The Need for Humans in Game Development.

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Introduction

The computer game development industry has undergone numerous changes and challenges over its more than 80-year lifespan, resulting in the adoption of new languages, libraries, engines, technologies, hardware, and devices. Every one of these dramatic shifts completely changed new games, allowing for the creation of even more unique and amazing experiences.

But it is the first time in the history of this amazing craft when the changes in nature are not just a need for learning a new system or technology, it is something scarier and tempting at the same time. It is the first time that people can be replaced by algorithms. We are one step before fully diminishing interactions between players and developers as authors in games, but is this what we wanted? Can we just trust the machine to create every part of the game which will be played by humans? Will those games be enjoyable and fun? Is a human even required in the development cycle of enjoyable games? I believe that the answer to this question is yes. Game development and design is not just about making content or code systems (which can be replaced even nowadays), games are a source of emotions and experience, which developers want to share with other people (Schell, 2008). Even another person will struggle to design and make a source of emotions and experience the same way as he expects. It is simply impossible for any kind of technology to predict what an actual player will feel. We see how even professional game designers can't just trust and go for the first idea they get. Instead, they make a countless number of prototypes to make one which feels right and give birth to a unique experience (Schell, 2008). Involving developers to deeply understand and modify the smallest bits and holes in the development of a game. If we let an algorithm or a tool do all this, we lose control over the exact details which refine the whole experience. It is the same concept as asking a language model to write an essay in a language that we don't know. We will not be able to edit the grammar in this essay if we can't even read it.

Discussion

First of all, to answer a final and scary question, we need to understand what is the reasons why people play games, but even this question is not straightforward without a clear understanding of what the games actually are.

So, what is a game? The word “game” has a lot of different definitions, which have a hard time explaining what we usually name as a game. It is rare to even see fun as part of these definitions, so it will be a nice approach to find answers from game designers. Some designers offer their own definition of this word, and commonly, every single one differs from the others (Koster, 2014). Raph Koster himself gives it an interesting definition as “Games are just exceptionally tasty patterns to eat up”. Jesse Schell starts his description of a game with the phrase “A game is something you play.” This is a self-explanatory definition, and it is hard to debate with it. So to answer this question, we need to understand what “play” is (Schell, 2008).

So let’s start with getting a bit more deeply into the definition of “play”. What is play? “Play is whatever is done spontaneously and for its own sake.” – George Santayana. We can argue about the spontaneity of games, which is not always true, but an important part of a play is that it’s done for its own sake. We can’t name something play anymore if we are forced to do it without our own interest or simply sake. Even work in some examples can easily become play if we have our own personal goal, interest or sake for doing it. The more we are forced to do certain things, the more it feels like work, rather than play. And this works backwards, the more it feels like play. “Whoever must play cannot play”. Jesse Schell suggests his own vision for play as action in which the game is born: “Play is manipulation that indulges curiosity.” – Jesse Schell. This definition tries to interpret our inner motivation and curiosity to find answers to simple questions like: What will happen after this level? Can I beat my last record? Can we defeat this enemy? What happens when I press this button?. (Schell, 2008)

Considering how wide the definition will be to cover everything that we count as a game, it is easier to list essential key aspects which allow an artefact to be considered a game:

- Games are entered wilfully.
- Games have goals.
- Games have conflict.
- Games have rules.
- Games can be won and lost.
- Games are interactive.
- Games have challenges.
- Games can create their own internal value.
- Games engage players.
- Games are closed, formal systems.

(Schell, 2008).

After getting some understanding of the meaning and definition of what games are, we can say that people have some motivation or curiosity to play games; this is the basis for understanding why people even play games. Most likely, if you ask the player why he is playing, you expect an answer: “I find playing games fun”, but can any game be fun? So, now to progress into answering why people play games, it is essential to understand what is fun and what is not. If any game is fun, why aren’t we playing tic-tac-toe?

Word fun comes from “fool” or from “pleasure” in different interpretations. But the main meaning is “a source of enjoyment”, not only as physical or mental joy, but also as chemical manipulation. Fun is the release of endorphins. It is a lot of different sensations based on cocktails of chemicals. The pleasurable chills from listening to powerful music are caused by the same chemicals that the person gets from having cocaine, an orgasm or chocolate. (Our brain is technically on drugs all the time) (Koster, 2014)

All these insights might be useful for understanding the core of fun, but why do we even need fun as a species? Fun is an important survival mechanism which pushes the human species to adapt, learn and master new skills or tasks. As a reward, fun is a moment of pleasure about an accomplished scenario. “Fun is just another word for learning.” (Koster, 2014)

