Playing to Learn

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Playing to Learn
by John Stanko

Submitted to the faculty of the School of the Arts of Virginia Commonwealth University in partial fulfillment of the requirements for the degree, Master of Fine Arts in Visual Communications.

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Introduction
Games have been around since the beginning of civilization. It has even been said, “play is older than culture.”1 People love all kinds of games—from chess to checkers, cards to monopoly, complex to simple. As society has grown into a new information age, our games have also evolved. Children were once content to draw a simple circle in the dirt and shoot marbles. Now they shoot invading aliens and become heroine treasure hunters with a joystick and screen. It is easy to see, that as times have changed, the world of games has changed as well.

Video games, also called digital games, are now the game of choice for people of all ages. According to Henry Jenkins, a professor at MIT, “Last year, Americans bought over 215 million computer and video games. That’s more than two games per household. The video game industry made almost as much money from gross domestic income as Hollywood.”2 They offer players the chance to be transformed into anyone, from Michael Jordan to a powerful wizard. Although digital games are extremely powerful, they function within a very narrow scope. For example, they are limited by the system they are played on, and do not take advantage of all five senses.

That said, digital games have benefits of their own. One area they have begun to take advantage of is the immersive environment they create. A player enters the game environment, and becomes part of a virtual world. Players engage in first person narratives and use the resources provided in the game to gain knowledge, solve puzzles, test their skills and conquer challenges. By using these resources digital games give people a unique opportunity to engage in active learning.

The crossover between active learning and digital games is also known as Serious Games. This fairly new field of gaming is focused on games for education, exploration, and management tools. David Rejeski, the Director of the Foresight and Governance Project at the Woodrow Wilson International Center for Scholars in Washington, D.C. and head of the Serious Games Initiative, “feels that games are one tool that may help immensely in building long-term thinking skills among not only government officials but the general public as well.”3

Graphic designers have two different tracks to enter the gaming industry. Visual designers, who’s focus is creating visuals, and communication designers, who’s focus is how visuals communicate, have many skills to offer this new field of serious games. These designers can develop icons that can become a part of interfaces that promote active learning, create and implement a visual hierarchy allowing information or action in a game to be easily understood, and integrating color as a communication tool. There are also other less tangible, but equally important skill sets, that they can bring to this field. For example, branding campaigns are usually complex and require the ability to handle various large and small scale projects while always staying focused on the overall theme. Creating a digital game is a process with similar complexity. Another skill needed to create a game is the ability to manage and keep various different creative people inspired. Visual and communication designers do this everyday.

This creative project explores some major issues about visual communication in digital games. The project will continue to address new questions and invite questions from my visual and communication design colleagues. My hope is that, through this document, designers will see digital games like photography was seen around the turn of the century, and movies in the 1950’s and 60’s. In other words, as a rich new medium that offers creative people a virtually unexplored environment in which to work and create.

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1 Salen, Katie and Zimmerman, Eric, rules of Play. The MIT Press, 2003, p226
2 Jenkins, Henry. TechnologyReview.com: Art Form for the Digital Age.
3 Serious Games Initiative, available at http://www.seriousgames.org

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The Word Game

The word game is a tricky thing in the English language. It is used to describe many different things. Phrases like "game birds" or "playing head games" make the context of the word very important.

In *Rules of Play*, T. Salen and Z. Zimmerman point out that the terms play and game are often interchanged, and the distinction between the two words is hard to draw. For instance, games can be a subset of play. Singing a nursery rhyme, running barefoot on the beach, and rolling dice might be considered play, but unless some structure is added to them, they are not traditionally considered "serious" games. It can also be said that play is a subset of games. In this instance, the act of playing is only one of the different facets of a game.

Jesper Juul believes that theories about games fall into two camps: Everything is a game or Games are "x". Can games be everything? One problem with this assumption is that if everything is a game then we have no real need for the word. Another problem is that if everything is a game, how are we to measure what is more "game-like" than other activities. For instance, one could say that a nap on a sofa is as much a game as ten friends playing a high stakes game of poker. This is absurd. Games must have something that separates them from other activities.

