Good Practices for Indie and Solo Game Developers: A Survey Based on Online Videos

Andrée Burlamaqui Ferreira, Rafael Marques de Albuquerque

**Bel. Andrée Burlamaqui Ferreira**
University of Vale do Itajaí
Game Design and Digital Entertainment
5ª Avenida, 1100
88337-300 Balneário Camboriú
BRAZIL
dreebf@gmail.com

Andrée Burlamaqui Ferreira is an independent game developer. He received his BA in the field of game design at the University of Vale do Itajaí (Brazil). His research interests include the development of independent games, particularly games that are developed by only one person.

Rafael Marques de Albuquerque, PhD.
University of Vale do Itajaí
School of Arts, Communication and Hospitality
5ª Avenida, 1100
88337-300 Balneário Camboriú
BRAZIL
albuquerque@univali.br
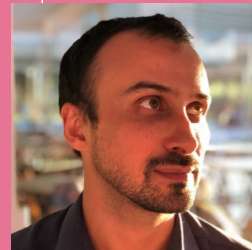
Rafael Marques de Albuquerque is a lecturer at the School of Arts, Communication and Hospitality at the University of Vale do Itajaí (Brazil). He received his PhD. in the field of education at the University of Nottingham (UK), after acquiring an MA and BA in graphic design at the Federal University of Santa Catarina (Brazil). His research interests include mainly digital games, game design, narrative design, and the connections between games, learning and society. He has published around fifteen scientific journal papers and three book chapters, mostly on digital games.

ABSTRACT:

Although the most established model of digital game development is through funding from publishers, there has been a major boost to independent game development, especially after the 2000s. This production context has specific challenges, particularly for lone developers. Some indie developers share their experiences and tips with the community using videos, and these videos illustrate the challenges and mindset around indie development of their time. This article presents a survey of good practices for lone (solo) indie developers compiled from twenty-nine YouTube videos. There are thirteen content creators who shared various tips about tools to use; ways to improve the game design of a product; ways to improve production process management and how to avoid pipeline failures during the development; recommendations on how to handle and how to manage marketing, focusing on fanbase management; advice on how to stay healthy during the process and mindset changes that are required for the development of games. The tips are compiled and a discussion is made on how they outline a dimension of the indie context and mentality of their time, and how they illustrate what are considered good practices among community members.

KEY WORDS:

game development, good practices, indie community, indie game, solo developers.

Introduction

Most best-selling digital games are the result of the work of large multidisciplinary teams. In this context, the tendency is to concentrate the most important creative decisions in a few professionals, and the high investments make business reasoning a determinant in the production process. Although many professionals are well adapted to this context, the search for creative and financial autonomy, as well as the availability of tools that facilitate game development, have inspired developers to create their own games in smaller teams with smaller budgets. Symbolically, it is as if these developers migrated from being just cogs in the engine to become the drivers themselves, taking the reins of the product and then creating something that pleases them – or following a process that pleases them.

In understanding the phenomenon of indie game development, it is important to research it with a historical perspective in mind. M. B. Garda and P. Grabarczyk[1] describe three different dimensions that determine whether the game is independent or not (in one or more dimensions): financial, creative, and publishing. These authors describe games with one or more independence types as independent and create a differentiated description for indie games. This term would designate a movement that emerged in the mid-2000s and that has other characteristics besides independence, such as retro aesthetic proposals and idealism about what digital games should be. T. Donovan[2] points out web browser games and online game stores as some of the factors that helped start the movement. It grew rapidly, and "as 2009 drew to a close, video games stood on the crest

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1   GARDA, M. B., GRABARCZYK, P.: Is Every Indie Game Independent? Towards the Concept of Independent Game. In *Game Studies*, 2016, Vol. 16, No. 1. [online]. [2021-05-07]. Available at: <http://gamestudies.org/1601/articles/gardagrabarczyk>.
2   DONOVAN, T.: *Replay: The History of Video Games*. Lewes : Yellow Ant Media, 2020, p. 368.

of a new era of creativity powered by both the grand visions of leading game designers and the fizzing experimental wildness of the indie movement". The independent market is diverse, grouping self-taught idealists, experienced developers who are "disillusioned with the increasingly brutal corporate structure of game development"[3] and other profiles. Some examples of games contextualized in this indie movement are *Braid*[4] and *Spelunky*[5], both released in 2008. *Minecraft*[6] was released in 2009 in alpha version and has become one of the largest phenomena in its number of users. Another notable example is the game *Stardew Valley,*[7] released in 2016. The amazing story of the lone developer, who developed a game passionately and dramatically, becoming a millionaire at the end, is one of the most exciting chapters of J. Schreier's book.[8] These success stories are sources of inspiration for developers looking to build careers as indie developers.

Although these stories are inspiring, indie development – and especially solo development, with just one main developer – has its own contextual challenges and difficulties. Developing games is laborious, complex, and stressful, requiring continuous focus, hard work, and many reworked sections. Solo development may entail several issues such as mental health, depression, and anxiety. In this challenging context, it is common for indie developers to create communities and partnerships. On the website *YouTube* there are several videos focused on *indie* developers, where the presenter uses their experience and knowledge to help other professionals by creating a repository of experience reports. Although some ideas illustrate quite personal views, one can also observe patterns about the difficulties encountered, tools used, and suggestions for fellow developers. This study seeks to make a systematic survey of these testimonies, to organize and create new levels of meaning to these multiple pieces of knowledge.

Background

Studies on indie or independent game development face conceptual challenges. The definitions of independent production can be compared to similar situations in indie films or indie comics, for instance. However, digital games have their own history and context, as well as a short scholarly tradition. J. Juul[9] argues that independent development may be understood as a mode of game practice, rather than a simple definition. It means understanding it as an arrangement of production methods, design conventions, distribution practices etc., which are also historically situated. This perspective allows scholars to understand game development within a context where multiple modes are possible. J. Juul illustrates three modes is his study: single-purchased AAA games, modern casual live games, and culturally independent games, while many other modes could be elaborated. He associates culturally independent games, for instance, with features such as small teams, presence in festivals, crowdfunding usage, and an appreciation of deviation from AAA modes of production.

3   HOLMES, D.: *A Mind Forever Voyaging: A History of Storytelling in Video Games*. Scotts Valley : CreateSpace Independent, 2012, p. 149.
4   NUMBER NONE: *Braid*. [digital game]. Austin, TX : Number None, 2008.
5   MOSSMOUTH: *Spelunky*. [digital game]. San Francisco, CA : Mossmouth, LLC, 2008.
6   MOJANG: *Minecraft*. [digital game]. Stockholm : Mojang, 2011.
7   CONCERNEDAPE: *Stardew Valley*. [digital game]. London : ConcernedApe, Chucklefish, 2016.
8   SCHREIER, J.: *Blood, Sweat, and Pixels: The Triumphant, Turbulent Stories behind How Video Games Are Made*. New York : HarperCollins, 2017, p. 83-106.
9   JUUL, J.: *The Independent Mode: A Functionalist Account of Independent Games and Game History*. Paper presented at International Conference on the Foundations of Digital Games (FDG '20). Bugibba, presented on 17th September 2020.

