"Someone who designs projects to make people happy.
That's a game designer's purpose."
Toru Iwatani
Pac-Man Creator

IV. GAME DESIGN & SKILLS

Gameplay, win/loss criteria, control, and game functions are the game's basic foundations. The game design is what determines the form of the gameplay. The game design determines what choices players can make in the game world and what ramifications those choices will have on the rest of the game. Additionally, game design determines what win or loss criteria are, how the player will be able to control the game, what information the game will communicate to the player, and determine every detail of how the gameplay will function. For example, defeating the level's boss or making it to the level's endpoint are examples of level completion; the players reach the win condition.

So, what it takes to be a game designer? Do you need a specific type of education to succeed as a game designer? Any degree will do, in fact. However, most game designers I know have backgrounds in fields such as art and design, computing, psychology, education, and language. For example, say you are interested in developing a strategy game with a Mars colonization theme. In this case, it would be helpful to have knowledge of computer science, astronomy, and engineering. I have listed a few skills that the game designer needed the most. I have tried to write the list according to the priority as orderly as possible, but don't limit yourself to strictly following my list. Your top priorities will likely depend on your personal circumstances. I'd like to classify some potential abilities a game designer might need. Although not all of the skills in each category you may or want to follow, this list should give you a glimpse of knowledge on what it takes to be or what is beneficial for you as a game designer.

1. Art & Design

Design is always the first skill you need to be a game designer. Generally, design is the skill that allows you to concept and construct your ideas into reality to help human tasks to be performed better or more efficiently. There are lots of skills inherited from the design that can help a game designer, including game design itself, visual arts, sound design, animation, and cinematography. Remember, even if your game is a text-based visual

game, your game will still be full of graphic elements. Therefore, you, as a game designer, must be fluent in the language of graphic design or visual art and know how to use it to make the feeling you want to serve your player.

Players will strongly "believe" your game if they can sense it. One of the senses they have is hearing. The sound design of your game is what truly convinces the players' minds that they hear the game environment. Understanding the power and constraints of character animation will let your mind open for ideas that the world wants to see. Animation design is supposed to mean giving life to your concept with the help of sound design. The movement or gesture of the character will be realized by players because we as human experience almost the same thing, which make the player feel related.

Video games have the virtual camera(s). To provide an emotionally captivating experience, it is essential to comprehend the craft of cinematography. Take a look at the cutscene of the Life is Strange franchise as shown in Figure 5. When you play the game, you will hear great indie music and videography that is very nostalgic and typical American. Even if you are not American, you can still recognize and relate to the game. The music is super immersive. It just feels like you understand the game designer's intention. The transition between the cutscene and the actual gameplay scene is seamless in this game. I was in awe when the first time I finished watching the prolog, and then the game took me to the gameplay smoothly. At that time, I waited for the cutscene to continue, and I thought it might be a system bug. Then I realized I was wrong. The cutscene-to-gameplay transition is too smooth. I summarize the game in one sentence; Life is Strange is an indie music and video that players can play. Come on! How cool is that?!

Figure 5. Life is Strange screenshot. We can control the character when the game title pops up, the opening music still plays, and the character still has a monologue.
(The screenshots is taken from https://lifeisstrange.square-enix-games.com/en-gb/)

2. Technical

Another category you want to look at is technical skills, including mathematics, engineering, and technical

writing. Many people are horrified when they hear "math" or "mathematics", even me. But that was just decades ago when I still didn't understand the importance of mathematics. I will argue that this is because my teachers from elementary to high school are not able to give me a practical example of the application, which will then make me uninterested in the subject. However, I always question in my mind what is the benefit of learning mathematics. I know we can calculate the distance of two vehicles moving with certain acceleration and speed. That's it. But after I got introduced to game development, I finally can grasp one of the purposes (at least my purpose) to learn mathematics. That is to understand and simulate something via the game.

Battle Star Galactica, as shown in Figure 6, is one cool game with a theme of space war. In this game, you must control and navigate your spaceship to maneuver. It is extremely hard to do, especially in its digital version. If you want to move towards one of your enemy's units, you need to set the turning angle of your ships, and once you miss, you need to re-maneuver your ships again. A mistake you make may cause the destruction of your unit because your ships can't perform an attack since the attacking angle is limited. Finally, boom! Your enemy can freely shoot their missiles from your back.

Another example of the importance of mathematics is balancing. With great knowledge of statistics and probability, you can make your game balance across game variables. For instance, in level 4, the player needs 50 exp points to go to the next level, while the player needs 100 exp points to level 6. The higher present level of a player will need more exp points to fulfill. Balance doesn't mean the same or equal.