Many game theorists have tackled this very issue and come to some very fascinating conclusions. David Parlett suggests that games have an agreed set of equipment and procedural 'rules' by which the equipment is manipulated to produce a winning situation. In his book *Homo Ludens*, J. Hunasingha concludes that playing a game is a voluntary act. Rodger Caillois expands on this idea and says, "playing (a game) is not obligatory..." In other words, it is a voluntary act. Bernard Suits states, "playing a game is the voluntary effort to overcome unnecessary obstacles..." Salen and Zimmerman take these definitions and others, and combine many of their qualities to say, "a game is a system in which players engage in artificial conflict, defined by rules, that result in a quantifiable outcome." This is how I will define games for my creative project.

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1 Salen, *Rules of Play*, p 72, 73
2 Juul, Jesper, Digital Arts Conference at Brown University, 2001
3 Parlett, David, *The Oxford History of Board Games*, Oxford University Press, p1
4 Caillois, Roger, *Man Play and Games*, University of Illinois Press, 2001 p 9, 10
What Separates a Digital Game From a Traditional game?

There are three elements that make a digital game unique from a traditional game.

1. All the aspects of the game are contained in a digital environment.

In digital games, everything that directly affects a game takes place within the digital environment. There are no external game pieces, dice, tokens, etc. that exist in the real world to play the game. This means that all the information that the player receives comes from the digital system that the game is played on. For example, if in a game the player needs a magic key to open a door, then somehow the player must be informed of this information via the game. This doesn't need to be achieved through blatant text directions. Perhaps when attempting to open the door a clinking sound is heard, and text states, "the door is locked." A player must then figure out what to do next on their own (i.e. search for the key, pick the lock, etc.).

2. Digital games are limited to the system on which they are played.

When you purchase a traditional game all the pieces needed for play are in the box. With traditional games there is no concern about having all the resources needed to play. Traditional games must have a way to revert the game back to its original state once the game is over. The game board and game pieces must not be permanently changed during the course of a game. In a game of Risk, if you truly destroyed the opponent's game pieces, the game would not continue and it would no longer be playable. In contrast, digital game designers must be aware of what kind of system it is reasonable to expect the player to have. Although computers are amazing tools, there are limits to what they can do. If one is designing an intense, fast paced, first person shooter, then it is important for the game to function fast on all systems. Sometimes a designer will need to limit the details of a game level to make it functional for all systems.

3. Digital games allow for greater flexibility in how the player and environment interact.

Traditional games must have a way to revert the game back to its original state once the game is over. The game board and game pieces must not be permanently changed during the course of a game. In a game of Risk, if you truly destroyed the opponent's game pieces, the game would not continue and it would no longer be playable. In contrast, digital game designers must be aware of what kind of system it is reasonable to expect the player to have. Although computers are amazing tools, there are limits to what they can do. If one is designing an intense, fast paced, first person shooter, then it is important for the game to function fast on all systems. Sometimes a designer will need to limit the details of a game level to make it functional for all systems.
The Rules in a Digital World
An agreed upon set of rules seems to be a common thread in many different definitions of a game. In fact, a game cannot function if all parties do not accept the same set of rules. If during a game of checkers, one player moved his pieces backwards, the other player would be faced with two choices. If they say nothing and accept the new rule, they can use it to their advantage. If they cry foul and reject the new rule, then the other player must undo the move. Disagreement over the rules of a game can lead to breakdown or players choosing not to continue play. There must be a sense of trust between the two parties, trust that both sides will play by the rules to have a fair and equal competition.

The digital world is not nearly so flexible. Once the game has begun, the rules do not change. They are cold and unforgiving, forcing all participants to adhere to them without exception. In a game of Monopoly that has gone on for too long, it is possible to change the rules to shorten the game. In the digital world, changes have to be built into a game system as options already considered available to the players.

Another unique aspect to rules in a digital game is that the players do not need to know all the rules in order to play. Because the game rules do not bend, and the computer forces you to play in that set of rules, it is possible for a player to learn the rules as the game is played. In fact, digital games take advantage of this aspect by using this concept to create a level of "surprise" that keeps a player interested as the game advances.

Knowing where rules begin and end is the trickiest aspect of succeeding in a digital game. For example, in a game of Quake, the players cannot see around a corner where an opponent might be hiding. Are the visual limitations part of the rules? Probably, since it will govern the players' actions. But one could argue that it is simply a result of the environment in which the game takes place – no different than the table a chessboard is on. The key to answering this dilemma is to ask how the elements in question effect the play of the game. If they do not have a direct effect on a player's actions, such as the color uniform a player chooses in Madden Football, then they are not considered part of the rules of the game. Although part of the game's communication system, such environmental variables do not affect the players, how well they play, or enter into the strategies of how choices are made during play.

