# 6. NOITA – A LONG JOURNEY OF A GAME IDEA

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**ABSTRACT**

In this article, we present a case study where we used timelines as a structuring method for understanding the creative process of game development spanning several years. In the case study, an indie game, *Noita,* with over ten years of development time, was analyzed through a multitude of sources such as devlogs, prototypes, builds, interviews and fan engagement. As a result, we came up with a timeline with over 150 entries in seven distinct phases to showcase the richness of the design journey, with multiple milestones and influences on the development process. In this article, we reflect on

the research process and suggest the use of the timeline method as a part of the multidisciplinary toolset for studying game design.

**KEYWORDS**

timeline method, game design process, game development, game design praxiology, game production studies, game design, indie game development, Noita, Finnish games

## INTRODUCTION

In order for us to fully understand games, we need to also understand how they have been made (Kultima 2018; O'Donnell 2014). Games are not only something that are played by people, they are also works that are made by people. The work that goes into developing a game requires specific skills and stamina, platforms are constantly changing, and audiences that shift from one trend to another. It is hard to keep up with the changes within the industry (Stenros and Kultima 2018; Kultima 2018; Kerr 2017).

Games have been studied from the perspective of their production (Sotamaa and Svelch 2021). There is also a rising body of praxiological (Kultima 2018) studies and a call for more accurate understanding of the development processes (Godin et al. 2020). 'Game design' has been identified as the most used keywords in game studies publications (Melcer et al. 2015). Often, this refers to the construct of the artefacts, instead of the practice of designing. Examining games only after production, when they are already playable and out of the hands of the developers, can bias our understanding of games as a larger phenomenon. It is important that we grow our understanding of the design processes of games (Kuittinen & Holopainen 2009; Kultima 2015a).

Studying game design processes is not a straightforward task. The challenge of accessing (O'Donnell 2014) the design processes of expert game designers has been one of the reasons why we cannot keep up with the increasing variance within the game industry.

While issuing protocol studies (Cross 2001) or praxiographic approaches (Godin et al. 2020) presents a challenge, the more accessible methods, such as thematic interviews have been utilized to examine the practices of design professionals (Kultima 2018; Lawson 2012).

Often, when someone talks about a game idea, they provide a short description of the yet to be realized game's basic functionalities, narrative elements, mechanics, and theme – or any combination of such features, depending on the genre and platform. It is commonly understood that a game idea emerges in the beginning of the development process, and then guides the process towards the finished artifact. While there are some studies on how game ideas are born and how they are brainstormed (Kultima 2010; Hagen 2009), there are even less studies on how game ideas evolve during the iterative development cycle and why (cf. Kultima 2015b).

Furthermore, it is generally believed that the production process of a game is divided into particular phases, where the idea is gradually developed into a full-blown game, through an iterative process (e.g. Fullerton 2014; Lemarchand 2021; Adams 2010). The pre-production phase of game making involves a vast design space, which is then narrowed through design decisions. In the final phase of the game development, right before the launch, the design space is narrowed, and the game has settled into a form that will no longer be changed (Fullerton 2014).

The nature of game development is often fluid, with blurred boundaries between its phases, making the progression between different steps less rigid. (Kultima 2018; Kultima 2010). Game ideas can be born long before the production is set in motion, and they have various paths to enter the hands of a game development team (Tschang 2003). These idealized models of game development are rarely followed, and they are not suitable as all-purpose models. For instance, in modern mobile game development many games take the form of live services, instead of shelved products. The terminology inspired by automobile development has suited certain triple A game productions, and have later been treated as the archetype of all game

development – without grounding it in research. For instance, mobile game development and the development of online games with live operations have different phases, such as soft launch, live operations, and sunset. In a soft launch (or 'market test' for hyper-casual games), a version of a game is launched to a limited market segment, and experiences of that test are taken to shape the game to better fit a larger market segment. Before the global launch of a mobile game, the game continues to evolve, which then, in turn, is changed even further after full release, until the game is slowly taken down from the servers preceding a period of lower maintenance. The "classic model" of game development also becomes an odd framework for game developers that utilize the Early Access process of Valve's Steam marketplace, where an early version of a PC game is released to the audience, and the players can see the evolution of the product before its final release.

Furthermore, it is hard to generalize game development due to various company-specific processes, development philosophies, the variation in team consistency, implications of genre, and basically just the overall plurality of the practices (Kultima 2018). Something that a game developer has in the beginning of the development journey, an idea, has various routes. The game idea is transformed into a playable game through an iterative process, where the game design is altered based on the resources the development team has and the context within which the artefact is born (Kultima 2015b).

