



## Narrative Inquiry In Game Narrative Design

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### ABSTRACT

Storytelling is a part of human life long before writing. In the digital era, where images, audio, video, and text are used together, it unlocks new possibilities in delivering narratives, for instance, games. Narrative-based games have a long history. With increasingly sophisticated graphics technology, making it more and more popular. This study demonstrates a unique approach to game narrative design using the narrative inquiry method. Narrative Inquiry captures and analyzes life stories, then documents life events in their quintessence. The game tells the story of young entrepreneurs' journey in building their business, focuses on the elements of entrepreneurial skills required, and aims to motivate the entrepreneurial intention of the players. This research was conducted in three stages: narrative collection, narrative analysis, and scenario creation. Interviews were conducted with four young entrepreneurs from various businesses to collect narratives. Narrative analysis was carried out using a thematic approach. The narratives were transcribed, categorized, and cross-referenced among stories. The results were compiled as a game plot, then developed into a complete scenario with attention to the original narrative text. This example will provide a fresh perspective to designing game narratives from real-life stories.

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## 1. Introduction

Storytelling is one of the oldest forms of communication and has a central role as a tool for constructing patterns of human perception and knowledge [1]. Storytelling existed long before writing. Narrative pictures drawn on cave walls thousands of years ago, stories told between humans through verbal communication, to digital stories that fill our lives today [2].

The term "story" is often used interchangeably with "narrative". When verbal statements dominate, people use the terms story and storytelling. After the text got strength, the terms narrative and narrating became popular. Perhaps it is more appropriate to interpret that story is more related to the oral form, while narrative is more in written form [3]. However, in the digital era, where images, audio, video, and text are used together, the distinction between the two terms is increasingly blurred. In this paper, there is no distinction between story and narrative, and storytelling and narrating. Both emphasize the act of telling stories through the media.

The narrative has grown and evolved. Various media have been used in the narrative. Emerging digital technologies changes the complexity of narrative delivery and opens up new avenues and approaches that combine conventional narratives with digital technologies, including computers, smartphones, and virtual reality[4]. One form of narrative delivery that is widely used and increasingly powerful along with the increasing digital technology is video games. Narrative-based games are one of the oldest forms of games. Starting from text-based adventures, visual novels, RPGs, to cinematic adventure games. Narrative-based games prioritize stories in their games, while gameplay is used to make the story more immersive[5].



The presence of narratives in the current trend of the video game development industry is increasing. Narrative-based games are often termed "story-driven games". The goal of this genre is to experience the story through the game. It is the story that encourages the player to continue and engage in the game. The narrative is considered the main mode of engagement [6]. The story plot can increase the excitement of players so that it becomes one of the reasons why they choose certain games [7].

In the late 2000s, a growing number of video games released focused on creating narrative-oriented experiences in interactive gaming environments [6]. Some early examples include Bioshock (Irrational Games, 2007), Heavy Rain (Quantic Dream, 2010), The Witcher Series (CD Projekt Red, 2007-2018), and Mass Effect Series (BioWare, 2007-2022). In a survey conducted by [8], it was found that almost 70% of respondents paid great attention to dialogue and cut-scenes in the game, and the story largely determines whether they will finish the game or not. From observation on the Google PlayStore, narrative-based mobile games are still in great demand, such as Episodes (100M+ downloads), Choices (10M+ downloads), and Chapters (10M+ downloads).

Games with themes derived from true stories are also increasingly emerging, especially those from the autobiography of the game maker himself. The game with this theme focuses on conveying the developer's personal story of overcoming severe problems such as depression, alcoholism, and cancer, to let players experience what it's like to be in a disturbing situation [9]. This type of game is referred to by many as the sub-genre "Empathy Games". Vassiliki Khonsari, producer of the game "1979 Revolution: Black Friday", said that "The uniqueness of video games is that you have to be an active participant. Through that interactivity, a kind of emotional and cognitive investment is created in the consequences of your actions. It allows you to practice empathy because you try to understand a certain position and what the consequences of that position are." [10]. Some examples of successful games of this genre are Papo & Yo (Minority Media, 2012), Papers, Please (3909 LLC, 2013), This War of Mine (11 Bit Studios, 2014), That Dragon, Cancer (Numinous Games, 2016), and 1979 Revolution: Black Friday (iNK Stories, 2016).

In narrative-based games, players can interact directly with the story in several ways or forms, regardless of whether the interaction has a significant effect on the story. This is termed "interactive storytelling" [8] or "interactive digital narrative" [11]. Narrative design is to create a storyline, to be revealed little by little, when conditions have been met, in or between game moments [12]. Offering players options so they can progress through the story, has become a common design choice in games. Through mechanics like this, players feel that their choices have an impact on the narrative, resulting in a unique narrative experience for them [13].

Game design determines the level of interactivity a game provides to players. The spatial and sequential arrangement of the game frames, what interaction modes are needed, how much of a narrative changes the player interaction results, and most importantly how far the game can maintain the dramatic momentum that forces players to focus on playing. The main goal is to make the overall game experience correlated with the player's gameplay preferences, motivation, and enjoyment [1]. Therefore it is very important to make a game narrative that can make players believe that they are living their life in the game.