The Five Senses in Digital Games
For all the power that digital games can offer, they are dominated by one simple fact. Digital Games are a visual medium. To arrive at this conclusion we must first consider all five senses and how they apply to digital games.

Touch - Although there is touch in digital games, it is limited to a joystick or a keyboard. It is fair to say that touch is an independent experience from the game itself. Some systems have been experimenting with touch, such as vibrating game pads, but this is usually an extra and not mandatory to playing the game.

Taste - Although this might seem a strange sense to consider for games, there are games where taste plays an important role. For instance, some might consider pizzas and chips a necessary part of traditional role-playing games. In some cases, taste has a central role, such as in the game "Quarters," as played on many college campuses. In digital games, the sense of taste is not currently involved in the gaming experience.

Sound - Sound plays an important part in many games, such as Name That Tune. However, in digital games, sound is mainly used to support the video. Often it is just a feedback element. One simply needs to imagine playing Mario Brothers without the sound. While it might not be as enjoyable of an experience, but it can still be done.

Visual - Many games are dominated by visual elements, and digital games are no exception. All the elements - such as score, situational feedback, clues about what to do next, etc. are expressed by visual elements. It is fair to say, that playing a digital game without using one's visual sense is simply not possible.
Why Digital Games Are What They Are

The historian Adolf Erman suggests that as cultures advance, certain activities fall into oblivion. As these activities are exercised more rarely, they appear to give a purer pleasure. With the absence of necessity, “the hard work of the past becomes a delight and a sport.” Examples of this include people enjoy archery, fencing, horse racing, etc. This philosophy might also be applied to people’s enjoyment of digital games that involve things like sword fighting.

In his groundbreaking book Homo Ludens, Johann Huizinga writes, “Play is a voluntary activity or occupation executed within certain fixed limits of time and place, according to rules freely accepted, absolutely binding, having its aim in itself and accompanied by a feeling of tension, joy and the consciousness that it is different from ordinary life.”

The term, “different from ordinary life,” is what makes this definition of games special. Games offer a chance to experience life in a new or unique way. Digital games offer the chance to experience life as a wizard or superhero, in a way that traditional games do not.

Along those same lines, psychologist Micheal Apter writes, “In the play-state you experience a protective frame that stands between you and the ‘real-world’ and its problems, creating an enchanted zone in which, in the end, you are confident that no harm can come." This idea is present in a game of Unreal, where rockets and missiles are fired at a player who has no need to fear he will be harmed in real life.

Game theorist Alan Wykes believes that most games are a contest of some kind, with their origins in contests of strength, in which “one man could prove his physical superiority over his opponent.” He then goes on to suggest that “unskilled” players developed games to simulate these contests of skill, but had luck rather than skill determine the winner. One example he cites is dice, as a game that was derived from throwing stones.

In the past there was no way to simulate a game of skill, however through digital games the less physically skilled can more complete on a more level playing field. Games like Madden Football allow a player to run a two-minute drill in the NFL, an experience that would be impossible for most people in reality. Another example would be the ability to participate in covert missions behind enemy lines while playing the game Thief. Could this be why games like NBA Jam are so popular? Is it because they offer to the chance to digitally experience shooting the game-winning shot in an NBA championship?

Why Digital Games Are What They Are

Although it’s impossible to give a definitive answer, it was valuable to consider possible reasons.

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1 Huizinga, Johan, Homo Ludens, Beacon Press, 1971, p13
2 Salen, Rule of Play, p94
Immersive Digital Games

Before digital games, a higher level of imagination was required to be immersed in a game. For instance, in a game of Monopoly it is not one’s love for a metal shoe that creates a desire to see it race around the board. Rather, it is the understanding that the “shoe” represents the player. In that environment the player remains disconnected from the game. The player has no interest to experience the game from the shoe’s point of view.

Through digital games, players can be drawn into the experience by the instant feedback from game to player. For example, as a player moves the game pad, his character on the screen also moves up. This allows the player to have the constant feeling that they are controlling the action, creating a bond between the player and the actions on screen.