Scholars have not limited their studies on the concept of independence. In F. Parker's survey,[10] he divides research on indie games into four categories: history of indie games, theory and definitions, political economy – and the implications of indie development for the capital system, and socio-cultural. The latter includes not only the existence of communities of developers in particular cultural systems, but also tools and modes of production that emerge from these contexts. As the present study focused on YouTube videos describing tips and good practices for independent developers, it fits in this category of Parker's scheme, addressing what kind of content independent developers share in online videos, in a particular historical period.

Games are complex objects that work with aesthetics, narrative, and playful and technological innovation and are, therefore, difficult to predict and organize. With that said, it is possible to deduce the increased difficulty of developing a game without any team, i.e., of a solo indie developer. A. Y. Alencar and P. Jucá[11] conclude that the most recurring obstacle for indie companies is keeping up with deadlines and having the wrong scope definition. This problem can arise from the desire to continuously add new features to a game during the development process. Problems with scope can be the result of undermining steps such as polishing or testing, which might compromise the final product. Another very relevant issue for small developers is external financing. R. Hill-Whithall[12] describes different forms of financing: bank loan, government aid programs, current employment or *side-jobs*, investment by an investor, and investment through crowdfunding or publishers. Each of these forms presents specific challenges for the developer. In addition, the way funding is handled can influence whether the game is perceived as independent and/or indie.

The challenge for indie developers, especially solos developers, is not only management but psychological aspects as well. B. Byrne[13] warns us about the problem of burnout syndrome, which is the result of chronically stressful work that generates exhaustion. This issue requires attention from the developer, who should not underestimate the psychological difficulties of engaging in an ambitious project in a solitary way. N. D. Lipkin[14] warns about the relevance of further study on indie developers' motivation and how it influences labour conditions. Developers motivated by passion who are willing to ignore market difficulties may find difficulties that blend financial and psychological issues. J. Whitson, B. Simon and F. Parker[15] warn against the risk of ideals of independence and entrepreneurship hiding more dramatic situations of precarious labour conditions. To help with this difficult context, some developers try to write about this process. In this case, we can refer to the document *Indie Game Design Do-s and Don't-s: The Manifesto* by E. McMillen,[16] the creator

10   PARKER, F.: Indie Game Studies Year Eleven. In PEARCE, C., KENNEDY, H., SHARP, J. (eds.): *DiGRA '13 – Proceedings of the 2013 DiGRA International Conference: DeFragging Game Studies*. Atlanta, GA, U.S. : DIGRA, 2013, p. 2-10. [online]. [2021-05-14]. Available at: <http://www.digra.org/wp-content/uploads/digital-library/paper_100.pdf>.

11   ALENCAR, A. Y., JUCÁ, P.: Dificuldades Organizacionais de Empresas Indies de Desenvolvimento de Jogos Digitais. In DA SILVA JUNIOR, J. R., ESPÍNDOLA BAFFA, A. C. (eds.): *Proceedings of SBGames 2019*. Rio de Janeiro : IEEE Computer Society, 2019, p. 1268. [online]. [2021-05-07]. Available at: <https://www.sbgames.org/sbgames2019/files/papers/IndustriaFull/198414.pdf>.

12   HILL-WHITTALL, R.: *The Indie Game Developer Handbook*. Burlington : Focal Press, 2015, p. 213-240.

13   BYRNE, D.: *Developer Burnout Is Real*. Released on 17th October 2018. [online]. [2021-05-07]. Available at: <https://dev.to/daraghbyrne/developer-burnout-is-real-2f0p>.

14   LIPKIN, N. D.: The Indiepocalypse: The Political-Economy of Independent Game Development Labor in Contemporary Indie Markets. In *Game Studies*, Vol. 19, No. 2. [online]. [2021-05-07]. Available at: <http://gamestudies.org/1902/articles/lipkin>.

15   For more information, see: WHITSON, J., SIMON, B., PARKER, F.: The Missing Producer: Rethinking Indie Cultural Production in Terms of Entrepreneurship, Relational Labour, and Sustainability. In *European Journal of Cultural Studies*, 2018, Vol. 24, No. 2, p. 606-624.

16   McMILLEN, E.: *Opinion: Indie Game Design Do-s and Don't-s: A Manifesto*. Released on 30th December 2009. [online]. [2021-05-07]. Available at: <https://www.gamasutra.com/view/news/117521/Opinion_Indie_Game_Design_Dos_and_Donts_A_Manifesto.php>.

of *Super Meat Boy*[17]. The document recommends being honest in your work, loving what you are doing, understanding that what is being created by your own hands is art, and risking with innovations in any project, while keeping a critical sense, and not letting yourself be totally carried away by emotion. However, the most important thing is to understand that you need to know a little bit about the legislative part and, in some way, try to make money with your game - after all, it is your hard work.

Being more technical, R. Hill-Whittall wrote a manual that analyzes tools, resources, and software for indie development.[18] He argues that it is important to verify through financial analysis which tools/software will be used and, if necessary, use open-source programs. He also mentions Quality Assurance (QA) and suggests trying to outsource as little as possible in this area by testing mechanics individually by themselves or with relatives, friends, and testers willing to play. The *Bugzilla* software can also be used to track errors (bugs) for free. One of the most essential aspects of indie development is marketing, especially getting in contact with consumers, since the game, depending on how it is released, will depend entirely on how the developer managed the visibility of their game. R. Hill-Whitall states that although there are some marketing companies specialized in game-related content, *YouTubers* are the new focus for indie developers as they are more accessible and reach more viewers.

One of the ways to study the context of indie game development is through interviews with professionals in the field. An example of these studies is M. Toftedahl, P. Backlund, and H. Engström,[19] who highlighted the importance of creating a community of interested players as a form of support for developers. Another study based on interviews is from L. S. Pereira and M. M. S. Bernardes,[20] who explained management and organization strategies and discussed, in particular, the less formal characteristic of those work environments, and that it is important to reflect on the differences and similarities between professional indie developers and people who create games or content for games as a hobby. They also point out that understanding the development of indie games can raise importance to meaningful issues for the gaming industry as a whole. O. Guevara-Villalobos[21] explores the nuances of indie identity; in other words, the variety of perspectives that compose the wide category of indie or independent, suggesting it is dispersed and fragmented regarding political, artistic and marketing ideas. Finally, N. D. Lipkin[22] interviewed a number of indie developers, discussing market, labour conditions, and how developers perceived the 'indiepocalypse' phenomenon. Those studies focusing on interviewing developers outline their experience and views. The present study aims to complement those by researching the online sources that are available to indie developers, believing they express a different aspect of the indie context.