One way to make this happen is to create a narrative that is based on real-life, whether it be fragments of dialogue, characterization of in-game characters, or the entire game story. Narrative designers must recognize the value of certain experiences, in certain settings, involving certain people [14]. Narrative records the human experience through the construction and reconstruction of personal stories using its capacity to record and retell events that have a profound impact on life. Such issues play an important role in many areas of human activity. People interpret their lives according to the narrative available to them [15].

One method to 'capture' the whole story from someone's life is Narrative Inquiry. Narrative inquiry starts from the story of human life and relies on the assumption that humans apply story structures to their random experiences in an attempt to understand them [16], [17]. Narratives are not objective reconstructions of life but rather renditions of how life experiences are perceived [15]. Experience is seen as a link between the individual and the environment, generating knowledge and wisdom developed through emotions, feelings, and perceptions. The narrative inquiry seeks to understand the story by including the contextual, historical, social, institutional, and cultural influences that shape the narrative [18].

Although the narrative inquiry method has been widely used to write biographies [19], [20], digital storytelling [21], [22], and raises specific themes in various disciplines, such as psychology [23], [24], management [25], [26], and education [27]–[30], but its use in the game narrative design has not been specifically explored. So far, beyond games purely made for research, the authors have found only five

narrative-based games made by Ni3 (<http://www.noneinthree.org/>) whose stories are designed based on narrative research [31].

For this reason, this paper demonstrates the application of the narrative inquiry method in the narrative design of an interactive story game. This game will tell the story of young entrepreneurs' journey to build entrepreneurship from the start, focuses on the elements of entrepreneurial skills needed, and aim to generate entrepreneurial motivation in the players. The game's narrative is developed based on the experiences of four young entrepreneurs who developed their businesses from scratch. This research is important for the field of game studies because it addresses the need for game narrative design by providing a new perspective on approaching game studies.

Narrative-based games, The 2022 statistics from GamingScan show that the narrative factor occupies the third position of the factors affecting game purchases with 61%, just below the quality of graphics (66%) and price (63%). In addition, more than 73% of players prefer single-player games [32]. This shows that narrative is still one of the main concerns in playing the game, and players prefer to enjoy it personally. Narrative-based games have a wide range and develop in parallel in three main directions [33]. First, text-based. Included in this type are games such as interactive fiction (IF), hyperfiction (HF), and visual novel (VN). The IF game is a ludic environment in which the player observes a textual description of the simulated world, and interacts with the story by giving text commands [34]. Examples of successful games of this type are Zork Series (Infocom, 1980-1982), The Hitchhiker's Guide To The Galaxy (Infocom, 1984), Stories Untold (Devolver Digital, 2017), Dagon: By H. P. Lovecraft (Bit Golem, 2021).

HF games are a type of narrative game that uses hypertext links as a means of interaction between players and the game environment [35], including point-and-click adventure games. Some examples are Grim Fandango (LucasArts, 1998), Indiana Jones Series (LucasArts), King's Quest series (Sierra Entertainment). VN is sourced from an anime cultural context that shows narrative and ludic experiences with multi-branched text interactions that determine the ending. VN typically articulates its narrative through extensive text conversations that come with generic backgrounds and dialog boxes with character sprites as speakers. At certain key moments in the story, more detailed images are tailor-made for the scene and enhanced with more cinematic camera angles or include animations [1]. The best examples include Danganronpa: Trigger Happy Havoc (Spike, 2010), The House in Fata Morgana (Novectacle, 2012), Phoenix Wright: Ace Attorney Trilogy (Capcom, 2014), Syberia: The World Before (Microïds, 2022).

The second direction of development is in the form of Interactive Film/Movie. Interactive movie generates a new and engaging story experience for viewers by combining elements from traditional linear story forms and interactive digital media [36]. In digital format, this type is often referred to as a live-action game. Some quite famous examples are Black Mirror: Her Story (Sam Barlow, 2015), Late Shift (CtrlMovie, 2016), Chatterbox: Escape the Asylum (Adaptive Studio, 2017), Bandersnatch (Netflix, 2018), The Dark Side of The Moon (Tayanna Studios, 2021).

The third branch is cinematic adventure games. "Cinematic" is a general term used to describe the production of video games using various techniques used in the film industry [37]. This type of game merges the narrative genre with other genres to get a higher immersive experience for players. Successful examples of this type of game include The Walking Dead (Telltale Games, 2012), Life is Strange (Dontnod Entertainment, 2015), Detroit: Become Human (Quantic Dream, 2018), Marvel's Guardians of the Galaxy (Eidos-Montréal, 2021).

In narrative-based games, generally, the player acts as the protagonist of the story, requiring him to interact with various characters and game worlds, deciding on various choices that will determine his fate at the end of the story. This kind of games include little or no action elements, so they can be played at a desired pace, allowing players to linger in its dense graphics and detailed storyline. Thus players can enjoy the different dimensions and art of the game without having to race against fast-paced action within the strict time constraints. These features make the game setting interesting, even for people who are not usually proficient at gaming [1].

Narrative design, in-game choices should encourage a sense of engagement between the player and the game and allow players to feel that they have deployed their agency rights to the game world. The choice, or illusion of choice, if successful, will inspire the player to continue the game [13]. Based on the influence of interaction on stories, narrative design can be divided into six types, namely Fully Traditional Stories (FTS), Interactive Traditional Stories (ITS), Multiple-ending Stories (MES), Branching Path Stories (BPS), Open-Ended Stories (OES), and Fully Player-Driven Stories (FPDS) [8].