In the early 80’s Battlezone was one of the first games to explore the “first-person” point of view. In 1992, Wolfenstein 3-D further changed the landscape of digital games with what has become known as the “first person shooter.” Like Battlezone, it is a game that is played through first person perspective. This created an even stronger bond between the player and the game, since his visual perspective comes via the eyes of a character in the game. With digital technology, the player is now able to experience the visual sensation of playing a game.

In a well-designed first person game, it is not uncommon for the player to feel as if they really are experiencing the game, and being drawn into a virtual world. Many will physically react to the actions on the screen by ducking, leaning to the side, having their heart race, etc. It is not uncommon for a player to literally jump out of their chair while playing the game Unreal Tournament after being surprised by an opponent.
I had very little motivation in the real world to excel due to some family problems. I hid myself in this virtual world where I could be the person that I wanted.

I played Everquest a lot. Average about 8 hours a day. Socially I was not a very good person either. I would ditch RL friends to stay online. etc.

I felt that I could achieve things that normal folks could not.

I've learned some real life lessons from playing this game.

Elements of Immersive Digital Games:

To really study immersive games, it is first necessary to define what an immersive game is.

1. Point of View (PoV) – an immersive game needs to be from the first person perspective. In any other perspective, the player is disconnected from the game, and does not “become” a character.

2. Limited Line of Site – An immersive game does not offer all the information to the player at once. For example, in a game of chess both players know where all the pieces are at any point. In an immersive game, like Quake, the player might be able to see down the hall, but does not know what is behind all the doors. The only way for the player to find out what is behind the doors is to move to them and open them.

3. Natural and Instant Feedback – In the natural world every action has a reaction, this should also be true in the digital world. If a player uses the keypad to look to the right, then the feedback needs to be quick and natural. Taking no longer than it would for one to actually turn their head. This effect allows the player to move as smoothly in the virtual game world as they do in the real world, reinforcing the idea that they are in the game. If the player moves down the hall to open a door, it must feel like they have walked down the hall, if anything is skipped then the player is reminded, “This is only a game.”

4. Ability to Effect the Environment – Immersive games allow the player to interact with and change the environment of the game. Allowing players to open doors, go up elevators, etc. gives the sense of actually being in the environment and truly interacting with the elements of the virtual world.

5. Believable Physics – Elements from reality such as gravity, light, etc. should govern the players. If a player runs off a cliff and does not fall, it would seem illogical. The game must give the player a reason for not falling. If it fails to give that reason, then the visual communication from the virtual environment will break down. The player would no longer trust what they see.

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Simulation vs Games

While a game is defined as "a system in which participants engage in artificial conflict, defined by rules, that result in a quantifiable outcome," a simulation is not nearly so restrictive. A simulation is a controlled recreation of an event or environment for a defined purpose. Simulations are not required to have artificial conflict or a quantifiable outcome. Although simulations can be games, the two are not mutually exclusive.

A simulation is a re-creation. In a simulation, degrees of success are measured by an external element. The more accurate the simulation to the original experience, the more successful it tends to be. This is the reason digital simulations continually strive to create more and more realistic graphics. In contrast, the success of a game is not bound to re-creation. That freedom allows the visual and communication designer to embellish and abstract certain elements for better communication and ideas. This gives the game creator greater range of imagery, interface systems, rules, etc. than a simulation creator is given.

One could say that simulations deal with details, while games are more focused on broad themes. Problems occur when the differences in these terms are not understood. For example, the US Army commissioned Pandemic, a computer game company, to create the game Full Spectrum Warrior, to help train soldiers for combat. Unfortunately the semantics got in the way, and the army got a game, when they really wanted a simulation. According to the St. Petersburg Times, "Lt. Col. Jim Riley, chief of tactics at the Army's infantry school at Fort Benning, GA, *says his staff repeatedly uses the game because it doesn't offer the kind of urban combat simulation he needs.* This game has, however, enjoyed commercial success, where the realism is unimportant.
Also known as the feedback loop, “input = output” refers to what happens when the user enters information into the environment. To be effective and engaging, it is important that the environment respond to the user’s input. Response should also encourage the user to offer more input. What results is a visual dialog of information between the user and the game. One example of this is the game Quake. The input occurs when a player presses the forward key to enter a new room. The output would be hearing footsteps, changes on the screen, etc. The request for additional input comes from sounds heard in nearby rooms, doors, and other passages leading out of that room, or enemies in the room, etc., creating a constant exchange between player and game.