In order to deepen our understanding of the game development practices, we conducted a study on a Finnish indie game, *Noita*. The creative process of *Noita* started as early as 2005/2007 and culminated with a PC game released on Steam in 2021. The case of *Noita* is especially interesting due to the long journey it had and multiple creative decisions on changing the core idea while the game was in development. Additionally, the game concept was intricately linked to the development of a unique game engine. We had generous access to *Noita*'s development: Our versatile set of data included multiple interviews, developer logs, objects, prototypes and builds, as well as community engagement, all of which provided us a unique opportu-

nity to detail the journey of ideas within the timeline of *Noita*'s development.

## TIMELINES

Timelines are a well-known and effective way of interacting with the past. They provide easily understood narratives and structures that help to make sense of the chaotic and multifaceted nature of actual events. Because of this, they are also used extensively in popular histories, museum exhibitions and other historiographies aimed at the general public. This interest in timelines extends to game history, where popular accounts of critically acclaimed games have been utilizing the timeline structure, especially in popular "retro gaming" accounts listing influential game titles year-by-year.

The timeline as a representation of the past has also been subject to critique. Lubar (2013) noticed how the timeline structure in exhibitions came to be seen as "traditional" in the last third of the 20th century, and how it became increasingly criticized. The timeline structure was seen to be an "institution of confinement" in the Foucauldian sense, which had room for only one point of view in its representations, resulting in authoritarian readings of the past. This has resulted in timelines being replaced by polyphonic exhibitions focusing on categories and themes showing a multitude of voices from the past, but the question regarding their truthfulness and usefulness is still open to debate.

In research, timelines have been acknowledged as efficient tools for data collection (Adriansen 2012; Marshall 2019; Hope, Mullis & Gabbert 2013). Marshall (2019) claims that "Timelining can provide participants with a way to engage their stories deeply and even help to create new meanings and understandings." Adriansen (2012) chimes in by saying that "The method allows the interviewee to participate in the reporting of the interview which may give raise to ownership and sharing of the analytical power in the interview situation."

Hope, Mullis & Gabbert (2013) states that: "The timeline tech-

nique facilitated reporting of more correct details than a free recall, at no cost to accuracy, both immediately and after a delay." Timelines are also utilized in design research. Atman (2019) used timelines in a study of the examining design process. They used verbal protocol analysis as a data collection method, and formed timelines from the data. This helped them to understand how design expertise was impacting the process.

In this article, we explore timeline as a structuring method for studying game design process, similar to Atman (2019), but adapted to a process with a lengthened time period, and accompanied with a rich set of research materials.

## CASE: NOITA

*Noita* is a rogue-like PC game with a fantasy theme. It was developed by Nolla Games, a company consisting of three Finnish indie game developers, Petri Purho, Olli Harjola, and Arvi Teikari. The name of the game, *Noita*, is Finnish and translates into "wizard" or "witch." The protagonist of the game is a mysterious character with a purple cape, and the player can move the character around affecting the environment by shooting spells with a modifiable wand (see Fig. 1).

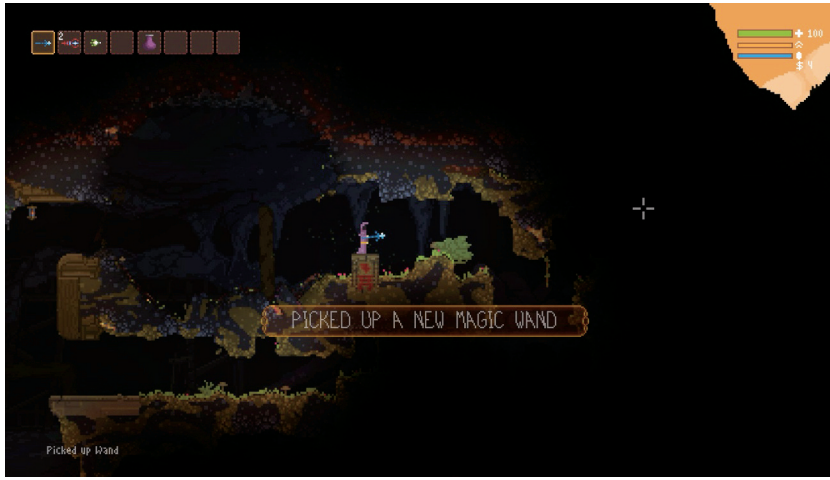


***Figure 1:*** Noita*'s gameplay view. The game character, who has just picked up a new wand (weapon), is in the middle of the image.*

The game is built utilizing a unique game engine, Falling Everything Engine. In *Noita*, all the pixels of the game are simulated, and they all have "physical" properties. This means that if, for instance, a structure in the game environment is destroyed, the behavior of the pixels is based on its given properties (for instance water flows down, and mud sticks to the ground).

The interaction is built in each pixel, instead of animations of the environmental assets. That also means that everything in the game is destructible, and the game affords a lot of emergent content. Furthermore, the environments of the game are procedurally generated, affording unique playthroughs for each session: every round of the game is different.