17   TEAM MEAT: *Super Meat Boy*. [digital game]. Asheville, NC : Team Meat, 2010.
18   HILL-WHITTALL, R.: *The Indie Game Developer Handbook*. Burlington : Focal Press, 2015, p. 1-64.
19   TOFTEDAHL, M., BACKLUND, P., ENGSTRÖM, H.: Localization from an Indie Game Production Perspective: Why, When and How?. In FASSONE, R., BITTANTI, M. (eds.): *DiGRA '18 – Proceedings of the 2018 DiGRA International Conference: The Game Is the Message*. Turin : DIGRA, 2018, p. 13-15. [online]. [2021-05-14]. Available at: <http://www.digra.org/wp-content/uploads/digital-library/DIGRA_2018_paper_59.pdf>.
20   PEREIRA, L. S., BERNARDES, M. M. S.: Aspects of Independent Game Production: An Exploratory Study. In *Computers in Entertainment*, 2018, Vol. 16, No. 4, p. 11-13.
21   GUEVARA-VILLALOBOS, O.: Independent Gamework and Identity: Problems and Subjective Nuances. In BATEMAN, C., LOWENHAUPT, R., NACKE, L. E. (eds.): *DiGRA '11 – Proceedings of DiGRA International Conference: Think Design Play*. Hilversum : DIGRA, 2011, p. 2-18. [online]. [2021-05-14]. Available at: <http://www.digra.org/wp-content/uploads/digital-library/242_Guevara-Villalobos_Independet-gamework-and-identity-Problems-and-subjective-nuances.pdf>.
22   LIPKIN, N. D.: The Indiepocalypse: The Political-Economy of Independent Game Development Labor in Contemporary Indie Markets. In *Game Studies*, Vol. 19, No. 2. [online]. [2021-05-07]. Available at: <http://gamestudies.org/1902/articles/lipkin>.

Methodology

This study analyzes documents, taking into consideration that videos available online are primary sources and a type of document. According to C. Robson, "the term is sometimes extended to include non-written documents such as films and television programs".[23] It is considered that testimonies shared on this YouTube channel present an important and non-academic form of knowledge. The methodology consists, briefly, of searching for keywords on the YouTube website. However, to prevent cookies from manipulating the search, a tab has been opened in anonymous mode on Google Chrome. The keywords were "Indie game solo tips". The filter starts with the title, if it does not refer to the indie universe, it is excluded from the final research. Although the research is focused on indie solo developers, it is possible to utilize tips for indie teams for solo developers as well. Due to the huge amount of results, it is necessary to create other smaller filters: (i) tutorials for a specific engine have been excluded, since the proposal of the study is not to focus on the technical details of some specific software; (ii) devlogs of a specific game that did not offer tips or insights to other developers have also been excluded; (iii) specific marketing cases for a specific platform have also been excluded, following the same logic as the tutorials for a specific engine; (iv) videos that do not offer tips have been excluded; (v) videos with less than 500 views have been excluded to avoid content that receives less community scrutiny; (vi) videos offering tips that cannot be adapted for solo developers have been excluded.

Thus, with the filters, after 29 results, the videos began to saturate, easily fitting into the filters because of the search algorithm that tries to find videos related to the keyword, but ends up delivering videos with little relation to the search. In this way, many videos were found, and they are mostly focused on solo development. Below is a table separated by columns referring to the year of publication, the title of the video, the name of the channel, and the *link* of the video, respectively.

Table 1: Selected videos

Year of Publication	Video Title	Channel Name
2018	Making Your First Indie Game (5 Tips!)	Thomas Brush
2019	8 Solo Game Developer Mistakes to Avoid! [2019]	Ask Gamedev
2019	5 Solo Game Dev Mistakes You MUST Avoid (My Experience!)	Thomas Brush
2018	5 Tips for a Solo Game Developer!	BTO
2019	5 TIPS I've Learned after a DECADE of Making Indie Games!	Thomas Brush
2017	Can You Succeed as A Solo Developer?	Game Dev Underground
2018	Solo Indie Game Development on a Budget	Glass Beaver
2018	7 Game Design Mistakes to Avoid!	Ask Gamedev
2018	Indie Game Marketing with Zero Budget!	Ask Gamedev
2018	Can You Make It as a Solo Indie Game Developer?	Dilmer Valecillos
2018	Making Games Solo Is Not the Same as Making Them Alone	Game Dev Underground
2016	Indie Game Dev Tip #1 – The 4 M's of Success	GameDev Rick
2019	Never Make Games Alone	Game Dev Underground
2019	51 Game Design Tips! (In 8 Minutes)	Jonas Tyroller

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23   ROBSON, C.: *Real World Research: A Resource for Users of Social Research Methods in Applied Settings.* Chichester : Wiley, 2011, p. 348.

2018	9 Tips to Help You Finish Your Indie Game	Game Dev Underground
2019	Gamedev Secrets from Shovel Knight's Creators [2019]	Ask Gamedev
2019	The 5 BEST Tips for Getting Started as an Indie Game Dev GONE WRONG!	Darkstone Digital
2018	3 Lies About Being an Indie Game Dev	Thomas Brush
2018	5 Indie Game Dev Tips	Buildbox
2018	How to Make a Game ALONE (5 Secrets)!	Thomas Brush
2019	Making Time for Indie Development: 5 Tips!	DevDuck
2018	8 Game Development Mistakes to Avoid!	Ask Gamedev
2019	5 Ways to Make People Care about Your Game | MARKETING TIPS	Jonas Tyroller
2019	5 Indie Game Marketing Hacks with NO MONEY	Thomas Brush
2018	Let's Be Honest about Indie Game Development — Q&A	Thomas Brush
2020	Indie Game Development Tips: 3 Things You MUST Have!	How to Build Games
2017	The #1 Secret to Indie Game Marketing Success	Game Dev Underground
2017	How to Get Your Indie Game Funded (Without Using Kickstarter)	Game Dev Underground
2018	Passive Income for Game Developers – 5 Ways to Make It	Game Dev Underground

Source: own processing

After filtering the results, five analysis criteria were created. Comments from the creators of content in the videos were transformed into indirect quotations and then classified into at least one of the following categories: (i) *Professional developer data*, in this category we can check the weight of the information provided in the video. Some content creators did not make their experience in the industry explicit, so the search for their personal sites or social networks that at least indicated an approximation of their experience was needed. (ii) *Tools*, a category specifically made for tips that talk about software suggestions or ways to use them, i.e. direct advice and recommendations on specific *software* or tips related to *game design*, without being specific to a programming language or *game engine*. (iii) *Process management* includes tips on techniques related to project administration. (iv) *Marketing* categorizes tips designed to improve engagement for/with the community and/or target audience. This category was created taking into consideration an *indie-solo* developer who does not have funds to hire a *marketing* company. (vi) *Personal issues* was created, in short, to talk about the mental and physical health of the *indie* developer. After analyzing each of the videos in the categories above, it was possible to create a table with the condensed data. Subsequently, the table was used as a basis for the description and analysis of the generated data.