The FTS design does not allow players to interact with the story at all. A well-known example is Higurashi When They Cry (07th Expansion, 2009). In ITS no matter how much control is given to the player, the story does not change. Examples are Final Fantasy VII (Square Enix, 1997) and Metal Gear Solid 4 (Kojima Productions, 2008). MES allows players to get different endings even though the plot of the story goes the same. Examples include Chrono Trigger (Square, 1995) and Bioshock (2K Boston, 2007). Several selected series that can change the plot and ending are provided by BPS to players. Examples of such games are Heavy Rain (Quantic Dream, 2010) and Detroit: Become Human (Quantic Dream, 2018). OES is more complicated because the choices that change the plot or ending of the story are not very clear, and players can determine the ending of the story themselves, or even the game never ends. Examples include Fable III (Lionhead Studios, 2010) and Grand Theft Auto Series (Rockstar Games, 1997-2021). In FPDS total control is given to the player. The game only provides a setting, and players build their own story in that setting. Examples are The Sims Series (Maxis, 2000-2021) and Minecraft (Mojang Studios, 2011).

Game mechanics should be designed according to the meaning they want to give to the player. Otherwise, the meaning inferred from the game by the player will be different from what was assumed by the designer [38]. Offering players choices in narrative-based games can be viewed as narrative game mechanics. These mechanics not only form part of the rules of the game and the formal system of player interaction but are also related to the subsequent development of the game [13].

The first task of a narrative designer is to write plots and stories [39]. The plot is like a skeleton, that is, the structure of events that reveals the story from beginning to end. While the story is a plot that has been combined with characters and environments, it is reflected in the scenario in the form of details of each scene. But what should be remembered is that players are much more concerned about how the character reacts and changes in response to events, rather than the events themselves. Therefore, the behavior of the character must be "reasonable", in the sense that it corresponds to the game world and to the character itself [40]. Thus, the character design is no less important than the overall design of the story.

Narrative inquiry, narrative Inquiry is human-centered because it captures and analyzes life stories, then documents life events in detail while revealing a holistic view [15]. The narrative inquiry method applies description techniques in the form of scenes, plots, characters, and events, to draw narrative sketches or critical events that make up the narrative [41].

Unlike the research of positivism which seeks findings to be generalized into a single conclusion to discard "outliers", narrative inquiry seeks a different special meaning for each sound [42]. The narrative inquirer cannot escape his relationship with the participant's life. Throughout all stages of the investigation, from the negotiation of goals, the analysis of results, the creation of texts, and other issues, they will always be related [43]. Therefore, the narrative inquiry method has always been participatory. Investigation in narrative inquiry can be started in two ways, namely "telling" and "living" [44]. Most of them start with "telling", where researchers interview participants who tell stories. A much more complicated but profound way is "living", where researchers are together in participants' lives. The main version of "telling" is "storytelling", because the main product and emphasis are on the stories told by the participants. The emphasis of the research may be on the meaning interpreted by the researcher.

Data collection techniques in this method include surveys, observations, interviews, documentation and conversations. The data that has been collected is then arranged based on a narrative framework and then presented in the form of scenes, plots, characters and events related to critical events. It is this connection that makes narrative inquiry a powerful research tool [15]. In most narrative inquiry work that focus on storytelling, the primary methodology is interviewing. Of course, stories can be obtained in other ways, for example, by using autobiographical publications and other documents that can explain some aspects of the participants' lives.

After the data in the form of stories are collected, the next step is to conduct narrative analysis. The narrative analysis emphasizes content and meaning, which are sometimes revealed in structural form. The narrative of the story is not an exact representation of what happened, but rather a certain point of view of the construction of certain events, for a particular audience, for a specific purpose. Therefore, the context in which the narrative is constructed is very important.

Reading narrative material can be done through two approaches [45]. First, is holistic analysis, in which the narrative is considered as a whole, and part of the text is interpreted by looking at its relationship with other parts. Second, is categorical analysis, where parts of the text or words in it are categorized using coding strategies, then compare with similar texts from other narratives.

Thus, narrative researchers first focus on the meaning in each narrative. Researchers pay attention to both the content of the narrative and the structure of the narrative, also pay attention to what is unspoken or cannot be said. Once each participant's story is best understood, a cross-case analysis can be performed to find patterns across the text of individual narrative interviews, or to explore what could have made the difference between the experiences they are telling.

## 2. Method

The narrative inquiry method is classified as a qualitative research method [14]. According to Ruthellen Josselson, there has been no dogma or orthodoxy about how to conduct narrative research [45]. Therefore, this study uses two main steps in narrative inquiry, namely: narrative collection and narrative analysis, then adding the step of making game scenarios.

The narratives collected are stories from four young entrepreneurs, each from a different type of entrepreneur, namely: processing industry, crafts, cultivation, and engineering. Each participant was separately asked to tell their experience from starting an entrepreneur until they succeeded in developing it. The interviewer has an interview guide in the form of 27 important factors in entrepreneurial development, which come from the competency unit of the Indonesian National Work Competency Standards (SKKNI) for Industrial Entrepreneurship (Table 1). The interviewer is only in charge of recording the participant's story. He can only ask if there are factors that are not in the participant's story, or the story is out of theme.

