and sampled games (e.g., Daneels et al. 2021) – we propose a protocol similar to the PRISMA approach for systematic reviews and meta-analyses (Moher et al. 2015). This protocol would enable authors of both qualitative and quantitative analyses to report in a transparent, systematic, and standardized manner on their methodological approach and choices, while also allowing sufficient flexibility for a study's specific focus.

As of April 2022, an elaborate version of DiGAP has been published in *Game Studies* (Daneels et al. 2022). A checklist form summarizing DiGAP can be found on [OSF](#). Derived from (among others) the aforementioned methodological papers as well as the authors' personal experiences with game analyses, we distinguish seven sections (and a total of 31 items; see Daneels et al. 2022) within the protocol:

- (1) **Rationale & objectives** of the game analysis, potentially accompanied by specific research questions and/or hypotheses;
- (2) **Researcher background:** e.g. *orientation* during the analysis (focus on narrative, mechanics, aesthetics, social aspects, or a combination; see Tondello & Nacke 2019), *prior game experience*, *socio-demographic* background;
- (3) **Game selection:** e.g. *type of sample* (e.g., purposive, convenience, random), rationale for the sample;
- (4) **Boundaries** of analyzed content: e.g. *difficulty level*, level of *engagement* with the content (see Aarseth 2003), *unitizing* of content (see Schmierbach 2009), *software version*, *platform* used, use of *meta-ludic texts* (e.g., reviews, blogs, PR material, press releases; see Masso 2009);
- (5) **Analysis approach:** e.g. *qualitative* or *quantitative*, specific *analytical framework* used (e.g., formal analysis or a specific set of dimensions as seen in Consalvo & Dutton 2006 or Malliet 2007), specific *dimensions* or *components* in analysis (e.g., graphics, soundtrack, choices, haptic feedback, marketplace characteristics), an elaborate example of a single *note-taking session* or *recording of gameplay session*;
- (6) **Coding techniques and data extraction:** e.g. *type of data* (e.g., notes, recordings, playthroughs), *coding method* (e.g., code book for quantitative analysis), *method* of data extraction (e.g., thematic analysis, descriptive statistics), *software* used for data extraction (e.g., NVivo for qualitative coding, SPSS for frequencies);
- (7) **Reporting & transparency:** e.g. conducting an *intercoder reliability* test (if applicable), saving *recordings* while playing and making these publicly accessible (checking for potential copyright issues).

While a first version of DiGAP has been published (Daneels et al. 2022), nevertheless it is our intent to further develop this protocol for digital game analyses, especially by building on feedback from (non-)gaming scholars such as the DiGRA community.

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