On the other side of the coin is boredom – the absence of fun. Boredom is the brain’s reaction to the inability to learn. It is a mechanism that pushes us into doing something that can lead to new information or simply fun. Boredom occurs when we lack cognitive challenges. The whole idea around learning desire doesn’t mean that it must be a completely new experience; just new data is enough for the brain to start having fun (Koster, 2014). This is an exact explanation to question why tic-tac-toe is not as fun as other games can be. But the absence of data is not the only reason why a game cannot be fun. Sometimes we experience “sensory overload” when the brain receives overwhelming and complex data. This state is the opposite of “sensory deprivation” (Koster, 2014). For the game to stay fun, it needs to balance between deprivation and overload. We get bored once we master a skill or realise that we can’t get better (Koster, 2014). The most popular reasons for a game to become boring are:

- The game doesn’t show any challenge quickly enough.
- Players get overwhelmed with depth, which he thinks is out of his own interest.
- Player doesn’t catch the patterns and sees the game as noise.
- Player finds the difficulty ramp too slow, which makes the game look trivial.
- Player finds difficulty ramps too quickly, which makes the game feel noisy and/or hard.
- Player masters the whole pattern and doesn’t see any more challenges. In other words, he beats the game.

It is important to note that not all of these reasons of boredom will leave the same expression on the player. A good game is “One that teaches everything it has to offer before the player stops playing.” A big part of the fun in games is based on learning or mastering a certain skill set, but it is important to remember that we can be easily overwhelmed or underwhelmed by

the challenge that we are facing. Everything is not as simple as “learning makes games fun”. We need to take into account a lot of small variables to make people enjoy, struggle, learn and master without getting bored. (Koster, 2014)

It is important to consider fun, but is it the only reason to play? I believe no. Sometimes people can say that games are amazing teachers, but why? A big part of learning dominance of games is the example of Miller’s pyramid of learning. This model mentions learning as steps towards full acknowledgement, it includes steps such as: “Knows”, “Knows how”, “Shows”, “Does”. Games are located in an interesting spot in this model. They focused immediately on the last step – “Does”. Most of the experience and learning in games happens in practical examples, where we rarely have explanations, we practice without even though. This achieves the best results in learning, even sometimes by skipping the explanation and knowledge part (Schell, 2008).

No less important is how games are changing players. It is a controversial topic. Some people can say that games have a dangerous effect on people’s brains, causing violence and addiction, at the same time as other people completely deny any long-term effects from games. On the other side, we see movement of games which trying to teach people and showcase important things that most of us are missing, even changing the whole worldview of players. (Schell, 2008) Not all games lead to the same emotions and experiences. Some of them could help emotionally get through hard personal issues, help vent anger and frustration, cheer the player up, build confidence or simply relax (Schell, 2008).

Games are a unique and useful tool to help people connect, acting as some sort of social bridge, building mutual interest among speakers or just by making communication easier with each other by solving problems together, which will lead to shared memories after a game ends. (Schell, 2008)

Games can affect our lives, but the thing that actually transforms our lives is experience, and this is exactly what the whole goal of every game is: to share, create or imagine experience. Exactly, experience changes our way of thinking and the way we see the world, from simple communication patterns that we use on a day-to-day basis, up to deep thoughts and the way we think about simple things. Every aspect of our lives is shaped by our experiences in the past. Games are just perfect for making people have this experience with minimal friction. So every developer should question themselves at one point, “How can my game change players for the better/worse?” (Schell, 2008)

Returning to the original question, why do people play games? I believe that now this is a straightforward question. Games are part of our lives; they are an experience. People seek fun, emotions and experience in a way that allows them to experience something new without much friction. It is easier and much safer to play a game about a submarine expedition than actually to be in one in real life. Of course, experience will be completely different, but it will achieve the goal of fulfilling the player with new experience, mechanics, story and struggles that might be completely new for a player. We have our internal, nearly infinite source of curiosity, and this urge for new data is pushing us to gather new experiences, and games just happen to be the “…exceptionally tasty patterns to eat up”. (Schell, 2008; Koster, 2014)

Getting back to the argument, considering the numerous variables, can we simply trust the design to the machine? I believe the answer is strictly “No”. Games are not just a piece of content and code in the engine. Games are something unique, which allow us to share experiences, teach us, help with our struggles, connect with other people, and open our eyes to something we never thought about. Games are shaping us, and this shaping requires an amazing level of balance and thoughtfulness to stay healthy and enjoyable. Game Designers spent nearly a century learning and trying to understand how to share their ideas and goals with players through a piece of software, creating a unique experience from cold bits and bytes on our computers. This is just impossible with current technologies to explain these principles to an algorithm which can only find and recreate patterns.