Figure 6. The gameplay screenshot of Battlestar Galactica Deadlock. Battlestar Galactica Deadlock is a strategy game set during the First Cylon War in the renowned Battlestar Galactica universe. The player controls the Colonial fleet in turn-based strategic, 3D tactical space battles.
(This screenshot is taken from
https://www.gamereactor.asia/media/23/battlestargalacticadeadlock_2212333b.jpg)

The same thing happens for engineering backgrounds in general. If you have the knowledge of how a 3D building model can be constructed, you may develop an efficient way to create a fully occupied city map. The

ability to write a technical document such as a game design document, system documentation, or player walkthrough is also necessary. In fact, your team's understanding of your game ideas is highly dependent on the technical document you write. Because it is an interface, a way for you to communicate to your team to deliver your message through a game. I often hear my students say they are lazy and too tired to write their ideas into game design documents or events in any sketch or note. Remember this, a great game designer can explain all of his great vision via a medium that the audience can easily understand; a written document in the context of game design or development.

3. Humanitarian

There are some notable skills that will enhance your game design, such as creative writing and public speaking. Moreover, more formal studies like anthropology, history, and psychology also contribute to game design knowledge. The first is creative writing, which involves creating entire fictional worlds and the people who live in them, as well as defining the many events that will take place. You make the little universe. In short, you are the director of the fictional universe. In order to make the narration believed by the players, you need to create and adjust lots of things to make sense for the player, even if it is fiction. The second skill is public speaking, which is crucial for presenting your ideas to your team and gathering feedback. You must be confident, natural, clear, and engaging in order to convey your knowledge and ideas effectively.

Anthropology is the study to learn the people's natural habitat. With the knowledge you get from here, you can figure out people's desires, especially their expectations of your game. One way to make your narrative believable is to write your story inspired by history. Somehow, the nature of history makes the player easy to understand and believe more. It's worth noting that even games set in fantasy worlds can be heavily influenced by historical events and settings. Gaming activity is tightly related to psychology. Your goal through your game is to entertain the players and make them as human beings happy. Therefore, you need to understand the working of human psychology. Otherwise, you are designing with no values. There is a concept called flow theory by Mihaly Csikszentmihalyi as shown at Figure 7. It mainly discusses how enough balanced game challenges and skills the player possesses can lead to the best player engagement. Therefore, you may give the best game experience to the player.

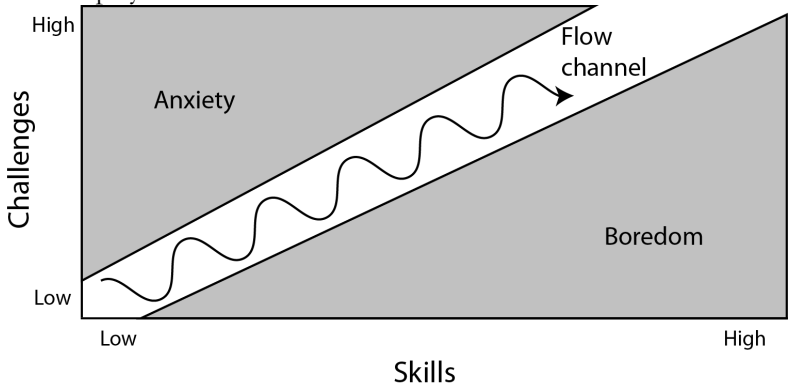

Figure 7. Theory of Flow. According to flow theory, when game designers work on level design, they

should consider the balance of skills and challenges to form a flow channel that will keep players engaged. (This illustration is taken from https://medium.com/@chow0531/flow-theory-336c9278dbd0)

4. Business and Management

Understanding business management, economics, and marketing, in general, is extremely important. Many designers also start with this category before they make the game concept. Because they can see the market's demand. It also helps them to sharpen their focus and leave the unnecessary stuff that may lead to a broader design. To be frank, most games are designed with the intention of generating profit, even the ones that are considered serious games. If you have a clear understanding of the financial aspect of game development, you increase your likelihood of creating your dream game. This means that if you can identify the potential of your game, it can certainly be brought to life; it can be developed for sure.

Modern games often have intricate economies that rely on various resources. Having a knowledge of economic principles can provide valuable insights for players. For example, in The Sims, your character needs to work so that you can use the in-game money to build your character's house and buy furniture. To be able to work, you need to train or exercise them. While learning some knowledge or skill, they need to fulfill their needs (such as drinking or eating a snack). So, you also need to monitor their conditions. These relationships of the variable inside your game that affects the game dynamics are the game economy. The game economy is not always presented as in-game currency, but it can be any entity used to be converted to another entity. Figure 8 and 9 shows two games that can teach you to learn management skills, The Sims and SimCity series.