Results

In the results, the videos were composed mostly with tips about how to manage the project, as was expected from the studies of A. Y. Alencar and P. Jucá[24] that suggested that the biggest mistake of indie developers, in general, is to underestimate the scope and

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24 ALENCAR, A. Y., JUCÁ, P.: Dificuldades Organizacionais de Empresas Indies de Desenvolvimento de Jogos Digitais. In DA SILVA JUNIOR, J. R., ESPÍNDOLA BAFFA, A. C. (eds.): *Proceedings of SBGames 2019*. Rio de Janeiro : IEEE Computer Society, 2019, Vol. 9, p. 1268. [online]. [2021-05-07]. Available at: <https://www.sbgames.org/sbgames2019/files/papers/IndustriaFull/198414.pdf>.

having poor management. The entire project is compromised. However, most videos do not have full focus on a single category, and the creator ends up advising on more than one category. Thus, among the 29 videos, tips on process management appear in approximately 76% of cases. Next, both marketing tips and personal issues appear in 31% of cases with, finally, tool tips making up only 14% of cases.

Professional Developer Data

One of the parameters of analysis was the experience that the content creator has in the game development area, considering that this factor is relevant to determine the empirical basis of the testimonies. In this sense, a considerable number of years of experience in the gaming industry was recorded. We have thirteen content creators across the 29 videos and we divided their data between two categories: having published a game as an indie developer and overall performance time in the industry. Out of these thirteen content creators, 46% have games published as indie developers, such as T. Brush,[25] who published *Pinstripe*[26] and has a launch of his new *Neversong*[27] game scheduled. The other 46% do not have any games published as indie developers (although some have experience outside the indie environment), with the majority developing their first game during the time the videos were released. Among those who have participated in the industry outside of the indie context, there are cases such as Davidson,[28] who worked for 14 years in the industry but focused on education careers, with more than 621,000 students on the online courses platform *Udemy*. The remaining 8% did not have any information available about whether they had already published a game or not, such as the representative of the *BuildBox* engine channel.[29]

The performance time was divided into four subcategories, in which 38% have more than ten years of experience in the area, among them one of the creators of *Shovel Knight*[30], A. Faulkner,[31] who gave tips to indie developers during his interview. A total of 16% worked in the game development area for five to ten years. The second-highest percentage, 30%, refers to those who have between one and three years of experience in the general industry, such as J. Tyroller,[32] who developed *Islanders*[33]. The last 16% did not provide any estimate for their time of performance in the area.

Tools

The category of tools, which includes both game design and software tips, is the one with the least tips. There are only 5 videos out of the 29 that describe tips that have been

25   BRUSH, T.: *3 Lies about Being an Indie Game Dev*. Released on 7th December 2018. [online]. [2021-05-07]. Available at <www.youtube.com/watch?v=s6FWBY5mCVw&t>.
26   TMOS GAMES: *Pinstripe*. [digital game]. Irvine, CA : Armor Games, Serenity Forge, 2017.
27   ATMOS GAMES, SERENITY FORGE: *Neversong*. [digital game]. Boulder, CO : Serenity Forge, 2019.
28   DAVIDSON, R.: *Indie Game Dev Tip #1 – The 4 M's of Success*. Released on 3rd January 2016. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=PGEvWAU3xRI>.
29   *5 Indie Game Dev Tips*. Released on 17th December 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=MJ6zB002LBA>.
30   YACHT CLUB GAMES: *Shovel Knight*. [digital game]. Los Angeles, CA : Yacht Club Games, 2014.
31   *Gamedev Secrets from Shovel Knight's Creators*. Released on 15th November 2019. [online]. [2021-05-07]. Available at: <https://youtu.be/ZtxG5bXM2fM>.
32   TYROLLER, J.: *51 Game Design Tips! (In 8 Minutes)*. Released on 8th February 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=5ijuH_oMu-U>.
33   GRIZZLY GAMES: *Islanders*. [digital game]. Berlin : Grizzly Games, 2019.

classified as tools. Two of them mentioned more concrete tools; D. Nadaski[34] delivers a long list of free software recommendations, and G. Dunn[35] recommends finding a place to set specific goals, i.e., a place you normally write down your urgent matters. Management programs such as *Trello*, *Kanban Flow* (this being his favorite), *Hack n' Plan*. He also recommends that a developer should make all possible backups using tools from *Github* or *BitBucket*. Some tools are more oriented towards game design tips. J. Tyroller[36] delivers 51 game design tips in his video through an analysis of games submitted to a game jam he created and coordinated, and O. Bst[37] states the need to find inspiration from other games while designing the game design of a product, i.e., to analyze existing mechanics in order to conclude what needs to change. More specifically, A. Faulkner, Shovel Knight's designer, in his interview with *Ask Gamedev*,[38] talks about character design, stating that the developer needs to look for a silhouette that is easy recognizable. It needs to be noticeable so that the player does not have to keep searching about where they are and the colour palette of the character should not be ignored, that way the character will not get mixed up with the colour palette of the scenario.

Finally, we also classified in tools what T. Ruswick[39] states about financing, mentioning that, instead of using collective financing and if the developer uses the *Unreal Engine*, it is possible to contact Epic Games to try to get an *UnrealDev* grant, which allows the developer to earn between 5 thousand and 50 thousand dollars. In addition to funding provided by *Epic Games*, *Chucklefish* also offers funding (and publishing) services, and *Kongregrate* offers publisher services. He also talks about funding given by *CryEngine* (no longer available). Finally, he talks about using the *indie-fund.com* website.

Process Management

Appearing in approximately 76% of the videos, process management tips are the most common, as suggested by A. Y. Alencar and P. Jucá,[40] confirming that the *indie* developer's greatest requirement is to have good project management. Therefore, content creators who witnessed or performed the mismanagement of the project gathered tips so that their viewers would not make the same mistakes. So, for easy viewing, the tips were divided by their creators, i.e., according to who said it. Thus, each creator has their own list of tips about process management. Some of the tips shared by T. Brush[41] are

34   BEAVER, G.: *Solo Indie Game Development on a Budget*. Released on 19th July 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=sz2ZnRSp2YE>.
35   *Indie Game Development Tips: 3 Things You MUST Have!*. Released on 5th February 2020. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=SgefZNRsgbE>.
36   TYROLLER, J.: *51 Game Design Tips! (In 8 Minutes)*. Released on 8th February 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=5ijuH_oMu-U>.
37   *5 Tips for a Solo Game Developer!*. Released on 22nd May 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=XHYn3mB73IQ>.
38   *Gamedev Secrets from Shovel Knight's Creators*. Released on 15th November 2019. [online]. [2021-05-07]. Available at: <https://youtu.be/ZtxG5bXM2fM>.
39   RUSWICK, T.: *How to Get Your Indie Game Funded (Without Using Kickstarter)*. Released on 22nd July 2017. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=ERr5YtJ2uEg>.
40   ALENCAR, A. Y., JUCÁ, P.: Dificuldades Organizacionais de Empresas Indies de Desenvolvimento de Jogos Digitais. In DA SILVA JUNIOR, J. R., ESPÍNDOLA BAFFA, A. C. (eds.): *Proceedings of SBGames 2019*. Rio de Janeiro : IEEE Computer Society 2019, p. 1268. [online]. [2021-05-07]. Available at: <https://www.sbgames.org/sbgames2019/files/papers/IndustriaFull/198414.pdf>.
41   BRUSH, T.: *How To Make A Game ALONE (5 Secrets)!*. Released on 14th December 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=ZjDibmEtJmY>.; BRUSH, T.: *Making Your First Indie Game (5 Tips!)*. Released on 8th September 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=ON-RCLmkHqs>.; BRUSH, T.: *5 Solo Game Dev Mistakes You MUST Avoid (My Experience!)*. Released on 6th July 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=lsF7SpQzfYs>.; BRUSH, T.: *5 TIPS I've Learned after a DECADE of Making Indie Games!*. Released on 31st August 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=qUPwuBAnUew>.