Inside Outside

Everyone brings a set of experience and knowledge to interactive environments. It is important for the creator to be aware of the level of information that players bring to the experience. For instance, Madden Football assumes a certain amount of knowledge about the game of football. If someone throws a rock, we know that the rock will travel in the air, fall to the ground, roll, and finally come to a stop. In an open system the outcome is unknown. If, in an open system, the rock is thrown at another person, then the response would be much less predictable. Would the person try to avoid the rock? Would it hit them? Would they fall to the ground? Would they throw the rock back? Etc.

Open and Closed Systems

There are two different kinds of responses that a user will receive when they input information. In a closed system, the outcome is predictable. For instance, if someone throws a rock, we know that the rock will travel in the air, fall to the ground, roll, and finally come to a stop. In an open system the outcome is unknown. If, in an open system, the rock is thrown at another person, then the response would be much less predictable. Would the person try to avoid the rock? Would it hit them? Would they fall to the ground? Would they throw the rock back? Etc.

Some environments use a combination of open and closed systems, allowing for a more enjoyable experience.
Defining Active Learning

Active learning is a concept promoted by the cognitive sciences, and implies that people gain a deeper understanding of concepts by experiencing them. This concept was promoted by Maria Montessori for educating children, and was later expanded to all levels of learning by Edgar Dale and his Cone of Learning. The Cone of Learning illustrates the different ways of presenting information and what results in the most retention. At the top of the cone, and offering the least amount of retention, is unlocking visual symbols. In contrast, a direct and purposeful experience is at the top of the cone, and offers the most retention.

Building from Dale's research, the National Training Laboratories in Maine created the Learning Pyramid to illustrate the average retention rate for different methods of teaching by instructors. At the bottom, and least effective, is lectures, which only offers a 5% retention. Teaching others forms the top, as the most effective, with a 90% percent rate. Practice by doing rated at 75%.

These studies have resulted in an understanding that optimal learner retention rates are achieved via teaching methods that require the learner to actively work with new content and concepts during the instruction process.

Active Learning in Digital Environments

One option to promote active learning is to create an environment where learners actively work with content and concepts is via digital games. For example, in the game Civilization, the player builds nations based on historic civilizations like ancient Rome. The player assumes a “god/ruler” role and plans cities, manages natural resources, forms treaties, etc. This game teaches the player about ancient history, diplomacy, resource management, etc. These issues are difficult to teach in a traditional lecture based classroom setting, but they translate well in a digital game environment.

These issues are not limited to commercial arena. For instance, Virtual Hallucinations is a virtual reality experience that incorporates 3D rendering and 3D sound to place the viewer “in the shoes” of a schizophrenic patient. Once impossible to imagine, now doctors and family members experience a deeper understanding of what schizophrenia is really like.

Active Learning and Political Chess

This study was an archive of the 2004 presidential election. For my solution, I created a chessboard. The goal was to communicate the day-to-day aspects of the election, and to explore the negative tone of the election. Each piece is based on key figures and their role in the election. I explored creating a game system that explained the communication beyond the game itself. The board, the pieces, and how they relate all communicate beyond the basic elements and rules of chess. The board pieces and strategies used act as a metaphor for modern politics. The goal is for the viewer to actively gain knowledge about the political climate while simply... playing chess.
In October of 2004, I attended the Serious Game Summit. The Summit was produced by The Serious Games Initiative, which was founded at the Woodrow Wilson Center for International Scholars in Washington, D.C. The fairly new field of serious games involves games that are based on education, exploration, and management tools (i.e. not focused on entertainment or commercial value.)

At the conference, I had the opportunity to speak with William Davis, the executive producer for Americas Army. Americas Army produces games for the US Army to use as recruiting tools. The game gives potential enlistees the opportunity to complete missions in various parts of the world. Davis offered information about the game engine, and how they added customized programming. We discussed how a player could hook up external devices like electronic air guns, to create a more in-depth experience. Finally, I asked about the process of how the visuals for the game were created. To my disappointment, it was simply a 3D artist going to various sites, taking digital photos, and re-creating them through Maya (3D rendering software) as realistically as possible.