Figure 8. Your Sim's skill level can be monitored by looking at the bar or gauge above the character in the

game. You may need to check the Sim's needs meters from time to time to make sure your Sim is in a good mood. If you assign them a task, they will not stop until their need levels are extremely low. However, your Sim may feint if the energy level is too low (the bar turns red).
(This screenshot is taken from https://steemit.com/writing/@simgirl/playing-the-sims-skills-needs-and-other-things)

Finally, having management skills is crucial when working in a team towards a common goal. Even if the management is poor, talented designers can still succeed and complete the job successfully. But there will be a challenge that will struggle you this way, and believe me, you want to avoid it. Like playing a game, you want to end your last move with style, right? So do it beautifully. In the context of management, list your task, make a priority, schedule them on the calendar, write notes every time you get a new idea, and ignore abstract, absurd, too-broad ideas that may lead to eternal work in progress.

Figure 9. The screenshot of SimCity BuildIt. SimCity BuildIt is one title from the franchise of SimCity from Electronic Arts (EA). It is a city-building simulation where players may craft, build, and control the city's development. Although it is easy to understand, the game requires you to consider many variables before you develop your city, such as factory raw materials, regional raw materials, commercial products, hardware, hardware, market, and many more. Furthermore, one resource can only be produced when the required resources from your building already exist. Therefore, you need to prioritize which building you want to build first.
(This screenshot is taken from https://play.google.com/store/apps/details?id=com.ea.game.simcitymobile_row&hl=en&gl=US)

5. Teamwork

Teamwork should occur in the technical skill and management category, but I want to discuss it separately since it is one of the most required skills in any field. Teammates want their opinions to be considered since they also

desire the game to succeed. You will have more options if you involve everyone in the design process and critically consider every concept and recommendation. Remove bad ideas as soon as possible, be compelled to observe the game from various angles, and make each team member feel like they are the designers. Communicate these decisions to the rest of the team promptly. Here's an example of how this process might look:

- **Initial Brainstorming**: Involve as many people as possible in the initial brainstorming session. Putting together the game's wrapping and principles is a great creative exercise. Bring out your pen and paper. It's important to get down as many initial thoughts as you can. You will have a perspective to eliminate unnecessary ideas.
- **Independent Design**: The core design team members brainstorm ideas independently. This will initiate them to think creatively without having to contend with any rough, unwelcome concepts.
- **Design Discussion**: The core design team members share their individual perspectives for discussion and ultimately come to a group decision.
- **Design Presentation**: The core design team informs the rest of the team about their progress and welcomes questions and feedback. The next stage of the iterative cycle typically begins with the resulting brainstorming session.

Involving everyone on the team in the development process can be time-consuming, but the end result will be a bigger success if the developers are able to effectively communicate among themselves. The following are the nine essentials for effective team communication:

- **Objectivity**: As a designer, if you can develop good habits of objectivity, people will feel comfortable coming to you with design questions without fear of being judged negatively. Members who are usually hesitant to share their thoughts will feel safe doing so, and many previously unspoken ideas will emerge from the shadows.
- **Clarity**: To ensure that your meaning is conveyed clearly, you should always ask for clarification after giving an explanation. You should provide examples to back up your argument whenever you can. Also, if you don't understand something someone else says, don't act like you do. Additionally, maturing into precision and detail is also helpful.
- **Persistence**: WRITE THINGS DOWN! The spoken word is easily misunderstood and quickly forgotten. All members of the team have access to past recordings at any time. Be sure to copy everyone on the team when emailing about new design projects. As a result, there is only little possibility of someone feeling or actually being excluded.
- **Relax**: A comforting situation is a good condition for clearer thinking and more open communication. Ensure that your team has a suitable place to meet that is conducive to a conversation in terms of noise level, temperature, the availability of seating, and the size of the available desk or table. You should also see if anyone on the team is thirsty, hungry, or exhausted.
- **Listen**: The first step in becoming a good listener is learning to show respect towards the person you are communicate with. When people don't believe they are valued, they are more likely to keep quiet. When they open up, it's usually not about how they're really feeling; they're too afraid of being judged

negatively to be susceptible. People tend to be more open and honest when they feel respected. Confide in your team and encourage open communication, even if it seems unrelated to the project at hand. All sorts of conversations can now take place with more information.

- **Honesty**: Since game development can get political at times, being honest is essential; your team needs to trust that you are telling them the truth, even if you have to embellish the truth on occasion. Sometimes you also need to spare time for private conversations with each design team member whenever possible. They have suggestions or problems to share but want to avoid bringing them up in front of the group. A team member's stubbornness on a particular issue requires your attention.
- **Cooperation**: If one team member is adamant about something, the rest of the group must respect their opinion and work with them to find a workable solution. Asking for an explanation of the idea's significance from the person who finds it most important is a surefire way to help the rest of the team see its value.