*Noita* features perma-death, so the player will always start anew after perishing in the game. The game features multiple levels, where the player is by default descending from the top to reach a portal at the bottom of the level. The portal will transport them to a space where they can replenish their health and modify their wands, as well as create new combinations of spells.

Spells can be purchased from the shop using gold that is collectible from dead enemies and wrecked environments. The game

also has lots of secrets facilitating explorative play and boss-fights to encourage players to build their character's strength. The official game was intended to be a single-player experience, but there are several modifications (mods) developed by the members of the *Noita* community, affording multiplayer features, extra levels, and different additions to the gameplay.

## RESEARCHING NOITA'S DESIGN PROCESS

Our study is based on research conducted for the *Noita – The Long Journey of a Game Idea* exhibition, which was on display at the Finnish Museum of Games from 4th of September 2021 to 12th of December 2021. The goal of the research project was to deepen the understanding of the intricacies that a game development process can entail – as opposed to the superficiality of professional talks and academic studies utilizing interview approaches. A parallel goal for the project was to educate the audiences of a local game museum how game ideas transfer and are altered within an iterative process of game development.

### The Research Process

The research project started in January 2021 and was concluded in June 2021 when the work for the exhibition setup (such as graphical work) started. The results were introduced in the museum exhibition in the Autumn of 2021 for a duration of three months. The focal point of the exhibition were seven timeline images that mediated the long journey of *Noita's* idea. The exhibition also featured multiple objects and two playable versions of the game: an early prototype of *Noita* and the first version of the game that was released for the Steam's Early Access program in 2019 (now an inaccessible version of the game).

We started the research process by familiarizing ourselves with openly available sources describing the game and its creative process. These included the game's website, Steam page, press package, arti-

cles in game magazines, conference talks and open lectures on YouTube, as well as an article in a physical book. We also played the game (on the stream and privately), acquired a rich material of developer notes (physical and digital), explored developer diaries, tested prototypes and development builds of the game, examined concept art, conducted multiple interviews with the developers (via Zoom and Discord), and engaged with the fan community. One of the methods of community engagement was a small survey of the community's wishes for the exhibition, but we also utilized fan-created content (such as game wikis) (cf. (Sköld 2015)), and furthermore engaged with them via Twitch and Discord (Kultima, Ojanen & Nylund 2023).

As the game already had Twitch integration as an official feature in 2021 when the research project started, we decided to include streaming as part of our research goals. The project results were planned to be presented in the form of a public museum exhibition, which we anticipated to be of a special interest to *Noita's* fans. We were not aiming to only superficially cover *Noita*, even though our own understanding of the game was limited. We anticipated that we would not be able to become well versed or gain a comprehensive understanding of *Noita* via first-hand playing within the schedule of our research project. We assumed that this could potentially impact the design of our interview questions for the developer team, as well as how well we would be able to interpret the other material, such as sketches and builds of the game. For these reasons, we wanted to probe the community of *Noita* players – as they had already invested extensive hours into the game and had gained expertise in *Noita's* world.

For the purpose of the project, one of the researchers kept a diary, documenting the research process, meetings, design work, as well as engagement with the community.

**Research Materials**

The development team of *Noita* donated to the museum a collection

of materials in May 2021, to be utilized in this project – but also to be preserved in the museum archive.

The donation included physical materials, such as sketches, and digital materials, such as prototypes. This collection grew with supplemented materials throughout the research process as the developers discovered more materials to share.

The research materials donated to the project consisted of 81 pages of notes and lists written on A4 sheets of paper (or other pieces of paper, such as used envelopes), and a sketchbook (146 pages) from the artist of the game, Arvi Teikari (see Fig. 2 & 3). Most of the notes were lists of ideas, to-dos or comments on the game – often not self-explanatory. The research team picked a handful of the items to be further explained by the developers, but was not able to cover all of them. The long duration of the development process resulted in challenges in memory work, especially the temporal relation of each idea. This made it challenging for the research team to place the ideas on the timeline.