I also met with Dr. James Cook, who created most of the virtual environment in Second Life. Second Life is a virtual world where people can buy virtual property, make virtual items (chairs, houses, etc.), and interact with people all over the world. I asked, “With all the different cultures involved, how and what kind of icon systems were used to help bridge the language gap?” Mr. Davis offered information about the game engine, and how they added customized programming. We discussed how a player could hook up external devices like electronic air guns, to create a more in-depth experience. Finally, I asked about the process of how the visuals for the game were created. To my disappointment, it was simply a 3D artist going to various sites, taking digital photos, and re-creating them through Maya (3D rendering software) as realistically as possible.

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1 Chat – To participate in a fast-based synchronous exchange of remarks with one or more people over a computer network. Available at http://www.thefreedictionary.com/
Defining My Creative Project

Researching game theory and active learning inspired me to explore what a serious digital game could be. Enjoying historical topics, I chose to work with a culture from the distant past as an educational subject. I wanted a culture that was generally misunderstood and falsely stereotyped. It was also important to me that they have an artistically rich culture that could inspire my work.

As a result of my research, I selected areas that I felt visual and communication designers could contribute to in a serious game's design. These areas include:

- Communication of different visual elements beyond just what they represent. For example, a door made of wood can communicate something differently than a door made of iron.
- Integrating active learning into character development.
- Creating icons that can become a part of active learning, and go beyond just basic symbols.
- Creating a visual hierarchy allowing information or action in a game to be easily understood
- Using color as a communication tool

Viking Culture

The European Viking culture from the 800's to 1000's AD was a good fit for what I wanted to make. Often misrepresented, they are thought of as a violent and unrefined people. In reality, however, they were predominantly a farming and trading culture. Other interesting contradictions include the importance they placed grooming, their dependence on livestock, and their respect for different cultural practices.

Since my focus was on making a game and not a simulation, my concern was not in historical details. Creating a visual experience that reflected the culture was the main focus. It is my hope that a player would get the experience of what life would be like in any Viking village, not focusing on life in a specific village on a specific date.

Experiencing a Poem through a Game

Through saga and poetry, the narrative was an important part of Viking culture. Using it as inspiration for the story line, I created a storyline based on the poem of Beowulf.

Experiencing a poem in first person perspective offers a unique opportunity to experience a culture. It can allow for a much deeper understanding of a culture than a realistic simulation can offer. This allows for more personal rather than formal experience of architecture, fashion, etc.
Character Studies

In these formal character studies, I worked with many different materials such as cut paper, paint, finger painting, and bend. I tried different styles to explore different possibilities. In this process, I purposely chose to limit my research into Viking artifacts, to allow for a more open creative process.

Abstracting Form

Another important aspect that I explored in this process was the abstraction of form. Many games, especially those dealing with education, seek to create highly realistic images. This limits the artist’s ability to create expressive forms that communicate beyond the image itself. John Dewey suggests, “Linear outlines that are used to reproduce with accuracy a particular shape of necessity limited in expressiveness.”

Wanting my forms to communicate more than just men, women, house, etc., I chose to explore more abstract forms.

1 Dewey, John, Art as Experience, Berkley Publishing Group, 1934.
After creating the various studies, I began to research the visual language used by peoples of Europe from 800 AD to 1000 AD. I then compared these studies to my various studies, looking for overlapping formal qualities. Areas such as triangular elongated faces, large heads, and round eyes were elements that I found to be consistent in Viking art. Using these visual limitations, I chose the study that formally and personally connected Vikings and my personal aesthetic.
Visual Inspirations

Johm Currin

John is a fine artist who works with painting, mostly in oils. I was inspired by his abstraction of form, while still able to achieve a “realistic/naturalistic” image. I enjoy that separation of form, because it is used to communicate something about the subject matter.

Barron Storey - The Marat/Sade Journals

“This remarkable hardcover book is reproduced from several of Storey’s illustrated journals. Loosely based on Jean Paul Marat from the French Revolution and the Marquis de Sade, from the Peter Weiss play. And, while full of richly textured images, there is no/near narrative. Barron Storey himself describes the contents as ‘the personal journals of the aging artist...’ The possibility that some value may be found in the work and that the value will outweigh the overtly personal content is the rationale.”

I am inspired by the freedom of type and image while still keeping a loosely realistic style to the illustrations. He is able to create complex images with multiple layers. Using a coat of crystal clear and matte medium allows for many layers of different mediums to be applied.

