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# Creation of concept art for an action role-playing game

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| Author<br>Title | Timi Honkanen<br>Creation of concept art for an action role-playing game |
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| Number of Pages<br>Date | 67 pages<br>27 April 2017 |
| Degree | Bachelor of Engineering |
| Degree Programme | Media Technology |
| Specialisation option | Digital Media |
| Instructors | Antti Laiho, Lecturer<br>Joe Waterhouse, Project manager |

The purpose of this thesis was to create concept art for a game project called "Project wizards", which is developed by Waterlight Games. The goal was to research the creation processes of concept art and the problems that may become apparent during these processes.

Concept art, much like any other form of art, is a somewhat subjective field and many artists have their own methods and techniques of creating concept art. However, the most common methods are, sketching, grayscale painting, thumbnailing and photo editing (photobashing and matte painting). The most important aspect in all of these methods is that they are fast and visible results can be achieved in a relatively short time. Concept art is often considered to be one of the founding stones of visual projects and some processes are often dependent on concept art (3D modelling and illustration). Therefore, learning and mastering these methods is important in the field of concept art.

In this thesis, the author used digital methods to create concept art. The software that was used was photo editing software and as an input device the author used a drawing tablet. Concept art is often made using digital tools. However, the use of traditional art tools is also possible, albeit less common. The methods and tools that the artist uses are most often defined by what the artist is most comfortable and skilled with.

As a result of this thesis it was noted that the amount of time that is used on each piece of concept art was reduced with each finished piece of concept art. This was a result of the fact that after some time the client's requirements for speed and quality became more apparent.

The author also noted that depending on what type of a concept is being created, the usage of time can change drastically. The main characters and landscapes were the most time consuming due to their importance and size. The main characters have to be more polished than most other concepts because they are what the player will see a lot. Landscapes usually require the artist to create concepts for smaller objects such as plants or structures to populate the landscape with.

| Keywords | Concept art, game design, illustration, character design |
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| Tekijä | Timi Honkanen |
| Otsikko | Konseptitaiteen luominen toimintaroolipeliin |
| | |
| Sivumäärä | 67 sivua |
| Aika | 27.4.2017 |

| Tutkinto | Insinööri (AMK) |

| Koulutusohjelma | Mediatekniikka |

| Suuntautumisvaihtoehto | Digitaalinen media |

| Ohjaajat | Lehtori Antti Laiho |
| | Projektipäällikkö Joe Waterhouse |

Insinöörityön tarkoituksena oli luoda konseptitaidetta Waterlight Gamesin peliprojektiin nimeltä "Project wizards". Insinöörityössä tutkittiin konseptitaiteen luomisprosessia ja ongelmia, joita prosessin aikana voi ilmetä.

Konseptitaide on varsin subjektiivinen ala, ja monella taiteilijalla on omat tapansa luoda konseptitaidetta. Kuitenkin yleisimmät metodit tuottaa konseptitaidetta ovat hahmottelu, harmaasävymaalaus, pikkukuvien luominen ja kuvien muokkaaminen. Tärkeintä näissä menetelmissä on, että ne ovat nopeita ja että näkyviä tuloksia saadaan mahdollisimman nopeasti. Konseptitaide on usein yksi peliprojektien kulmakivistä, ja jotkin prosessit eivät pysty etenemään, ennen kuin niistä on tehty konseptitaidetta (3D mallinnus, illustraatio). Täten nopeiden tuotantomenetelmien omaksuminen on tärkeää

Insinöörityössä käytettiin digitaalisia menetelmiä konseptitaiteen luomiseen. Välineinä käytettiin kuvaneditointiohjelmaa ja piirtotablettia. Konseptitaide tehdään usein digitaalisia työkaluja käyttäen, vaikkakin perinteisten taidetyökalujen (maalaus ja paperille piirtäminen) käyttö on mahdollista, joskin harvinaisempaa. Ennen kaikkea se, mitä menetelmiä ja työkaluja taiteilija käyttää, riippuu usein siitä, mitkä työkalut hän kokee mukavimmiksi ja tutuiksi.

Insinöörityössä huomattiin, että konseptitaiteeseen kuluva aika väheni sitä mukaa, mitä enemmän taideteoksia tehtiin asiakkaalle. Tämä johtui siitä, että ajan myötä asiakkaan tarpeet ajan ja laadun suhteen tulivat selkeämmiksi.