**Table 1**  
Factors of entrepreneurial development

No.	Factor
1.	Conduct a market <i>survey</i> of a product
2.	Conducting a study of the production process of a product
3.	Conducting a <i>survey</i> of sources of raw materials and auxiliary materials
4.	Conducting an analysis of the cost of return on cost
5.	Determining the type of product to be worked on
6.	Calculating the cost of investments
7.	Determining the number and expertise of the workforce needed
8.	Managing industrial business licenses
9.	Procuring the necessary machinery and equipment
10.	Conducting labor recruitment
11.	Drawing up an organizational structure
12.	Creating a job description of each personnel
13.	Create a work procedure for each task
14.	Creating a work schedule of personnel in the production section
15.	Supervise labor performance
16.	Drawing up a production plan
17.	Drawing up a work plan in the production space
18.	Procuring raw materials and auxiliary materials
19.	Carrying out storage arrangements for raw materials, auxiliary materials, intermediate products, and final products
20.	Carrying out warehousing activities of raw materials, auxiliary materials, intermediate products, and final products
21.	Checking the types, specifications, and conditions of raw materials and auxiliary materials
22.	Supervise the course of the production process
23.	Conducting product promotions
24.	Conducting a <i>survey</i> of retail traders of a product
25.	Conducting product marketing
26.	Connect with customers
27.	Conduct financial bookkeeping for each transaction

The narrative recordings were then transcribed verbatim. The transcription results were read as a whole, then analyzed to categorize them based on 27 factors. After determining other game narrative aspects such as the game world and characters, the text sections that have been categorized are then arranged as plots in chronological order based on the overall narrative. Doubts and narrative gaps were consulted again with participants. The results of the analysis are not compiled into the form of a story anymore because the restory will be made in the form of a dialogue in the making of game scenarios.



Based on the plot that has been prepared and confirmed to the participants, a draft game scenario can be made. This draft scenario will act as a hybrid game core. Hybrid game core is a game core that can still be changed in several aspects according to the feedback received. It allows game designers to reflect on concepts and critically evaluate ideas by identifying important game elements [46]. The draft scenario is then developed into a scenario by providing a complete dialogue.

### 3. Results and Discussion

The interview for each participant lasted between 1-2 hours, with transcription results between 5500 – 8000 words. Transcription texts are analyzed in two stages. First, analyze the categories manually, by marking the transcription text with a color code. The analysis is emphasized on the content of the narrative, more on what than why. This approach is referred to as thematic analysis [47]. The thematic approach is useful for finding a common theme or event among the stories of several participants. As previously outlined, the categories are based on 27 factors of entrepreneurial development. In the first round of analysis, several gaps were found in each participant's story. Therefore, the researcher again contacted the participants to confirm. Participants were asked to retell the factors that have not been revealed in their previous stories. In the second round, participants' stories were again transcribed, categorized, and cross-referenced between stories.

Before compiling the plot, it is necessary to determine in advance what kind of world the player will live in the game, including the main characters he meets there. The game world is an artificial universe, a place of imagination in which game events take place [48]. The game world is in the player's fantasy. The game world will only become real when the player wants it [49]. The game designer can only specify the theme, environment, and various other settings. A good game theme has a resonance with the correctness of its players. "I want to be a successful entrepreneur" is the theme carried in this game. This is a truth that exists in the hearts of almost everyone, hence it is expected to resonate well.

The game environment set was the campus world. A campus is a transitional place between the world of youth and adulthood. When a person begins to enter the campus world, he is considered to be able to think about himself and his future. Therefore, the campus world is seen as the place that determines whether or not he succeeds in the future. Many dreams were started and realized there, including the dream of becoming a successful entrepreneur. In the campus environment, of course, the main characters that fits were the students. Game characters can be divided into two, namely non-player characters (NPCs) and player characters (PC) [50]. NPCs are characters controlled by the game system. PC is a fictional character who represents the player in the game or often also referred to as a persona/avatar. The persona should be designed realistically, as close as possible to the player [46]. In this game, the main persona was a college student. He/she and three NPCs who are also students, were freshmen who have a dream to become successful entrepreneurs together. All four came from middle-class families, like most Indonesians. With a setting like this, coupled with narratives derived from the results of narrative inquiry, it was hoped that it will be closer to the player's world so that the game can become more immersive.

In the second stage, a narrative analysis is carried out by arranging a chronological chain of events called a storyline or plot. At the time of the interview, participants often told stories in random order. Researchers would find that interview transcript were irregular notes that need to be organized in a series of chronological events [51]. The plot serves to turn the list of events into a scheme by highlighting the interrelationship of certain events to the development of the story. Without this interrelationship, each event would appear disjointed and mutually separate and its meaning would be limited to the identification of its category alone [52]. To be able to organize the plot, the narrative must be analyzed by identifying three elements, namely time, place, and events [53].

Plots were arranged based on the text parts that have been categorized, not all participants have the same chronology of events. For example, our craft entrepreneur, let's call her WK, which has a women's accessories handicraft business, is currently one of the suppliers of accessories products sold in the inflight shop of national airlines and often exhibitions abroad. She did not conduct a market survey first to choose the type of business, but was forced to start from product expertise.

"I used to be a marketing person in one of the SMEs. During the events, customers sometimes ask, what the model is, and what the material is, so I have to learn. Every time I go home I study again, disassemble it one by one, and retrace how to do it...."