Noriyoshi Ohrai

I came across his work about 6 years ago when a friend gave me a book of his illustrations. I have always found his work inspiring on a formal level. He can work with a high degree of medium; yet still maintain a rough edge. This is something I have always aspired to achieve in my own work.
Learning Software

Milkshape 3D

Wanting to understand what is possible in 3D image making, I became familiar with the software Milkshape 3D. This program was originally developed for the game Quake and used to create all the elements in the game. Using this software is similar to many other 3D programs, like Maya and 3D studio, since it allows the user to create forms based on polygons. The use of polygons is important since most game engines function on them. Other features include:

- bone elements, which allow for fluid, natural animation.
- export to compatible formats to most game engines
- widely used so there are many different tutorials available
- 3rd party software allows for detailed accurate texture mapping

Using this software I created a 3D model based on some of the illustrations that I created in my character studies.

Reality Factory

I also explored the software Reality Factory. This is a GUI (Graphical User Interface) based game engine that allows for custom game design without any programming. It allows for dialog trees, custom game environments, and custom avatars. To learn this software, I created a simple Viking home with Milkshape and a custom texture. I explored different atmospheric elements such as rain, fog, sunlight, etc., and added custom avatars and natural terrain.
Limitations of Digital Games

After learning the software and limitations of current game development, I realized why games often have a more

narrative look. Everything, from the 3D software used to create
the shapes in the game, to the game engines that allow
faster, focus on more realistic forms, atmospheres, etc.,
focuses beyond these limits prevents iterations to the
actual programming. Limited feature rendering was another
limitation that I encountered. Once a 3D shape is created,
you are limited by a low-resolution image to wrap it with.
Even though I had created detailed drawings to wrap the
forms with, much of the details, brush strokes, etc., were lost
when the 3D shape were exported.

The Overall Vision of What It “Could” Be

Because of the limitations encountered while learning the
software, I decided to create a conceptual storyboard of
what the game could be. This allowed the focus to be on the
creating, not the limits of technology. Many of the ideas used in
this storyboard are not possible with current technology. It is
my hope, that someday they will be possible.

One of the constraints on this project was

to avoid using any screen captures from
the Nike Presto video. Often times when
creating digital video, either for a client or
oneself, it is difficult to represent the artist’s
vision until the video is captured. This
is an exploration of more experimental ways to storyboards.

Creating Storyboards

One element of the storyboards, beyond the visuals, was to
express how the game would flow. Much like the Nike Presto
Storyboard I created in the graduate workshop, I wanted
to show the overall vision, not the details of every scene. I
created the images by making separate ink drawings and
making India ink splatters and washes on watercolor paper.
Then I assembled the final piece in Photoshop (an image
editing program).

1 Game Engine – the core software component of a video game. It typically handles rendering and other necessary technology, but might also handle additional tasks such as game AI, collision detection between game objects, etc. The most common
element that a game engine provides is graphics rendering facilities. Available at http://www.thefreedictionary.com/
What is learned

Poetry and Sagas were important in Viking culture. They were not only for entertainment, but also served as pseudo-historical accounts. By actually taking part in the poem of Beowulf, the player learns that tales are not fiction but rooted in actual historical events.
What is learned

Having a keen awareness of their resources, this section teaches about how Vikings took advantage of nature in making a ship. The Vikings used extremely thin planks of oak to make the hull of a ship. This allowed the ship to be faster and lighter than other ships of the time.
What is learned:

Vikings were mainly a farming culture and in this segment the player learns about the importance Vikings placed on the livestock of a village. Cattle for the meat and sheep for the wool were the most important livestock. A large bear has been eating the livestock to the point that there will be no wool. Even worse, there will be no food to the cattle. Should the bear continue to eat the sheep there will be no food for the people in the village. If you are willing to protect the livestock, he will give you a fine belt as a sign of his gratitude.
What is learned

In this segment the player learns about the importance Vikings placed on various crafts. For example, Viking sails differed from other cultures at the time, and gave them superior command of the sea. Due to the type of wool used, the sails were waterproof, allowing Vikings to sail in all kinds of weather.
What is learned

A common myth is that Vikings were superior to other European cultures because of higher-quality weapons. Although the weapons themselves were of similar quality, Vikings did little things to give them the upper hand. For example, they would paint a shield to hide the wood grain so that an enemy would not be able to see the weakness in a shield.
Creating a Typeface

Inspired by the typeface *Love Your Font*, designed by Max Kisman, I explored creating a unique typeface for the game based on Viking runes. This allows for a closer connection with the type and images. Even though this font has issues with legibility, it would be used for more iconic text. The larger bodies of copy would be handled in a more legible font.