Työssä huomattiin myös, että riippuen konseptista ajankäyttö voi muuttua paljon. Pelin päähahmot ja maisemakuvat ovat usein aikaa vievimpiä niiden tärkeyden ja laajuuden takia. Päähahmojen täytyy olla ajatuksella tehtyjä, koska pelaaja näkee niitä paljon ja maisemakonsepteja varten täytyy usein luoda pieniä esineitä, kuten kasveja tai rakenteita, joilla maiseman voi täyttää.

| Avainsanat | konseptitaide, pelisuunnittelu, kuvitus, hahmosuunnittelu |

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**Abbreviations**

| | |
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| Grayscale painting | A method used by digital artists wherein the artist will exclusively work with different values of gray. |
| Photobashing | A term used to describe a concept art creation technique where several photos or reference images are combined to create an artwork. |
| Negative space | Empty area around a design or an object. |
| Compositional flow | Intended route that the viewers eye will travel through the illustration, an effect that is often created by using imaginary lines in the illustration. |
| Suspension of disbelief | Willingness for the viewer or player to allow themselves to believe in the unbelievable in the context of the game. |
| IM | Instant messenger |
| Thumbnails | Small resolution sketches of a landscape painting, often created using the grayscale painting method. |
| Loose | Description given for an unpolished and quick sketch |
| Tight | A description given for a polished and rendered illustration |
| Rendering | A term used to describe an illustration that is highly defined and detailed, often to the level where texture and color are used. |
| RPG | Abbreviation for "role-playing game", a type of sub-genre for games that focus on character building. |

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| "Clashing" colors | Also known as complementary colors. However, what makes complementary colors clashing is the fact that they are used next to each other, at the same intensity and saturation, creating a usually distracting and uncomfortable resonation between the colors. |
| Primary colors | Primary colors in a color space such as RGB and CMYK. |
| Secondary colors | Colors that can be achieved by mixing two primary colors. |
| Tertiary colors | A color that can be achieved by mixing full saturation of one primary color with half saturation of another primary color |

# 1    Introduction

Concept art is artwork that depicts a subject matter that is purely fictional and does not represent a pre-existing thing. Illustration and concept art are often thought to be one and the same, however this is not the case as illustrations are defined by the fact that they represent things that already exist. At its core, concept art is design.

Concept art is one of the most integral ways to create a cohesive and focused art style for a game project. This is achieved by having a small group of concept artists focus on illustrating the look and feel of the world instead of having the entire art department on the project to spend time designing assets. This saves time as well as makes everything fit better together in the game.

The game is conceptualized to be an action RPG arena brawler with the target audience consisting of people of ages 12 – 16 years and up. Therefore, the art style that was chosen for the game was not to be too cartoony in style. Instead, it is designed to look semi-realistic to allow creative representation of the assets in the game while keeping them somewhat grounded in reality. One of the main design concepts for the game is that most the environments and items in the game have magical or supernatural qualities in them.

The author was commissioned the concept art very early in the development of the game. The author believes that the project manager of this game did the most reasonable thing by commissioning a concept artist before any other development had occurred apart from coding. Concept art is the act of creating visual artwork of things that do not exist. Having a concept artist in a game development team can help the production cycle if there are other visual artists in the team who specialize in illustration and 3D art. Concept artists are usually the first ones to design visual assets within a game project and, therefore, they hold a degree of responsibility in the general look and feel of the game. As a single person, or a small group of people are responsible for the concept art, it will allow the game to gain a cohesive art style. If each artist contributed to the concept art

or there was no concept art at all, the art styles could clash against each other in unfavorable ways. An example of this could be a case where the 3D artist in the team is creating realistic renditions of the characters in the game, but the illustrator of the team has a more cartoony style of illustration. If the illustrator developed promotional artwork for the game, it would not represent the game, as the game itself would have a more realistic look rather than a cartoony one due to the 3D modellers in game models.

The author was commissioned by Waterlight Games to create a set of concept art for their upcoming game with the work in progress title "Project wizards". The commission work was created in 2016 and it is still ongoing. Subjects that are included in the concept art are items, characters, creatures and landscapes.


## 2    Analysis of concept art

### 2.1    Review of literature

Many books and articles have been written about concept art due to its existence becoming viral and known to the public in recent years. This is partly due to promotional artwork often being mislabeled as concept art. Although this study focuses on concept art, it will also use sources that are designed for animation or comics. However, most of the rules and suggestions made in these two different fields apply to concept art as well.

When searching for concept art on the internet, most often one will find concept art that is refined to the stage where one could expect them to be illustrations. The distinction between illustration and concept art is somewhat muddled. First the author would like to define these two terms. Concept art is defined as such by dictionary.com [1]

> noun
>
> 1. an artistic rendering of an element or elements in a film, TV show, or video game, created as part of the development and visualization of characters, costumes, environments, etc.

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Illustration, on the other hand, is defined as follows on the dictionary.com website [2]:

> noun
>
> 1. something that illustrates, as a picture in a book or magazine.
>
> 2. a comparison or an example intended for explanation or corroboration.
>
> 3. the act or process of illuminating.
>
> 4. the act of clarifying or explaining; elucidation.

From this we can conclude that concept art and illustration are almost indistinguishable from each other.