".... In the past, my mother died because I couldn't buy medicine, and I had to wait for a payday. If I want to have the money right now, that means that I have to have a business. The only expertise I have is just that, making crafts. Finally, I had my own business. Made it in the night, and sold it in the afternoon around from elementary school, junior high school, campus." In contrast to the processing industry entrepreneurs participant, let's call him WP, which has a local chicken nugget processing business whose marketing area covers several districts in two provinces. WP started one venture by first doing a market test.

"I'm a field person. What products that can be sold, I see in the market. I've run various kinds of business, like clothes and books, but I feel most suitable in the food business because the people in this country like to eat. Many foods can be businesses. I chose a product for two reasons. First, match with my existing market channel. Second, the turnover during the fasting month. During fasting, the turnover of chips plummeted, salted eggs fell by 50%, but quail eggs rose by 30%. Therefore, I still sell quail eggs until now. Tempeh and tofu industries complain during the fasting month. Well, during the fasting month, the foods that rise on market are the delicious ones. One of them is nuggets, which is up 30% on the market."

With so many possible storylines to choose from, the right form of plot to use is the branching path story (BPS). Games with nonlinear stories allow for multiple endings. Multiple endings can enhance the "illusion of player freedom" [54].

BPS has multiple endings, but unlike MES, players do not follow the same path to achieve it. This leaves players with greater control over the story. BPS has a rigid decision point and story branch structure. The player can influence the storyline through the decisions he makes at any point, but the author is in complete control of the story for all branches. A good story structure combined with the freedom to choose a story line, makes BPS still in demand until now. In BPS, branches are divided into 3 groups, namely small, medium, and large [8]. Small branches do not influence the story and are only useful for providing several different versions of a scene. While not making an impact, small branches can be used to deepen the story, build characters, or give players clues. Medium branches will join the main line longer than small branches. This allows players to go through completely different scenarios yet with the same goal. Large branches significantly change the story, and generally determine the ending.

The plot was constructed using parallel pattern branching structure to ensure the story content could still be managed properly. In parallel structures, the story branches can converge again at certain points [54]. Branching in the plot was created based on the results of cross-referencing between the narratives from the four participants. It generally indicates that there were differences in important decision-making. For example, in making decisions on the source of business capital. The participant in the engineering industry, whom we refer to as WR, owns a software engineering business. It requires a fairly large initial investment so from the start it has been decided to look for investors.

"Here we need a fairly large capital. Thus, we have to find investors. But I still avoid borrowing from the bank. For me, it's better to find an individual investor." Meanwhile, WK due to family conditions, decided to start with a modest capital. "My mother is a cigarette seller, my father is a security guard. If I want to make a business, there must be capital, and the money must be a lot. That's what I thought first. But there was a friend of mine, who started from scratch like me, and her business was thriving. Now she has exported her products to four countries. That's where I learned. When I first opened the business, my capital, if I'm not mistaken, was only 50,000 rupiah, just the remaining of that month's salary. There was someone who wants to give me a loan, but I declined. Because I haven't started the business yet and the money would definitely run out first."

In contrast, WB, our aquaculture entrepreneur, who has a betta fish farming business with online customers covering almost all of Indonesia. He started the business by borrowing capital from his parents.

".... I was a student, where did I have the money from. Maybe because they saw that I was diligent with my hobby, my parents wanted to lend money for capital." It was from such distinctions that branches were created. The final plot contains 22 choices, which were split into 61 branches, and has 10 endings. The endings were divided into three groups, namely one successful ending, 3 endings were quite successful, and 6 endings were failed. Overall, the plot line can be seen in Figure 1. The circle indicates the story point and the star indicates the ending.

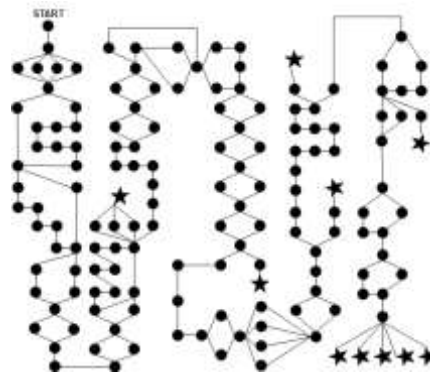


Figure 1. Plot plot

This plot was then consulted back to the four participants to ensure that the plot did not conflict with their actual experience. Furthermore, a draft scenario was created for each scene in the game. Scenes are narrative fragments. Players can only move forward in the story by moving from one scene to the next, through an action. The original narrative should not be forgotten in scene creation, especially in the dialogue. For example, the dialogue in the scene design as shown in Table 2, was an adaptation of the original narrative from WB, WK, WP, and WR, as shown below.

WB has been marketing through social media channels since its inception and is still its main channel. "Selling it online, especially through social media. I use IG, Facebook, and WA. In addition, I also open stores in Tokopedia and Buka Lapak. But indeed, most orders came from social media, because from the beginning I have used them. While from the marketplace, there were only a few sales." "... oh I don't sell offline. Some neighbors and friends were bought directly here. But I didn't count them as sales....."

Likewise, WR preferred online marketing, although he also does direct marketing selectively. "Because this is a digital product, users also have high digital awareness, so I use more online channels. From company websites, blogs, and social media as well. Some people specialize in handling it...." "For some shortlisted potential customers, we usually prepare proposals and submit them directly. We follow up directly as well."