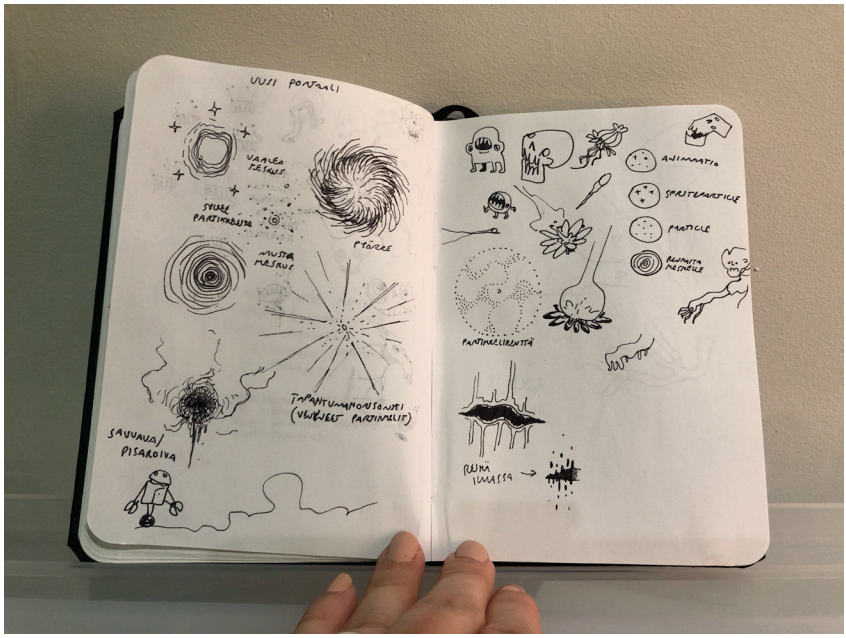


***Figure 2:*** *Arvi's notebook showing ideas for a new portal.*

The donated package of materials also included an external hard drive containing 23 early prototypes, a development log (html) of one of the team members, 181 builds of the game, 157 gifs and movies related to the game, logo files, mockups (concept art), press kit, 82k of automatically created screenshots, 12 game trailer videos, various other videos, and one conference presentation.

Playing the early prototypes of the game was especially useful for the research process, and also for testing later builds of the game. These contributed to our understanding the flow of the ideas and design changes in a concrete manner. It also led to the inclusion of other games as important factors that influenced the evolution of *Noita*.

**Interviews and Community Engagements**

The process involved repeated interactions with *Noita*'s developers. Each member of the core team was interviewed twice, and the freelancers (additional designer and a musician) were interviewed once. The interviews were conducted via Zoom, recorded and transcribed. The developers were also available on the museum Discord server to answer additional questions, and they also commented on the drafts of the research results; this option became especially useful during the latter part of the research project when we were working on polishing the timelines.

