

Crunch on the playground: long hours of work in game development

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Keywords

crunch, developers, video games, overtime work, workers

INTRODUCTION

Crunch are long working hours, generally not rewarded, put in place to finish a project (Cote and Harris 2020). Despite the fact that crunch has been reported by developers for over twenty years (Edholm et al. 2017), there is little evidence about this phenomenon in research papers (Brogan 2022; Niemelä 2021). In order to fill this gap, this extended abstract presents preliminary results of a scoping review¹ on the characteristics of crunch in the game industry. This review integrates an ongoing master's research on the relation of crunch and mental health indicators.

METHOD

A scoping review is a method that allows mapping available information about a subject, synthesizing information, delimiting gaps of research and proposing future research (Barbosa Filho and Tricco 2019; Arksey and O'Malley 2005). The search string (composed by 348 words) was developed following the Population, Concept, and Context (PCC) model (Araújo, 2022). The application of the search string was made in may 2023 in 6 peer-reviewed sources: two disciplinary sources of Engineering and Technology (Engineering Village and IEEE), one of Psychology (PsycInfo), two interdisciplinary sources (Scopus and Web of Science) and one regional source from Brazil (SciELO). To search for gray literature we used four information sources: Open Access Theses and Dissertations (OATD), Networked Digital Library of Theses and Dissertations (NDLTD), Dimensions, and Google Scholar. The records collected were allocated using EndNote (<https://endnote.com/>), where the duplicates were removed through an automated mechanism and also manually. After that, the 2922 records retrieved were incorporated into Rayyan software (www.rayyan.ai), from where the abstracts were read and the eligibility criteria were applied. The criteria were applied by the two authors in a double-blind process. The inclusion criteria were: (1) empirical, theoretical, review,

Proceedings of DiGRA 2024

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institutions' documents; (2) about game developers; (3) address crunch; (4) digital games industry context; (5) in Roman alphabet; (6) without limitation of time or region. After applying the criteria in abstracts the authors met to reach a consensus on the records in disagreement on inclusion or exclusion, resulting in 62 records. After that, the authors read the full text of the records also in a double blind process. The final number of records included was 41, however, for this abstract we selected only the empirical evidence on crunch, which are 17 studies.

PRELIMINARY RESULTS

Characteristics of crunch

Crunch is characterized by a variation of 10 to 12 hours of work per day (Kim and Lee 2021), from 60 to 80 weekly hours (Ouellet 2010), carried out during weeks, months or year (Chung and Kwon 2020). Crunch is presented in small and big teams (Edholm et al. 2017; Wright 2015). Its occurrence varies between 45% to 85% in samples of game developers and games' postmortem analysis (Edholm et al. 2017; Ouellet 2010; Mendes and Queirós 2022; Larsson 2018; Westerdahl 2019). There is evidence that crunch is a naturalized practice in game development settings (Cote and Harris 2020; Ouellet 2010; Wright 2015).

When in place, crunch occurs right before a deadline or in critical moments of the project (Ouellet 2010). Edholm et al. (2017) divided crunch into four types: continuous crunch, made during the project; final crunch; mini crunches; and delusional crunch, when a team overworks and doesn't call this crunch. This was also described by Ouellet (2010)². Other authors have also differentiated crunch between self-imposed and imposed by a company (Wright 2016); good crunch and bad crunch (Cote and Harris 2023).

Antecedents and consequents of crunch

The main antecedents of crunch described in the literature are: bad management (Chung and Kwon 2020; Edholm et al. 2017; Peticca-Harris et al. 2015), anti-corporate ethos, passion for work (Cote and Harris 2020; Sundin and Johansson 2022), organizational culture (Westerdahl 2019; Sundin and Johansson 2022), creative industry as unmanageable (Cote and Harris 2020; Sundin and Johansson 2022), self-imposition (Edholm et al. 2017; Wright 2016), implicit request of crunch (Edholm et al. 2017; Kim and Lee 2021; Wright 2016), short deadlines, problems in project scope (Edholm et al. 2017; Peticca-Harris et al. 2015; Westerdahl 2019), and expectations of being rewarded for doing crunch (Ouellet 2010). Mobile games and Games As A Service (GAAS) also may lead to more crunch because of the continuity of the project after it is released (Chung and Kwon 2020; Weststar and Dubois 2022).

Negative effects of crunch described in the literature are: burnout (Edholm et al. 2017; Cote and Harris 2023; Mendes and Queirós 2022; Peticca-Harris et al. 2015; Sundin and Johansson 2022), work-family conflict (Cote and Harris 2023; Sundin and Johansson 2022), stress (Edholm et al. 2017; Kim and Lee 2021; Peticca-Harris et al. 2015; Sundin and Johansson 2022), sleep problems (Edholm et al. 2017; Sundin and Johansson 2022), pain in the body (Kim and Lee 2021), depression and

alcoholism (Peticca-Harris et al. 2015), fatigue (Kim and Lee 2021; Sundin and Johansson 2022) and suicidal tendencies (Peticca-Harris et al. 2015; Kim and Lee 2021). Crunch is correlated with increase of mental and emotional demands and to less affective commitment. (Larsson 2018; Mendes and Queirós 2022). For the organization, doing crunch may: a) bring more expenses (Cote and Harris 2023), b) diminish product quality, or c) have no effect on the schedule (Edholm et al. 2017; Peticca-Harris et al. 2015).

As for positive effects, there is some evidence indicating that crunch allows: a) more work done in less time and b) an increase in the sense of belonging on the teams (Edholm et al. 2017). Also, crunch can be compensated with better salary, good reputation, promotion and bonuses from the organization (Ouellet 2010).

How to avoid crunch

Labor unions are an alternative to diminish crunch (Chung and Kwon 2020). In Finland, the existence of no-crunch policy in organizations along with public policies have helped to limit the occurrence of crunch (Sotamaa 2021). Also, becoming self-employed is a way to get out of a company that is imposing crunch (Wright 2016).

CONCLUSION

The objective of this abstract was to describe the existing evidence about crunch in the game industry. Although the results of this review summarize the actual knowledge about crunch, it is important to posit that most of the studies on the subject are qualitative, with low quality of evidence, non-generalizable and restricted to a global north perspective. Also, most knowledge on the effects of crunch on health and work-life balance is anecdotal, with little research performed by health and humanities scholars on the subject.

Therefore, future studies should investigate what are the psychological and social aspects that make people work more hours, what are the effects of overwork on physical and mental health on game developers and what are the most efficient ways of avoiding crunch. Studies with a quantitative design and larger samples of game workers are expected as well. Countries in the global south should also be investigated, mainly because they are used as an export point for cheap labor in game development. One final step of the scope review is to collect records from professional associations and organizations representing game developers and submit them to the eligibility criteria. Therefore, eligible records will be incorporated into what has already been analyzed. The full report of this scoping review will be later published in a peer reviewed journal.

ENDNOTES

¹ Other information about the review can be seen in OSF website with the DOI 10.17605/OSF.IO/RC4M3 or in the webpage: <https://osf.io/rc4m3/>

² Crunch is a term sometimes avoided by organization or workers and replaced by 'effort', for instance (Ouellet, 2010).

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