Meanwhile, WK preferred the offline marketing channel through exhibitions, mainly because of the limitations of its capabilities related to the use of technology. "... I didn't use to using technology. Some time ago, a few college students taught me to make a website, buy a domain and hosting... oh.. it was really hard to understand. Since the beginning, I just used direct selling. Most of them were through exhibition events..... until now." "I only used the online channel for resellers.... I only used Facebook and Instagram."

Like WK, WP also had a strong offline market channel. The online channels were used for promotion only. "... it is indeed my specificity. I went door-to-door, that's what my colleagues didn't have.... I distributed the products directly into the market.... that's why my distribution time is long. I can send it in the morning, noon, afternoon, or even night." "... when I came to each outlet, at the same time I could ask about their needs and the products. So I could grasp the wishes of the market and buyers more quickly...." "My promotion is just through that, WA and Instagram."

The differences between these several narratives were adopted into dialogue so that it is more alive.

**Table 2.**  
Scene design

Scene name:	Choosing a marketing channel
Description:	The four aspiring young entrepreneurs talk about which marketing channel should be chosen as the main channel for their product
Characters involved:	- <Player> - Ammar - Olivia - Robby
Places:	Olivia's House – Living room
Dialogue:	<b>Olivia:</b> So what do you guys think... now that the product and the customer are set. What channel do we want to market this in the future? <b>Ammar:</b> Of course sell it directly... through online channels too, marketplaces, social media. We have to use it all... <b>Olivia:</b> I mean our first and main channel. We can't use all the channels



	simultaneously... it's impossible to handle. They will fall apart.
	<b>Robby:</b> I think you're right... we have to choose one main channel that is most profitable. We will develop other channels gradually.
	<b>Ammar:</b> In my opinion, in the beginning, we use direct marketing. We sell directly to customers. That way we can simultaneously capture the opinions of customers, as well as their needs that have not been met by our products. We will be able to follow up faster.
	<b>Robby:</b> Hmm... but it takes a lot of manpower, right... while we still have a lot of work. I think we better start off going online, especially on social media. It spreads quickly, reaching more and more potential customers. If it can go viral, surely the number of customers will quickly explode.
	<b>Olivia:</b> You both have a point. What do you think about elu <Player>?
Options:	Online marketing paths
	Offline marketing path
	Both paths are simultaneous

As previously stated, scenario drafts are dynamic concepts and can be changed throughout the game development process. Each scene will continue to change and develop in full, adding various items such as sounds, sprites, special effects, and more.

#### 4. Conclusion

In narrative-based games, the story is the key to player engagement. To design a game narrative that is close to reality, it takes the right method to extract life stories into interesting game scenarios. The method that is very suitable but rarely used is narrative inquiry. With more and more games using true stories as the basis for their narratives, examples of the use of this method in game narrative design prove that narrative inquiry is a powerful method to use. With this method, game narrative designers can use the experiences and life stories of others to design game narratives, not solely from their imaginary world, or from their personal experiences. This article provides fresh insight into game studies. The examples provided can be a strong guide for game narrative designers who want to convey real-life stories in the form of games.

#### Reference

- [1] D. Cavallaro, *Anime and the visual novel : narrative structure, design and play at the crossroads of animation and computer games*. North Carolina: McFarland & Company, Inc., Publishers, 2010.
- [2] E. Çetin, "Digital storytelling in teacher education and its effect on the digital literacy of pre-service teachers," *Think. Ski. Creat.*, vol. 39, p. 100760, Mar. 2021, doi: 10.1016/j.tsc.2020.100760.
- [3] S. Hong, J.-A. Kang, and G. T. Hubbard, "The Effects of Founder's Storytelling Advertising," *Int. J. Entrep.*, vol. 22, no. 3, pp. 1–10, 2018, [Online]. Available: <https://www.abacademies.org/abstract/the-effects-of-founders-storytelling-advertising-7518.html>.
- [4] M. D. H. Rahiem, "Storytelling in early childhood education: Time to go digital," *Int. J. Child Care Educ. Policy*, vol. 15, no. 1, 2021, doi: 10.1186/s40723-021-00081-x.
- [5] W. Nurcahyo, B. Wibawa, and R. Rusmono, "Entrepreneurship education game for high school students based on Indonesian national work competency standards: The scenario development," *Int. J. Adv. Sci. Technol.*, vol. 29, no. 4 Special Issue, pp. 1589–1600, 2020.
- [6] K. Cameron, "Narrative and Gameplay Design in the Story-Driven Videogame: a Case Study on the Last of Us," Auckland University of Technology, 2017.
- [7] E. N. M. Ibrahim, N. Jamali, and A. I. H. Suhaimi, "Exploring gamification design elements for mental health support," *Int. J. Adv. Technol. Eng. Explor.*, vol. 8, no. 74, pp. 114–125, 2021, doi: 10.19101/IJATEE.2020.S1762123.
- [8] J. Lebowitz and C. Klug, *Interactive Storytelling for Video Games: A Player-Centered Approach to Creating Memorable Characters and Stories*. Oxford: Elsevier Inc., 2011.
- [9] K. Wallace, "Demon Slayers: Gaming Tackles Real Issues - Game Informer," <https://www.gameinformer.com/2014/06/25/demon-slayers-gaming-tackles-real-issues.aspx> (accessed Jun. 01, 2022).
- [10] J. Dussault, "Empathy games tread thin line between 'edutainment' and virtual voyeurism - CSMonitor.com," <https://www.csmonitor.com/2017/0920/Empathy-games-tread-thin-line-between-edutainment-and-virtual-voyeurism> (accessed Jun. 01, 2022).
- [11] L. Kolhoff and F. Nack, "How Relevant Is Your Choice?," in *Interactive Storytelling*, 2019, pp. 73–85, doi: 10.1007/978-3-030-33894-7\_9.
- [12] R. Berger, *Dramatic Storytelling & Narrative Design: A Writer's Guide to Video Games and Transmedia*. Boca