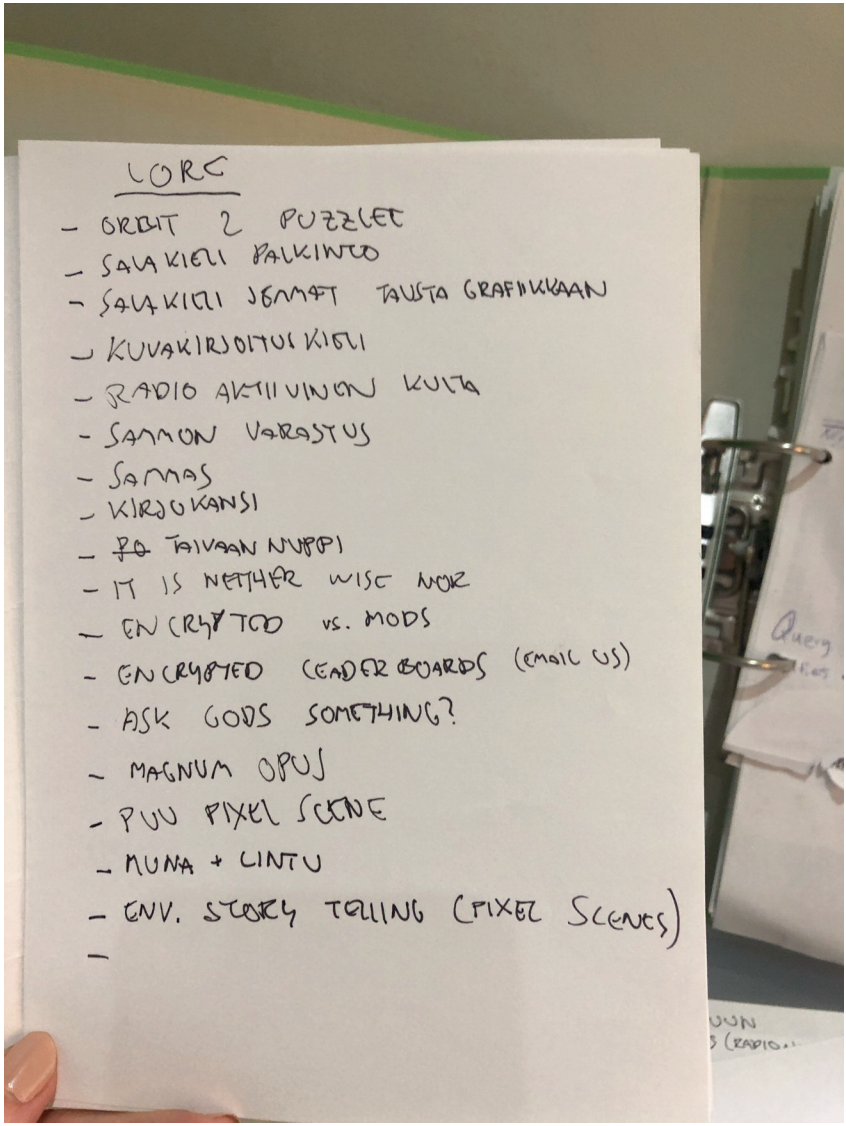


***Figure 3:*** *Handwritten list of* Noita's *lore ideas.*

From the very start of the project, one of the researchers engaged with the game's fan community by watching game streams and playing *Noita* live on Twitch. This engagement led to the discovery of a community of content creators, modders, as well as several Discord

channels, which deepened our understanding of *Noita* as a social artifact.

As we were not so familiar with the depth of the game, we decided to create a survey specifically to probe the *Noita's* community's choices for the timeline items. The fan engagement helped us to start working on the key points of the design process. The community members were asked what kind of things they would like to see in the timeline. In the end we received 60 replies, and ended up with multiple useful pointers on the journey of the game. We did not initially understand some of those notions, but after further discussions with *Noita* Discord community managers, modders and streamers, the entries started to be more meaningful. In the end, the community members were included in the list of exhibition credits.

Originally intended as a smaller part of the research project, the community engagement turned out to play a sizable role in the research outcomes. *Noita's* community of players, content creators, community managers and modders were engaged via weekly streaming of *Noita* on Twitch, almost daily viewings of other content creators playing *Noita* live, Discord discussions, and a survey of the community's ideas for the timeline items. This engagement made it possible for the researchers to see the organic design of the game once it was released for the community to play and modify. It was not possible to fully capture the creative process that led to the played and streamed game, by relying solely on the developer's own creative journey. This led us to also tell the story outside the creative process of the original creators.

The final output of the research was a collection of seven timelines depicting the temporal order of highlighted design decisions, milestones, outputs, and influences (See Fig. 4).

**Building the timelines**

The process of building the timelines was iterative. Our team of three researchers worked on several shared documents, adding and editing items, first on spreadsheets, categorizing and timestamping the

events. The construction of the timeline drafts started alongside the collection of data. Some of the events were selected from public materials, some were added from the community survey, and a significant number of the items were added based on the developer interviews.

Once we believed we had a somewhat full picture of the development process, we moved to elaborating on the items in a text document. Even at this point, we continued moving the time-stamped items around. The order of the items was adjusted, for instance, when we were able to get confirmation of a more precise timing of an event (e.g. June 2016 → 12th June 2016). There were also new items and events surfacing while we conducted the second interviews with the developers, and chatted with the community members. When placed on the timeline, the timing of some events built an inconsistent picture of the development process, requiring us to go back to the developers to ask for clarification. We also needed to fill the gaps that became visible while building the timed narrative. These were resolved by asking developers additional questions via Discord, or further examining our research materials.

Once the key developers were interviewed twice, the timelines were sent to them to review. As the timeline neared completion, we interviewed the audio lead of the project and added the composing work and releases of the soundtracks as events of the timeline.

The final timelines consisted of milestones of the creative work that happened in parallel: the work of the main team, the work of the community, as well as the composing (and releases) of the game's music. The timelines also hosted a large number of contextual events. Some contextual items were not directly about the transformations of the design, but events that impacted the work, such as the release of the games that inspired the development team to create *Noita,* when the team founded Nolla, met each other for the first time, and when a prototype was showcased at an expo. Some contextual events were not directly related to Nolla or *Noita*, such as the start of the pandemic, and other game releases by the main developers (such as

the release dates of *The Swapper*, *Baba is You*, and *Crayon Physics Deluxe*).

In parallel with the construction of the visualization of the timelines, the timelines were sectioned into thematic phases, which we distanced from the typical pre-production, production, post-production model, and instead, the themes emerged from the data.

## TIMELINE(S) OF NOITA

The dissemination of the research results was conducted as a form of a physical game exhibition at The Finnish Museum of Games. The seven timelines depicting the creative journey of *Noita* were placed on the walls as 80x200cm foam boards (see Fig. 5). Selection of concept art and developer notes were framed for the audience to see along with other items. In addition, one early prototype and the first public version of the game were available to play at the exhibition. The exhibition opened on 4th of September in 2021, and its final day was 12th December, 2021, resulting in a public exposure that lasted a bit over three months.

### Development Phases of Noita

*Noita* was released on 15th October 2020. It entered Steam's Early Access on 24th September, 2019. However, the initial idea for *Noita* was born somewhere between 2005 and 2007 in a discussion between one of the creators, Petri Purho, and his friends. The development process was lengthy: game engine work started as early as 2011 and the game design work in January 2013. The development of the game stretched over ten years – ending with the dispatch of final fixes for the game in April 2021 (see Fig. 6).