more motivational, such as seeking inspiration from others by watching videos, looking at screenshots, etc.; discovering and trusting the developer's talents; and making games that the developer appreciates. Others deal with how to organize the workflow. In that sense, he recommends defining the rules of the game: a simple, quick, and short GDD (Game Design Document) is enough. B. Clarke[42] adds that it is important to think carefully before acting, so as not to waste time on activities that will not be used. T. Brush also mentions the creation of a plan with a small scope in mind. He recommends trying to create modular *assets*, both artistically and in code, to save resources. He warns neither to forget nor underestimate the polishing phase. Also, he reminds that developing a game is not just about creating the game. Much of it will be used for other things, such as creating a community, marketing, publishing, receiving feedback, etc., so these activities should be on the schedule. T. Brush has tips more oriented towards kinds of actions: using pre-made assets, checking for accessible tools and software, and using Google to solve problems along the way. Some of his tips address the development from a wider professional perspective: he recommends taking the work seriously and preventing family members from disturbing the workflow. There is also the problem of having income while creating the first game, which perhaps means one will need another job while the game is developed.

The *Ask Gamedev* channel[43] also has many recommendations. Many of them deal with seeking feedback during the development, such as: to always have a demo build for sampling, to create a test plan, to avoid getting so attached to an idea (if it looks bad, it is better to admit it and try something else), and to make a *post-mortem* of the game and analyze the *post-mortems* of other games to avoid making the same mistakes. He also reminds us of technical tips for the process, such as using industry patterns rather than improvising too much in coding, doing source control – always looking for a stable version – and planning for certification. The game needs to be sold and for that it needs to be certified to enter a platform. That could take time. There are recommendations that relate to game design, such as remembering to teach the player how to play the game, understanding that games that focus entirely on the story are exceptions, and keeping the target audience in mind all the time. Finally, there are scope tips, such as avoiding underestimating the polishing phase, and avoiding the danger of over-scope – also mentioned by O. Bst[44] and A. Faulkner.[45] The idea is to cut out what seems to be unnecessary and to avoid adding features endlessly.

T. Ruswick[46] also delivers a large list of tips, regarding collaboration, planning, and persistence. Regarding collaboration, he recommends having testers, seeking feedback, and outsourcing. He also mentions the possibility of creating tools for the engine one is using. Such tools, including assets, can be sold to support the main project as passive income. The

42 *The 5 BEST Tips for Getting Started as an Indie Game Dev GONE WRONG!.* Released on 5th August 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=Sebin6s80tl>.

43 *8 Game Development Mistakes to Avoid!.* Released on 24th March 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=HbhdTt4lgPk>.; *8 Solo Game Developer Mistakes to Avoid!.* Released on 16th April 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=umpp1ytp4Zk>.; *Gamedev Secrets from Shovel Knight's Creators.* Released on 15th November 2019. [online]. [2021-05-07]. Available at: <https://youtu.be/ZtxG5bXM2fM>.

44 *5 Tips for a Solo Game Developer!.* Released on 22nd May 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=XHYn3mB73lQ>.

45 *Gamedev Secrets from Shovel Knight's Creators.* Released on 15th November 2019. [online]. [2021-05-07]. Available at: <https://youtu.be/ZtxG5bXM2fM>.

46 RUSWICK, T.: *Can You Succeed as a Solo Developer?.* Released on 28th June 2017. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=NSYMS4p6LyE>.; RUSWICK, T.: *9 Tips to Help You Finish Your Indie Game.* Released on 2nd April 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=JWbVDfMgdyg>.; RUSWICK, T.: *Making Games Solo Is Not the Same as Making Them Alone.* Released on 9th August 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=HQdot2OudAg>.; RUSWICK, T.: *Never Make Games Alone.* Released on 21st April 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=VCVg5WwyV00>.

tips on planning are: to know from the beginning the platforms on which the game will be distributed, to work with deadlines even in solo projects, and to have a strong sense of priority – it is easy to dedicate too much time in features felt to be "cooler" or more comfortable to execute. When it comes to persistence, he emphasizes the value of finishing projects and avoiding the temptation of switching before the end. He warns us to be prepared for the last 10% of development. Finishing can be (and will often be) more exhausting and time-consuming than the creation of the first majority of the game. Maintaining a productivity flow is essential to finish it (also cited by O. Bst[47]). B. Clarke[48] adds that if you lose this workflow once, it will be easy to lose it again. D. Valecillos,[49] on the other hand, talks about how it is better to start as a solo developer to be able to get a sense of what the whole process is like, from prototyping to launching. Then, one can acquire a sense of what the management of a project is like. For him, it is good to work as a solo developer, because one does not have to wait for a team to keep working. Depending on the project, the scope, and on one's skills, it will be faster if one does everything, continuously, keeping the flow of creativity instead of waiting for the artist, programmer, or the game designer to continue their tasks.

There are two points to success related to management as explained by R. Davidson.[50] The first is to be aware of the value of your project, including aspects such as whether the game allows for a sequel and the monetization strategies it can implement. Also, the game should be able to create memorable moments, leaving players speechless. B. Clarke,[51] in addition to that which has already been included in the lists above, presents three more tips in his video, focusing on process management: when it is too hard, it is better to have a break. He also recommends making something big, or to work on the dream game, as this will provide motivation. Finally, avoid wasting time with processes that have been done by someone else if possible. B. Nowak, from *DevDuck*,[52] who is creating a game during his spare time, created a video to share management tips that helped him keep his *full-time* job and, in the meantime, develop his own game. He recommends converting idle time into productive time. For example, if the developer is going somewhere by bus, he or she can take the opportunity to think about certain elements that are not completely scripted in the game. He also mentions the importance of trying to finish all existing tasks before adding new ones, beginning with small projects, and avoiding 'zero days', when one has done nothing for the project. To him, it is also positive to use a tool to take notes on ideas or references and to manage the process, such a notebook or *Trello*. He recommends keeping this tool always at hand. G. Dunn[53] also mentions having a tool in which to write down all your ideas. The representative of the game engine *BuildBox,*[54] reading the article written by T. Crump, in addition to their suggestion to begin with small projects, recommends creating a colour palette to decide and manage the game colours. They reinforce the importance of the artistic dimension of the game, and of creating good quality assets.