- Raton: CRC Press, 2020.
- [13] K. M. McGill, "The Digital Lineage of Narrative: Analyzing Interactive Fiction to Further Understand Game Narrative," in *Games and Narrative: Theory and Practice*, B. Bostan, Ed. Cham: Springer International Publishing, 2022, pp. 77–90.
  - [14] S. Pinnegar and J. G. Daynes, "Locating Narrative Inquiry Historically: Thematics in the Turn to Narrative," in *Handbook of narrative inquiry: mapping a methodology*, D. J. Clandinin, Ed. California: Sage Publications, Inc., 2007, pp. 3–34.
  - [15] P. Mertova and L. Webster, *Using narrative inquiry as a research method*, 2nd ed. Oxon: Routledge, 2020.
  - [16] J. S. Bell, "Narrative Inquiry: More Than Just Telling Stories," *TESOL Q.*, vol. 36, no. 2, p. 207, 2002, doi: 10.2307/3588331.
  - [17] R. Leitch, "On being transgressive in educational research! An autoethnography of borders," *Irish Educ. Stud.*, vol. 37, no. 2, pp. 159–174, Apr. 2018, doi: 10.1080/03323315.2018.1471412.
  - [18] A. H. James, D. Watkins, and J. Carrier, "Perceptions and experiences of leadership in undergraduate nurse education: A narrative inquiry," *Nurse Educ. Today*, vol. 111, no. September 2021, p. 105313, Apr. 2022, doi: 10.1016/j.nedt.2022.105313.
  - [19] V. G. Mokuria and D. Wandix-White, "Cinder and soul: The biography of a historically significant African american school in Dallas, Texas," *J. Soc. Stud. Educ. Res.*, vol. 12, no. 1, pp. 76–94, 2021.
  - [20] D. Herman, "Modernist life writing and nonhuman lives: Ecologies of experience in virginia woolf's *flush*," *MFS - Mod. Fict. Stud.*, vol. 59, no. 3, pp. 547–568, 2013, doi: 10.1353/mfs.2013.0034.
  - [21] B. Thompson Long and T. Hall, "Educational narrative inquiry through design-based research: designing digital storytelling to make alternative knowledge visible and actionable," *Irish Educ. Stud.*, vol. 37, no. 2, pp. 205–225, 2018, doi: 10.1080/03323315.2018.1465836.
  - [22] L. Topouzova, "Truth and subjectivity in narrative inquiry: augmented reality & digital storytelling in the university classroom," *J. Vis. Lit.*, vol. 40, no. 2, pp. 94–103, 2021, doi: 10.1080/1051144X.2021.1902045.
  - [23] G. O' Grady, "An entry into a creative, rhizomatic narrative inquiry into young people's identity construction," *Irish Educ. Stud.*, vol. 37, no. 2, pp. 255–274, 2018, doi: 10.1080/03323315.2018.1471411.
  - [24] M. D. H. Rahiem, R. Ersing, S. E. Krauss, and H. Rahim, "Narrative inquiry in disaster research: An examination of the use of personal stories from the child survivors of the 2004 Aceh tsunami," *Int. J. Disaster Risk Reduct.*, vol. 65, no. March, p. 102544, 2021, doi: 10.1016/j.ijdrr.2021.102544.
  - [25] J. O' Toole, "Institutional storytelling and personal narratives: reflecting on the 'value' of narrative inquiry," *Irish Educ. Stud.*, vol. 37, no. 2, pp. 175–189, Apr. 2018, doi: 10.1080/03323315.2018.1465839.
  - [26] J. P. Perez's, J. D. Poblete, and L. V. Giray, "A Narrative Inquiry Into the Role of Social Media in Online Businesses in the Philippines," *Prof. Discourse Commun.*, vol. 4, no. 1, pp. 37–45, Mar. 2022, doi: 10.24833/2687-0126-2022-4-1-37-45.
  - [27] J. Trebilcock and C. Griffiths, "Student motivations for studying criminology: A narrative inquiry," *Criminol. Crim. Justice*, vol. 22, no. 3, pp. 480–497, Jul. 2022, doi: 10.1177/1748895821993843.
  - [28] S. Lessard, V. Caine, and D. J. Clandinin, "Exploring neglected narratives: understanding vulnerability in narrative inquiry," *Irish Educ. Stud.*, vol. 37, no. 2, pp. 191–204, 2018, doi: 10.1080/03323315.2018.1465835.
  - [29] L. Haas, S. Vasinda, J. McLeod, and J. T. Tussey, "Expanding Family Literacy through Video Game Playographies," *J. Lit. Technol.*, vol. 22, no. 1, 2021.
  - [30] G. Wei, "Imagined professional identity: A narrative inquiry into a Chinese teacher's perezhivaniya in life," *Teach. Teach. Educ.*, vol. 102, p. 103337, Jun. 2021, doi: 10.1016/j.tate.2021.103337.
  - [31] A. Powell, "True stories: Storytelling and empathy in *None in Three's* digital game narratives," *B. 2.0*, vol. 10, no. 1, pp. 99–115, 2020, doi: 10.1386/btwo\_00022\_1.
  - [32] GamingScan, "2022 Gaming Industry Statistics, Trends & Data (Biggest Study)," 2021. <https://www.gamingscan.com/gaming-statistics/> (accessed Jun. 02, 2022).
  - [33] H. Koenitz, G. Ferri, M. Haahr, D. Sezen, and T. İ. Sezen, "A Concise History of Interactive Digital Narrative," in *Interactive Digital Narrative: History, Theory and Practice*, H. Koenitz, G. Ferri, M. Haahr, D. Sezen, and T. İ. Sezen, Eds. New York: Routledge, 2015, pp. 11–21.
  - [34] M. Hausknecht, P. Ammanabrolu, M. A. Côté, and X. Yuan, "Interactive fiction games: A colossal adventure," in *Proceedings of the AAAI Conference on Artificial Intelligence*, 2020, vol. 34, no. 5, pp. 7903–7910, doi: 10.1609/aaai.v34i05.6297.
  - [35] D. E. Millard, "Games/Hypertext," in *Proceedings of the 31st ACM Conference on Hypertext and Social Media*, Jul. 2020, pp. 123–126, doi: 10.1145/3372923.3404775.
  - [36] K. Johnson, "Lost cause, an interactive film project," in *Proceeding of the 16th ACM international conference on Multimedia - MM '08*, 2008, p. 569, doi: 10.1145/1459359.1459435.
  - [37] R. Newman, *Cinematic game secrets for creative directors and producers: inspired techniques from industry legends*. Oxford: Elsevier, Inc., 2009.
  - [38] B. A. Larsen and H. Schoenau-Fog, "The Narrative Quality of Game Mechanics," in *Interactive Storytelling*, vol. 10045, F. Nack and A. S. Gordon, Eds. Cham: Springer International Publishing, 2016.