The development process involved many twists and turns, and the design was impacted by, not only various encounters with peer developers (at conferences and fairs), but also the modding community and feedback from the community when the game was in Steam's Early Access program. The creative influences for the game

were already captured in the early lives of the developers as they encountered memorable game experiences imprinting the young minds of future professionals. The developers shared the game with modders in October 2019, and in February 2020 it received official support for the Steam Workshop. In 2021, the game received its final patch. As a result of the research project, we utilized the language of the game's own fiction to depict the long journey of the idea of *Noita,* breaking the process into distinct phases. The timelines were also illustrated to mimic the characters and the environments of the game.

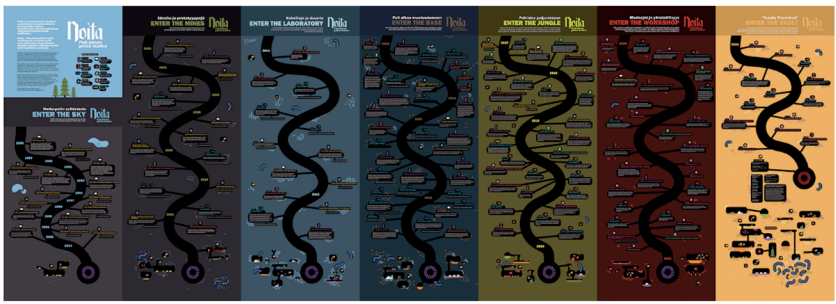


***Figure 4:*** *Seven timelines of* Noita.


***Figure 5:*** *Exhibition setup.*

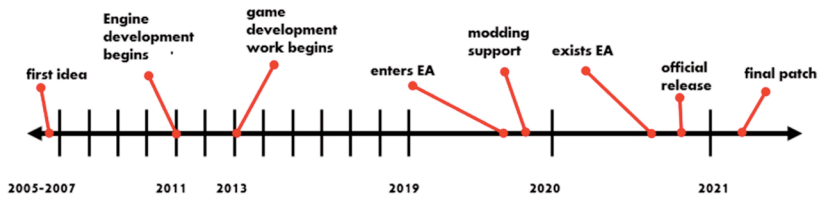


***Figure 6:*** *A rough timeline of* Noita*'s development.*

The seven timelines depicted different phases of the development. Each phase had a different influence on the creative journey:

1) **Enter the Sky, 1980-2005:** The first phase of the game's creative journey was titled "Enter the Sky". It spanned from 1980 to 2005. We considered this as the "prehistory of *Noita*". Within the timeline entries, we marked the birthdays of the developers, the releases of the games that inspired the team to create *Noita*, and events such as learning development tools and creating their first games.

2) **Enter the Mines, 2005-2011:** The second phase was titled "Enter the Mines" and it spanned from 2005 to 2011. Within this period, the initial idea of *Noita* was born, there were multiple prototypes that were created to pay for the formation of the game engine, and multiple exploration of various ideas were placed on the timeline.

3) **Enter the Laboratory, 2011-2013:** The third phase was titled "Enter the Laboratory" and it spanned from 2011 to 2013. Within this period, Petri Purho started the actual work for the Falling Everything engine and the game idea was explored further with various prototypes marked on the timeline alongside stories of how the core team came to know each other.

4) **Enter the Base, 2013-2017:** The fourth phase was titled "Enter the Base" (See Fig. 7), which can be considered in more traditional accounts as the start of the game development process. This period spanned from the start of the official work in January 2013 until 2017. Within this period, the company, Nolla Games, was also founded, the team explored different genres, and a lot of the game technology was developed.

5) **Enter the Jungle, 2017-2019:** The fifth phase of the timelines

was titled "Enter the Jungle". This started in 2017 and ended in 2019. In 2017, the first trailer of the game was released and the design was locked to match the published ideas. Here the core gameplay was decided and the developers obtained feedback from their peers in various conferences and fairs. Within this period, the game also entered Steam Early Access, and the community for *Noita* was formed.

6) **Enter the Workshop, 2020-2021:** The sixth timeline phase was titled "Enter the Workshop". This was an intense period between 2020 and 2021. The game is officially opened for modders and the development team continued to add content and features, along with patches to fix bugs in the game. At this stage, the game design process entered a sort of a "maximalistic" period, where the game was filled with content and things for players to discover. `The game was then officially released, and the community bloomed on Twitch, YouTube, and Discord.

**7) Enter the Vault, 2021:** The final timeline for the game is much shorter than others, consisting merely of events in 2021, and was titled "Enter the Vault." In this phase, the development of the game was over and was merely patched by the original creators.