47   *5 Tips for a Solo Game Developer!*. Released on 22nd May 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=XHYn3mB73IQ>.
48   *The 5 BEST Tips for Getting Started as an Indie Game Dev GONE WRONG!.* Released on 5th August 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=Sebin6s80tI>.
49   VALECILLOS, D.: *Can you make it as a solo indie game developer?.* Released on 17th October 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=pzZSH7z6zr8>.
50   DAVIDSON, R.: *Indie Game Dev Tip #1 – The 4 M's of Success*. Released on 3rd January 2016. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=PGEvWAU3xRI>.
51   *The 5 BEST Tips for Getting Started as an Indie Game Dev GONE WRONG!.* Released on 5th August 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=Sebin6s80tI>.
52   *Making Time for Indie Development: 5 Tips!*. Released on 27th May 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=HKt853TK7Mo>.
53   *Indie Game Development Tips: 3 Things You MUST have!.* Released on 5th February 2020. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=SgefZNRsgbE>.
54   *5 Indie Game Dev Tips*. Released on 17th December 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=MJ6zB002LBA>.

Marketing

In terms of marketing, most videos have tips related to player community (also called fanbase), be it the creation or the management, and your relationship with it. These tips make up 67% of all marketing tips, giving one the idea that the main way to make the product publicly recognized, for an indie developer, is by creating and managing a fan base. In the case of marketing related tips, they were also organized by the author. One of them is *Ask Gamedev*,[55] who mentions the relevance of creating a loyal fanbase and interacting with them. He warns, however, that a loyal audience cannot guarantee success if the product is of low quality. He emphasizes the importance of seeking feedback, suggesting that one tries to show the game to others with the best quality possible, and taking negative feedback seriously. There is also reference to a precise understanding of who the target audience is, and the idea of using similar games for that. Finally, he recommends avoiding underestimating the value of an optimized and good-looking page in online stores.

J. Tyroller[56] also reinforces ideas such as the importance of creating a community or fanbase and seeking feedback for the game. He adds that feedback can be a mutual activity, in the context that a developer can both give and receive feedback from peers. He recommends giving and collaborating before asking for favours. There is also a suggestion to value the fantasy of the game in its advertising. Concerning creating a community and receiving feedback, O. Bst[57] talks about creating devlogs, which are documents on the product's historical development (whether recorded or written). In this way, the product is disclosed while receiving feedback for what is written in the documentation. Other categories that were created for the best visualization of the tips were if the tips are related to YouTube, which is also the same platform used in the current research. Reference to YouTube appeared in 44% of videos with tips in the marketing category. Most of these specifically talk about the use of YouTubers to promote the game. These YouTubers are the creators of content that are usually sponsored to play the game as a form of disclosure. One of the tips, from T. Brush,[58] is not to ask YouTubers to play the game. Instead, get them involved. For instance, one could reach out to them and ask if they have any form of criticism to give, if they want to participate as a voice actor or help in the creation of a character, thus, letting them get to know the game. He also talks about not overestimating influencers, i.e., content creators. He admits that they are a great help depending on the audience of the influencer, as they can easily blend with the *fanbase.* However, sometimes this will allow the game to be viewed, without necessarily generating a jump in product sales.

In addition, there were tips on market analysis, as R. Davidson[59] states that it is necessary to think of something that has market appeal. Not just entering the market with what one has but thinking about what can become marketable. This does not mean turning the entire game into a copy of something else but knowing which parts can be used for product marketing. In terms of strategies for advertising the game,

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55   *Indie Game Marketing with Zero Budget!*. Released on 31st July 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=yQggqaxx6cg>.
56   TYROLLER, J.: *5 Ways to Make People Care about Your Game | MARKETING TIPS*. Released on 14th December 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=yFw3zLg0fTQ>.
57   *5 Tips for a Solo Game Developer!*. Released on 22nd May 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=XHYn3mB73lQ>.
58   *8 Solo Game Developer Mistakes to Avoid!*. Released on 16th April 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=umpp1ytp4Zk>.; *Indie Game Marketing with Zero Budget!*. Released on 31st July 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=yQggqaxx6cg>.
59   DAVIDSON, R.: *Indie Game Dev Tip #1 – The 4 M's of Success*. Released on 3rd January 2016. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=PGEvWAU3xRI>.

T. Brush[60] shares his views. He recommends making a list of press journalists who may be interested in the kind of game and using the Metacritic website to find those who reviewed similar games. He describes his recommended approach to create personal posts on Reddit advertising games and is skeptical about spending much energy to get posts on Twitter or developing an official website. There are also mentions of Nintendo Switch as being a good platform on which to publish.

Personal Issues

Personal issues, which generally involve the developer's mental health, were divided into three categories, the main one being confidence and self-esteem, present in 67% of the videos. Confidence is often talked about as a key element to avoid quitting, and self-esteem is often talked about to help the developer to not get 'blocked' if he/she does not feel that his/her work is perfect, which could generate problematic perfectionism.[61] It was also mentioned that one should learn to receive criticism, disassociating the project from the developer's own identity, and T. Brush[62] adds that receiving criticism can be difficult, but it is better to admit the error and try to improve than to go into denial. So, as R. Davidson[63] states, although the journey is often more difficult than it seems, the developer needs to remain motivated to be able to deliver the project since, for the project to be launched, it needs to be finished. This idea is also reinforced by the representative of the game engine *Build Box*.[64] This motivation can be arranged by analyzing the past, as T. Brush[65] states when saying that, as in the past, developing games was a completely different scenario from now, with many more difficulties, seeing that the number of paths that have opened lately can help a developer stay on the project.

The other category that had a lot of presence was about the change of mentality and habits, which also makes up 67% of the videos in the category. In this category, there are tips that seem simple, such as cleaning your table and brushing your teeth,[66] which, during the process of indie and solo development, run the risk of being disregarded. Since many solo indie developers work from home, they may not realize the importance of maintaining a healthy professional environment. Tips related to reserving some time for leisure, since no game will be finished if the developer is overworked[67] or cares too much about the product launch day[68] to the point of causing problems to their physical and mental health. Another

60 BRUSH, T.: *5 Indie Game Marketing Hacks with NO MONEY*. Released on 22nd June 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=otza1Eg5AsY>.; BRUSH, T.: *5 TIPS I've Learned after a DECADE of Making Indie Games!*. Released on 31st August 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=qUPwuBAnUew>.

61 RUSWICK, T.: *Never Make Games Alone*. Released on 21st April 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=VCVg5WwyV00>.

62 BRUSH, T.: *Let's Be Honest about Indie Game Development – Q&A*. Released on 17th June 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=4kyD8yaDuXE>.

63 DAVIDSON, R.: *Indie Game Dev Tip #1 – The 4 M's of Success*. Released on 3rd January 2016. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=PGEvWAU3xRI>.

64 *5 Indie Game Dev Tips*. Released on 17th December 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=MJ6zB002LBA>.

65 BRUSH, T.: *How To Make A Game ALONE (5 Secrets)!*. Released on 14th December 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=ZjDibmEtJmY>.

66 BRUSH, T.: *5 TIPS I've Learned after a DECADE of Making Indie Games!*. Released on 31st August 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=qUPwuBAnUew>.

67 RUSWICK, T.: *9 Tips to Help You Finish Your Indie Game*. Released on 2nd April 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=JWbVDfMgdyg>.