- [39] M. Breault, *Narrative Design: The Craft of Writing for Games*. Boca Raton, FL: CRC Press, 2020.
- [40] P. Lacombe, G. Féraud, and C. Rivière, *Writing an interactive story*. Boca Raton, FL: CRC Press, 2020.
- [41] F. M. Connelly and D. J. Clandinin, "Stories of Experience and Narrative Inquiry," *Educ. Res.*, vol. 19, no. 5, pp. 2–14, Jun. 1990, doi: 10.3102/0013189X019005002.
- [42] B. Morgan-Fleming, S. Riegler, and W. Fryer, "Narrative Inquiry in Archival Work," in *Handbook of narrative inquiry: mapping a methodology*, D. J. Clandinin, Ed. California: SAGE Publications Ltd, 2007, pp. 81–98.
- [43] D. J. Clandinin and J. Rosiek, "Mapping a Landscape of Narrative Inquiry," in *Handbook of narrative inquiry: mapping a methodology*, D. J. Clandinin, Ed. California: Sage Publications Inc., 2007, pp. 35–76.
- [44] F. M. Connelly and D. J. Clandinin, "Narrative Inquiry," in *Handbook of Complementary Methods in Education Research*, J. L. Green, G. Camilli, P. B. Elmore, A. Skukauskaiti, and E. Grace, Eds. Lawrence Erlbaum Associates, Inc., 2006, pp. 477–488.
- [45] F. J. Wertz, K. Charmaz, L. M. McMullen, R. Josselson, R. Anderson, and E. McSpadden, *Five ways of doing qualitative analysis: phenomenological psychology, grounded theory, discourse analysis, narrative research, and intuitive inquiry*. New York: The Guilford Press, 2011.
- [46] G. Kalmpourtzis, *Educational Game Design Fundamentals: A Journey to Creating Intrinsically Motivating Learning Experiences*. Boca Raton, FL: CRC Press, 2019.
- [47] C. K. Riessman, "Narrative Analysis," in *Narrative, Memory & Everyday Life*, C. Horrocks, B. Roberts, K. Milnes, N. Kelly, and D. Robinson, Eds. Huddersfield: University of Huddersfield, 2005, pp. 1–7.
- [48] E. Adams, *Fundamentals of Game Design*, 2nd ed. Pearson Education, Inc., 2010.
- [49] J. Schell, *The art of game design : a book of lenses*, 3rd ed. Boca Raton, FL: CRC Press, 2020.
- [50] P. Lankoski, *Character-driven Game Design: A Design Approach and Its Foundations in Character Engagement*. Jyväskylä: Aalto University, 2010.
- [51] A. Nasheeda, H. B. Abdullah, S. E. Krauss, and N. B. Ahmed, "Transforming Transcripts Into Stories: A Multimethod Approach to Narrative Analysis," *Int. J. Qual. Methods*, vol. 18, p. 160940691985679, Jan. 2019, doi: 10.1177/1609406919856797.
- [52] D. Polkinghorne, *Narrative knowing and the human sciences*. Albany: State University of New York Press, 1988.
- [53] L. Webster and P. Mertova, *Using narrative inquiry as a research method: An introduction to using critical event narrative analysis in research on learning and teaching*. Oxon: Routledge, 2007.
- [54] C. Solariski, *Interactive stories and video game art: A storytelling framework for game design*. CRC Press, 2017.