**Example of Viking Runes**

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ABCDEFGHIJKLMNOPQRSTUVWXYZ
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"The *LOVE YOUR Font* is an experimental set of characters, derived from the 1986 *Typo* contribution "What every Dutch boy carries in his pockets", an alphabet composed of small found objects."
Creating an Interactive Experience

To give an example of how the game would function, I created an interactive version in Flash. This shows the interfaces, interaction with text, and how the game would look. It also illustrates the differences in both form and content when compared to other commercial digital games.

Saga Journal
Lists the tasks that are and need to be completed next.

Target
Lists what is being interacted with and its current health.

Group list
Lists other online players you are grouped with to complete the Beowulf saga.

Profile button
Mannaz, the symbol of self, is used to access the character profile. Showing the current stats (strength, intelligence, etc), experience level, etc.

Inventory button
Fehu, the symbol of possessions, is used to access the inventory.

Options button
Nauthiz, the symbol of constraint, is used to access the game settings (i.e., resolution).

Rune of Defense
Eihwaz, the symbol of defense, is used to add extra defense in combat.

Rune of Protection
Algiz, the symbol of protection, is used to add extra natural defense to your squad.

Rune of Strength
Uruz, the symbol of strength, is used to open locked doors and move heavy objects.

Rune of Life
Loki, the symbol of vitality, is used to gain extra natural defense to your squad.

Color
Color would be used to signify different events in the game. For example, battles would be dominated by warm intense colors, while conversations would be more dull colors.
Conclusions and Final thoughts
I want to preface this by noting that it is probably a surprise to many who know me to find out that I hate technology. I could easily be content without a cell phone, Power Book, iPod, or whatever other new piece of wires and plastic comes out next week to change our lives. But we live in an information age, and things that go beep and bop dominate our society. All area in technology that has been growing at an alarming rate is video games. The fact that an industry largely thought of as trivial, and as one senator even went so far as to call it “cultural pollution,” could make almost as much as Hollywood is an amazing thing. Although it is dangerous to use financial success as the only measuring stick for the value of something, one cannot deny the audience these games have. The games of today have crossed boundaries of race, sex, social status, etc. Millions of people, old and young, male and female, play video games every day.

If you are in the industry of designing visual communications, it is easy to see what value these environments have to offer. Some have such an addictive quality that people have lost jobs, families, and friends. The most addictive games create an experience that some people prefer to their real life. Some people have even said these games fill a void that is missing in their real lives. I have created my share of brochures, and think it is safe to say that none of my designs have ever come close to that kind of power.

With all that said, why are visual and communication designers as a whole ignoring this industry? During this project I came to cross a few reasons.

First, designers are not immune to “high culture”’s attitude toward gaming. Theatre, movies, and fine arts such as painting are seen as adding value to the culture. In contrast, the more elite crowds see games as anti-culture. Second, some designers fear technology. Every time a new technology emerges, a number of designers seem to rebel against it until it is clear they can rebel no longer. When designers do finally come around to accepting technology, they seek to push that medium in ways it was not designed for. Third, I do not think that the gaming industry really understands what it is we do. This became evident through my experience at the Serious Game Summit.

Unfortunately, what I have found in the game industry, is that visual and communication designers are simply used to design the logos and box covers, but left out when it comes to the “in game” environments and systems. I believe that visual and communication designers have much to offer this field. For example, through this project I was able to explore character creation and its relation to the content. I integrated typography, icon development, interface and active learning. I explored integrating typography, icons, and game graphics, to create a seamless experience. There are also the intangible skill sets, such as the ability to handle various large and small scale projects while always staying focused on the overall theme, and managing various creative people and keeping them inspired, skills needed to create a game.

Finally, I want to add another quote from Jenkins, “As the art of games matures, progress will be driven by the most creative and forward thinking minds in the industry. Those who know that games can be more than they have been, those who recognize the potential of reaching a broader public, of having a greater cultural impact, of generating more diverse and ethically responsible content and of creating richer and more emotionally powerful experiences. It is to these people that the visual and communication designers will change their current views towards gaming and see it as an art form from which they can inspire others. I also hope that visual and communication designers will be the creative, forward thinkers that Jenkins mentions.”

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