68 BRUSH, T.: *5 TIPS I've Learned after a DECADE of Making Indie Games!*. Released on 31st August 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=qUPwuBAnUew>.

tip shared by T. Brush[69] is to accept that the developer probably will not get rich easily, but that this does not prevent the venture from becoming sustainable. The expectation of quick and easy enrichment can be a problem. It is also necessary to be patient since the development of a game is time-consuming due to its complex and complete production pipeline, and sometimes even a prototype can take time to come out as it was planned.[70]

Finally, in the minority, being in 22% of the videos, is the category about avoiding loneliness. T. Ruswick[71] points out that it is extremely necessary to have contact with a community and that creating games as an indie and solo developer is not creating them alone. And this is complemented by T. Brush,[72] who says that it is necessary to have people you trust around you to tell you when you should stop trusting your instincts and start analyzing a specific part of the research base. Thus, despite not being in any of the above categories, D. Valecillos[73] states the need to see the creation and development of the product as a way of gaining experience, collaborating with the thoughts mentioned above about knowing how to receive *feedback* and, from that, improving on your next attempt.

Discussion

The data provides a large number of tips and perspectives. While analyzing them, it is important to realize that they come from the testimonies of individuals who describe their view of the process. Therefore, tips should not be taken as rules or absolute truths. They make more sense as points of reflection for the indie and/or solo developer to use as a guide for the critical analysis of their own context. An example of divergence that illustrates this difficulty is the comparison of the writings of R. Hill-Whittal,[74] who encouraged indie developers to use open-source software, and the testimony of D. Nadaski[75] whose list of recommendations is composed, mostly, of paid software. What is better, of course, depends on each case, and exposing each author's perspective can help other developers mature their own ideas and decide for themselves. More than pointing towards good practices, the compilation of tips outlines what content creators believe are the most relevant challenges for indie developers of that period, as well as the tips they find relevant. From the sample analyzed, it can be observed that, as A. Y. Alencar and P. Jucá[76] suggest, issues of the management of the production process are the biggest challenge of the indie developer. The scope issue, however, is not a specificity of indies and/or solo developers, but it is also a challenge found in large productions[77]. Perhaps the most significant difference is

69   BRUSH, T.: *3 Lies about Being an Indie Game Dev*. Released on 7th December 2018. [online]. [2021-05-07]. Available at <www.youtube.com/watch?v=s6FWBY5mCVw&t>.
70   RUSWICK, T.: *9 Tips to Help You Finish Your Indie Game*. Released on 2nd April 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=JWbVDfMgdyg>.
71   RUSWICK, T.: *Never Make Games Alone*. Released on 21st April 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=VCVg5WwyV00>.
72   BRUSH, T.: *5 Solo Game Dev Mistakes You MUST Avoid (My Experience!)*. Released on 6th July 2019. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=lsF7SpQzfYs>.
73   VALECILLOS, D.: *Can you make it as a solo indie game developer?*. Released on 17th October 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=pzZSH7z6zr8>.
74   HILL-WHITTALL, R.: *The Indie Game Developer Handbook*. Burlington : Focal Press, 2015, p. 1-64.
75   BEAVER, G.: *Solo Indie Game Development on a Budget*. Released on 19th July 2018. [online]. [2021-05-07]. Available at: <https://www.youtube.com/watch?v=sz2ZnRSp2YE>.
76   ALENCAR, A. Y., JUCÁ, P.: Dificuldades Organizacionais de Empresas Indies de Desenvolvimento de Jogos Digitais. In DA SILVA JUNIOR, J. R., ESPÍNDOLA BAFFA, A. C. (eds.): *Proceedings of SBGames 2019*. Rio de Janeiro : IEEE Computer Society, 2019, p. 1268. [online]. [2021-05-07]. Available at: <https://www.sbgames.org/sbgames2019/files/papers/IndustriaFull/198414.pdf>.
77   SCHREIER, J.: *Blood, Sweat, and Pixels: The Triumphant, Turbulent Stories behind How Video Games Are Made*. New York : HarperCollins, 2017, p. 245-270.

that large productions often have the backing of financially robust companies, while small developers can more easily fall into pernicious situations. J. Schreier describes the example of the indie game Shovel Knight; the developer ran out of money for a simple coffee.

The scope issue is a challenge because it is, in fact, a complex problem. The strategies described in the analyzed videos are in line with the themes described by A. Y. Alencar and P. Jucá.[78] It is important to note that some tips are more technical, such as using a simplified Game Design Document or modular assets. Most, however, refer to frequent errors. In this area, both the literature and YouTube testimonials seem to serve mainly to help novice developers to avoid falling into common pitfalls (like underestimating the quality assurance stage, starting with overly ambitious projects, or avoiding third-party feedback), as well as helping developers who have gone through these experiences to interpret and make sense of what happened, realizing that they are common mistakes. Finally, some tips refer to giving useful ideas that may not have crossed the developer's mind and that may be valid in their case. Examples of this are the use of prefabricated assets or the sharing of engine tools used in the game to generate passive income.

One can assume the reason for such importance is related to management issues. In the case of larger companies, a developer can focus on managing only their own time and pace of work, possibly relying on producers and managers who will work exclusively on the process management. J. Whitson, B. Simon and F. Parker[79] found that developers perceive this sort of paradox; when independent games become more professional, small teams feel the need to have a producer and mimic the work models of bigger studios, while at the same time they find it important to keep their creative independence and smaller, less hierarchical teams. These authors argue for the importance of acknowledging relational labour – networking, contacting and negotiating with industry stakeholders, public relations – as time-consuming activities and key to success in the game industry. When there is no individual dedicated to these tasks, they need to be performed by the development team, and it can be overwhelming. Our data suggests that relational labour is seen as important and necessary. However, the general approach is to give suggestions of what to do, hardly problematizing the fact that relational labour demands much time, which may create an overwhelming challenge for solo developers. Decision-making in such cases is complex, as multiple tasks challenge the developer, both in terms of internal game development and in terms of relational labour.

Whereas developing games is a professional practice, there is a belief that indie development implies a sense of authorship, a way of self-expression. P. Ruffino[80] points out this discourse in game developers, when indie games may be considered personal and artistic, which can even suggest the absence of professionalism in their production. The videos analyzed in this study do mention an approach that includes making your "dream game" and being passionate about it, even making personal posts on Reddit promoting your game. However, in general they paint a landscape that reminds us of the traditional sense of professionalism. Examples are the suggestions to use management programs, organizing goals and deadlines, as well as writing a simple GDD. In that sense, the videos suggest a fairly systematic approach to game development, rather than crafting it in a