Altogether, the timelines consisted of over 150 entries, with each accompanied with a time stamp, title and short explanations, such as:

> *Oct 2016 "Let´s make a roguelike". Making a roguelike is considered several times while making the game. Finally, the decision is made to try it in order to make the most out of the procedurally generated environments. It takes less than a day to turn the game into a roguelike, and initially, there is an option to switch between the old game and the roguelike. The change feels good right away. At the same time, the building elements are slowly left out.*

Our case study of *Noita* shows how rich the development path and the journey of a game idea can be and how the project does not fit the idealization of the game development processes for various reasons. It was also interesting to see how the roots of the game's idea

could be dated earlier than the emergence of first ideas, or development was reported to have started, as well as how the early prototypes had a role in shaping the idea closer to the start of the official work. In the idealized model for game development (e.g., the funnel of Fullerton), the design gradually narrows down as the launch approaches, however, in the case of *Noita*, the first exposure trailer of the game had a bigger role than the final launch. When the first trailer was released, the game design was forcefully locked to certain features. Despite this, the game was expanded later with additional content. Furthermore, it seems that the choice of genre, rogue-like, enabled and perhaps even accelerated the ideation at the end of the development phase (when the game was already in Early Access), making it possible to add a lot of content affecting the game design in multiple ways. Our case study calls for more studies looking at the causality between different aspects of the game and the shape of the development process.

## REFLECTION OF USING A TIMELINE METHOD

Our decision to use the timeline as our presentation format in the exhibition created an interesting setting for the triangulation of the research materials in building the development narrative.

We worked with several documents within the process, starting with spreadsheets of the events – and then placing them in a Google document in chronological order. We also provided the developers with a draft version of this document for them to provide comments while the research was on a summer break. In the end, this approach did not end up being efficient, although we did receive some comments from developers. The actual fitting of the events to the timeline by the research team, and comparing the information that we had from multiple sources, was deemed key to the critical fact checking. The timelines enabled parts of the development, which had not yet been discussed, to be visible, and highlighted the need for further interviews and engagement. While some parts of the timelines were filled in, we realized that there were also some gaps. The

timelines also revealed challenges in remembering events and dates (memory work).

For instance, the developers might have a memory of early childhood TV programs that were in reality broadcast much later in their lives, or that the time of certain ideas were later discovered to be in different timeline positions when the date of the concept art was checked. Timeline, as a structuring method, revealed discrepancies in the narratives from the interviews, which we would have not otherwise have questioned. We do not believe that this was unique to *Noita*, but typical when trying to recall any creative process.

The timeline method also changed the way we initially interpreted the journey of the prototypes and builds, based on interviews of the developers, and the second-hand materials. When the developers were interviewed, they used different names on the same prototypes and ideas, and when we tried to place them on the timeline, we had to clarify with each developer the exact prototype to which they had referred. In the end, we had to go back and forth with the developers, materials and our timeline. The images of the prototypes built in our heads did not match the actual prototypes.

Despite the critique against using timelines in the history sciences and museology, we believe that using them can be a critical method to map events in a game's development cycle when there is no access to an ongoing process. Developers tend to misremember the past, and therefore, using additional sources such as devlogs and assorted analysis notes can help to confirm certain events in the game's development. In our case, the community members were also able to help confirm the timelines. Fans often have more detailed memories than the developers themselves. As Sköld (2015) notes, hobbyist communities, formed around games, also document games, which can provide additional access into the details after the release.

## DISCUSSION

The use of the timelines in our case turned out to be not just a concrete way to show the long journey of game ideas for the audience

of the museum, but also a critical tool for our research work. Compared to our previous research experiences with interview studies, the development narrative got much deeper and more concrete. We believe that using the timeline method for structuring our findings, forced us to work on the topic more accurately and helped us to question the developers' personal narratives. It also helped us to adjust our own misunderstanding of the narratives shared in the interviews.

In this case study, we had exceptional access to the development story of a single game. The research materials that we gathered resulted in an archive of materials that will serve as a starting point for many other research projects that follow ours. As we had no prior experience in utilizing timelines in structuring the game development narrative, we worked on all aspects of our set of research materials. It is useful to ask whether one needs all of these data points to form an illuminating design timeline. Potentially, the same results could have been attained with a limited set of data, such as interviews combined with devlogs and game builds. In the end, we did not have access to *Noita*'s GitHub, an option that could prove useful in other research projects (cf. Khaled, Lessard & Barr 2018). However, when we requested confirmation of a date or resolution of a contradiction in our timelines, the developers themselves referred to their development notes on GitHub.