So how do designers overcome all these problems with design? The most valuable tools that they use are prototyping and playtesting. But what are prototyping and playtesting, and why do we need to use them?

The word “Prototyping” means creating a rough example of the final product to have the opportunity to test how it works beforehand. This allows designers to make great designs through a repetitive process of testing and adjusting the project without a giant loss of development progress if some mechanics don’t work (Fullerton, Swain and Hoffman, 2004). The main advantage is adjusting mechanics in their purest form. If this pure mechanic already brings joy and interest to players, all later details will only enhance the whole experience. The basic mechanical design of the most successful games is extremely straightforward, and this allows designers to carefully control and lead the game model to the way it will function (Fullerton, Swain and Hoffman, 2004). But making game design is harder than it sounds, and it has a lot of limitations on its own. For example, it is important to remember that a player is a person and we have some limitations. An interesting example is the limit of processing information. Human beings can track and control around 7±2 ideas at the same time (Miller, 1956). It is easy to fall for the mistake of making the design overcomplicated.

The second part of the toolkit is “Playtesting”, as it can be easily mistaken, the process of playtesting is not an internal design review and is not necessarily bug testing. It is a process of gathering information about what players feel and experience while playing the current state of the game (Fullerton, Swain and Hoffman, 2004). Playtesting helps enhance and refine the player experience in the final product by assisting with identifying and resolving design and technical flaws at relatively early stages of development. This step connects developers with the final consumer as a player by giving feedback on the current game experience (Mirza-Babaei, Moosajee and Drenikow, 2016).

Prototyping and Playtesting are simply the main and most efficient ways of creating good and enjoyable game design. Every successful game was made through a large number of iterations and development cycles. Even if we challenge ourselves to make a game without

playtesting, we most likely will fail due to the need to test the currently modified or created mechanic. This is an essential and core aspect which we can see even in the design of game engines. The approach of the immediate in-editor playtest was designed to merge the development process with playtesting as closely as possible. (Technologies, no date)

If we abstract and replace the complete development cycle with a prompt leading to the full game, which is the only way to completely replace all people in the game development cycle, we will be in a really weird position of absence of control over game design, as well as playtesting and prototyping, as playtesting in early development stages. This way, we completely lose control over iterative design, as the most successful tool for developing an enjoyable and balanced design. Creating a game doesn't mean creating an experience; this is exactly what makes it so hard to do so "Like building a ship in a bottle, we are far removed from what we are actually trying to create"(Schell, 2008).

To cover the last argument, it is important to first of all understand what exactly Generative Artificial Intelligence (GenAI) is. Generative Artificial Intelligence, or GenAI, is a model which allows generating certain types of content based on a textual prompt. This ability differs GenAI from common Artificial Intelligence, the goal of which is usually to classify, find or order already existing content. Generation of content from an inside perspective is happening by identifying some hidden underlying structures in the dataset used to learn, and then generating new content or data based on these underlying structures of the original dataset. So we can tell that GenAI works by copying some patterns from the original dataset and applying these patterns in the final result. (Bordas *et al.*, 2024)

Considering the key principles which GenAI follows, I believe we can name it as a level of abstraction from the content creation process, considering that abstraction is a process of removing unnecessary details to simplify the model of the entire process, moving from a specific case to a short description, allowing several potential solutions (Ward, 1995). Taking into account this behaviour of the prompt-to-content aspect, we see a significant loss of control over details; it is meaningless to add a level of abstraction if our goal is to create these details.

And exactly this is what developers do throughout the whole process of development to achieve a believable and balanced game, trying to reach a perfect balance in details, mechanics, difficulties, new content or story. We see how sometimes developers even drop a previous level of abstraction, moving to develop their own custom engine to reach better control and make something unique. An interesting example is the game “Noita”, which achieved a completely unique experience, gathering a large amount of sold copies and positive reviews, as a fully interactive and destructible world, which could never be made using usual engines and pathways of development. (Kultima, Ojanen and Nylund, 2024)

Conclusion

Games are not as easy as toys. They are not something that we can easily describe. Games are complex systems which come through a large amount of work and thought. Their goal is to make us experience something new and unique, which only another person can design. Even professionals in this field make lots and lots of mistakes, and they never blindly trust their first decision, but rather use helpful iterative principles and pathways to achieve the perfect outcome. Abstractions from development will bring only chaos and misunderstanding in the whole cycle, by losing control and understanding of details. I believe that games require humans not only as players, but as developers, designers, artists, writers, and authors. At the end of the day, only a human can understand another human's feelings and experience.

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