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78   ALENCAR, A. Y., JUCÁ, P.: Dificuldades Organizacionais de Empresas Indies de Desenvolvimento de Jogos Digitais. In DA SILVA JUNIOR, J. R., ESPÍNDOLA BAFFA, A. C. (eds.): *Proceedings of SBGames 2019*. Rio de Janeiro : IEEE Computer Society, 2019, p. 1268. [online]. [2021-05-07]. Available at: <https://www.sbgames.org/sbgames2019/files/papers/IndustriaFull/198414.pdf>.
79   For more information, see: WHITSON, J., SIMON, B., PARKER, F.: The Missing Producer: Rethinking Indie Cultural Production in Terms of Entrepreneurship, Relational Labour, and Sustainability. In *European Journal of Cultural Studies*, 2018, Vol. 24, No. 2, p. 606-624.
80   RUFFINO, P.: Narratives of Independent Production in Video Game Culture. In *Loading… The Journal of the Canadian Game Studies Association*, 2013, Vol. 7, No. 11, p. 107-120.

free-spirited, impulse-based manner. Another surprise was that the videos analyzed suggested a surprisingly small emphasis on indie community support. The importance of mutual help amongst independent developers has been highlighted in previous research, such as M. Toftedahl, P. Backlund, H. Engström[81] and O. Guevara-Villalobos.[82] It is not to say that the idea of seeking help from the community of developers was absent, it appeared timidly in many videos in tips such as looking for *post-mortems* of other games, outsourcing and making devlogs. A more explicit reference to a community of developers was made with reference to feelings of loneliness and mental health, but it does not represent the tone of most videos. Also, independent game festivals are commonly associated with the indie community and its history (e.g., J. Juul;[83] M. B. Garda and P. Grabarczyk) and are also a key element in community building, yet was practically absent in the videos. Clearly, the production of such videos itself could be considered a form of collaboration and knowledge exchange amongst developers, but in general they do not seem to reinforce much of a community beyond that and punctual feedback exchanges amongst developers.

The tips and perspectives revealed by the videos analyzed demonstrate the mindset and practices of a specific context in the history of the indie movement, in the environment of online videos. Just as M. B. Garda and P. Grabarczyk[84] describe the movement as historically situated and associated with certain ideals, the videos analyzed express the thoughts of the indie scene about a decade after it gained momentum, mostly even after the rise of the fear of market saturation called 'indiepocalypse'.[85] One could notice that the mindset perceived in the sample is much oriented towards the challenges of developing and selling games: mainly tools, tips and strategies. More idealistic values, such as the one described by J. Juul as intentionally creating deviating experiences that contrasts with AAA games – suggesting a relationship between indie and art games – was not a theme that pervaded the videos. The notion of making a game the developer would love (either to play or develop) is evident. However, in the sample we neither noticed the concept of indie games as a contrasting bastion in an endeavor to challenge the AAA game mode, nor the emphasis on innovative and artistic experiences. As O. Guevara-Villalobos[86] points out, the indie ecosystem includes a variety of possible ways developers can identify as indie, and it can involve political and aesthetical principles. There is, sometimes, tension between developers who value independence and autonomy, driven by an entrepreneur discourse, and more artistic-oriented developers, who use games as ways of expression.

81   TOFTEDAHL, M., BACKLUND, P., ENGSTRÖM, H.: Localization from an Indie Game Production Perspective: Why, When and How?. In FASSONE, R., BITTANTI, M. (eds.): *DiGRA '18 – Proceedings of the 2018 DiGRA International Conference: The Game Is the Message*. Turin : DIGRA, 2018, p. 13-15. [online]. [2021-05-14]. Available at: <http://www.digra.org/wp-content/uploads/digital-library/DIGRA_2018_paper_59.pdf>.

82   GUEVARA-VILLALOBOS, O.: Cultures of Independent Game Production: Examining the Relationship between Community and Labour. In BATEMAN, C., LOWENHAUPT, R., NACKE, L. E. (eds.): *DiGRA '11 – Proceedings of DiGRA International Conference: Think Design Play*. Hilversum : DIGRA, p. 2-17. [online]. [2021-05-14]. Available at: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.224.7239&rep=rep1&type=pdf>.

83   JUUL, J.: *The Independent Mode: A Functionalist Account of Independent Games and Game History*. Paper presented at International Conference on the Foundations of Digital Games (FDG '20). Bugibba, presented on 17th September 2020.

84   GARDA, M. B., GRABARCZYK, P.: Is Every Indie Game Independent? Towards the Concept of Independent Game. In *Game Studies*, 2016, Vol. 16, No. 1. [online]. [2021-05-07]. Available at: <http://gamestudies.org/1601/articles/gardagrabarczyk>.

85   LIPKIN, N. D.: The Indiepocalypse: The Political-Economy of Independent Game Development Labor in Contemporary Indie Markets. In *Game Studies*, Vol. 19, No. 2. [online]. [2021-05-07]. Available at: <http://gamestudies.org/1902/articles/lipkin>.

86   GUEVARA-VILLALOBOS, O.: Independent Gamework and Identity: Problems and Subjective Nuances. In BATEMAN, C., LOWENHAUPT, R., NACKE, L. E. (eds.): *DiGRA '11 – Proceedings of DiGRA International Conference: Think Design Play*. Hilversum : DIGRA, 2011, p. 2-18. [online]. [2021-05-14]. Available at: <http://www.digra.org/wp-content/uploads/digital-library/242_Guevara-Villalobos_Independet-gamework-and-identity-Problems-and-subjective-nuances.pdf>.

The data from the videos does not seem to actively engage in either perspective but focuses mostly on tools and strategies to develop games and make them as successful as possible, mostly commercially oriented and pragmatic.

Two elements often associated with independent developers were not significantly present in the data. J. Juul, as well as R. Hill-Whithall, associate independent gaming with crowdfunding as a business model, a topic that was almost absent in the material analyzed. One could ponder whether the practice has become less attractive among indie developers in recent years, or perhaps the absence was due to the general emphasis on developing games rather than funding strategies. These details from the data may suggest that commercial videos with tips for independent game developers, at least from that period, do not seem to so strongly echo the concept of indie as transgressive or deviant to AAA games, assuming a pragmatic approach to game development.

Conclusion

Through a sample of online testimonials taken from YouTube, we generated data in a context where content creators transfer their experiences, indirectly creating a list of best practices – i.e., tips, recommendations, and advice on what an indie developer should focus on or actions to be avoided. We managed to group the different tips into specific categories, relating them to research already carried out on the indie games industry. The development of this research enabled the transfer of empirical knowledge derived from the experience of indie developers to the academic environment, while also analyzing its relationships or contradictions. It is important that academic studies create a dialogue about game development in its different formats. This article aims to contribute to the discussion of good practices of an indie developer at a specific time – as they tend to change constantly.

Thus, due to this constant change, good practices can be considered temporary tips. New tools can emerge, making it easier to produce a game, while existing tools can evolve to the point of creating even more shortcuts than already exist for the production of games. The interest of large publishers and platforms in the indie scene and the tools available changes rapidly. Marketing strategies can become outdated since, as this article shows with the use of influencers, there are constant changes in what should be focused on to effectively make a game known to the public. For future research, it would be interesting, through the good practices presented in the article, to seek a way of validation and in-depth discussion of the ideas found. It would also be relevant to investigate whether other contexts – such as independent game festivals – do reproduce the mindset portrayed in this study. Perhaps indie game studies can evolve to understand the indie scene as diverse, recognizing the ideologies and discourses of each possible profile of indie developers.

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