Even though we constructed timelines with over 150 entries, these entries were only illustrative of the different forces in the evolution of the design ideas. We ended up excluding some minor entries to create balanced timelines. However, given more time for the research project, we could have added more details to the entirety of the timelines. That said, the development process consisted of over a decade's worth of work, and we also inquired in factors pre-dating this work, so it is possible that some details may reflect false memories. Even though we were not able to do a full overview of all design decisions, situations, inspirations and influences, the timelines nevertheless showcase well the long journey of a game idea and the multitude of design situations of *Noita*.

We did not initially plan to include the early life inspirations and developments in the game's journey – nor the latter part of the development in the hands of the community. But these turned out to be important for us to build a holistic picture of the creative space of the development of *Noita* as a game. In the end, though, these influences were not fully covered. We were not able to go through all mods or community engagements. For the early inspiration, we purposefully asked the developers to name 10 games that they thought would have an influence on *Noita*. The limitations were set from the practical limitations of our exhibition work. It was interesting to see that the developers started to add to their list and noting how there were many more games that were influencing the design and creation process of their game. This could be an interesting separate research project, to continue looking at the various reference games and their relation to *Noita*. In the end, the game reference entries that ended up on the timelines, were only an indication of the multitude of the influences. Furthermore, it is possible that some of the games that the developers had played, also had an influence that they were not fully aware of.

Our access to the development materials was exceptional. We are aware that it is not possible to get the same access to all game projects, making O'Donnell's (O'Donnell 2014)) mention of access still a valid point. Furthermore, the development journey was so long that it was challenging to keep up with everything. In the end, we did not systematically go through all the material. For example, even though we had access to a large collection of builds (183), we did not spend a lot of time playing them. We were also not able to ask the developers to explain all their handwritten notes (81 pages) and sketches (146 pages). For the purpose of our project, we ended up selecting only a few (12) that represented the variety of the materials and the features of the game. This, again, ties back to the exceptional access of the data. In order to go through the entirety of the materials, we would have had to ask the developers to devote even more time for our interviews and inquiries.

In many of the timeline markings, we settled on finding out their

approximate placements on the timeline. It was often helpful to try to place them in relation to some other, more accurately timed, event. Here again, the temporality of timelines was a helpful tool. It could have been possible to check the order and timing of the design changes further, if we'd had more time to systematically go through all of the materials. More thorough triangulation of the materials could have been done if we'd had better resources, or if the duration of the selected game had been shorter.

It is also notable that *Noita* is a game that has a lot of secret content. While the community had not yet found all the secrets in the game, the developers also did not want to talk about their design history. In the end, the genre and the form of the game impacted access to the process. Even though our process was very extensive, not all stories were available.

It is also important to note that the timeline method might bias the nature of the design work, where ideas are revisited and perhaps placed "at the back of developers' minds" for an extended period. Ideas tend to linger in the discussions, and are vaguely considered at times, so there may be no clear point in time when the idea is abandoned or forgotten. Timeline asks us to simplify this phenomenon into specific pins within the linearity of the temporal space of the design process. At some point we did consider making arches or "blobs" in the visualization to depict this, but doing so ended up being too complicated and out of the scope of our project.

In the end, for this project, the timeline method proved to be a focal point for us to unravel the narrative of the changes and influences in the development of *Noita*. Structuring the creative journey of *Noita* into a timeline forced us, as well as the developers, to correct and recheck the original development narratives expressed in the interviews (and some external materials). The interplay of several sets of data made it possible for us to dig deeper into the process without a direct observation, which in this case, would have been impossible. While there are multiple instances of anecdotal evidence that some aspects of the *Noita* project are not unique, it is hard to challenge our

commonly accepted game development models based on a single case.

In contrast to research that predominantly focuses on specific phases or layers, such as pre-production and ideation in game development (e.g., Kultima 2010, Hagen 2009), or that utilize timelines to explore the general nature of design (e.g., Atman 2019), we argue that we need comprehensive exploration: mapping the extensive trajectories of game concepts in a holistic manner. Game productions exhibit diverse lengths, sizes, social dynamics, influences, and contextual nuances, yet discussions often oversimplify these complexities, leading to overly generalized perceptions of how games are, or can be made.

In order to further understand the commonalities and causalities in game development processes, we invite other game scholars to explore the timeline method and its variants in a quest for understanding game development and especially the creative work in more (accurate) detail. While there is a rich body of developers' reflections available in the form of conference presentations and blog posts, it seems to us that the narratives shared in those formats, akin to studies relying on mere interviews, are prone to biases. We need to base our understanding of game development, design and production on actual (descriptive) academic studies.

## CONCLUSION

In this paper, we have reflected upon the Timeline method for researching game development. While the method can create biases in creating temporally simplified narratives, the timeline does deepen and calls for accuracy in the memory work of the interviewed developers. The Timeline method helps researchers to question the developer narratives of the creators, which can be temporally skewed. The Timeline method forces us to focus on multiple details and their relation to each other.

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