When asked about the definition of concept art, username Bammer in the conceptart.org forums provides the following description:

> Here's what I think the difference is, between Concept Art like the stuff on this site, and the abstract stuff an artist with a concept would produce. A concept artist would take an idea of something that could exist, and try to convey it to us. Now this could be a made up thing, like a living creature or a material object. This could even be a situation. It never actually existed, maybe it couldn't exist. But if the concept artist is really good they'll make us understand what it would look like if it did exist. And hopefully, we'll like their concept. Think it looks cool and what have you. [3]

And later they add the following:

> While we create concept art we often take graphical liberties, such as lineart, or limited color pallets, or exageration. I think that these elements are not really part of the definition of concept art. Rather, they are window dressings or biproducts. [3]

The author believes that this definition is quite apt in helping to narrow down the field of concept art and to distinguish a barrier between illustration and concept art. Essentially concept art is anything that can visualize an idea about something that does not yet exist, whether it be an alien creature, a futuristic vehicle or a magical weapon, and do it in a manner that makes sense and looks generally appealing. This means that concept art can be just a couple of lines on paper if that is enough to convey the idea or concept.

The refining process of a concept, such as adding colors, values, details, lightning, may belong to the field of concept art if they are integral in the design. For example, if an alien

is slimy, one must use values and lighting to convey that attribute of the concept to the viewer or if the fact that the vehicle is red is integral to the concept, then the act of coloring a said car belongs to the field of concept art. However, the easiest way to define concept art is the act of creation and visualization of new and never before seen things.

It Is also important to note that the concept artist must make the concept believable in most cases to help immerse the player into the world wherein the concept is used. This does not mean that the concept must work according the laws of nature that exist on planet earth, as the viewer can be held to a suspension of disbelief. We as viewers know that the structure in figure 1 could not exist, it is far too large to be structurally sound and the cave itself is bigger than anything that has existed on earth. However, by implementing elements that mesh together, one can achieve the desired result in the viewer. In other words, viewers can allow themselves to believe that this structure could exist in that world. The red character in the figure is used to imply the size of the player character and while everything is far larger than reality could allow, we can already conclude from this concept that the things that had created this structure must have been either very large or very powerful. All the elements in the concept adhere to the main parameters that are set in place for this concept. The place is dark, old and giant, grandiose even, and each element is built around those concepts. Ed Hooks states the following about the suspension of disbelief:

> The storyteller has to help by telling the story consistently within the pretend parameters established at the beginning. If Indiana Jones sprouts wings and starts flying mid-way through the movie, the audience will feel betrayed, cheated. Nobody said anything about Indiana flying when the movie started, and nobody said anything about him having secret wings [4].

This quotation is from an article where Hooks describes the suspension of disbelief and its importance in theatre. However, the author believes this description works well for video games and concept art as well, if the storyteller aspect of the argument Hooks makes is replaced with environmental clues and in-game characters or storytelling. The author thinks that in figure 1 if the statues that are located around the walkway would have been pristine and untouched, the concept would not have been as effective, because then the statues would have been in stark contrast to the structure that has clearly stood there for many years. However, if this sort of a change had been made, the entire concept would have been changed to reflect that, maybe the structure has some sort of a curse that causes it to age rapidly and then the statues could go from deprecated to

pristine the farther away from the structure they are, effectively conveying this mechanic to the viewer. Therefore, a concept artist must be mindful of the relation of the elements in the scene and how these elements interact with each other. Sometimes it is also beneficial to think of what had happened before in the scene that is illustrated or what will happen in it later.



Figure 1. Concept art for an abandoned structure inside a large cave that was made for the game project. Primary focus was to make it foreboding, dark and long abandoned.

If one could draw an apple based on an image, they found on the internet, that would be purely illustration. The artist is not contributing anything new to the concept other than their technique they use to visualize the apple. If one drew an imaginary fruit that grows on an alien planet, that would be concept art as the artist would be illustrating something that does not exist anywhere else other than inside the artist's imagination.

The author feels that with these definitions in mind one can easily categorize art into illustration and concept art. However, borderline cases exist such as in figure 2 in which the artist has used traditional Germanic buildings as the basis for the city scene. It is difficult to say how strongly the buildings have been referenced. This is a case where it is difficult to say if this piece of art is an illustration or concept art. However, there are aspects that are likely imaginary in this illustration, such as the fire and the crumbling tower in the distance.

Figure 2.  Illustration depicting a burning town that has been modelled based on traditional Germanic architecture [5].

Figure 3 is quite clearly concept art if one uses the previously stated definition. However, if all the aspects of this artwork had been conceptualized before by a concept artist and then an illustrator drew this scene using the concept artist's visual assets, then it would mean that this artwork is also an illustration as the artist did not conceptualize the designs in the illustration but instead used the concepts of other artists. However, if any or all of the aspects of the illustration were conceptualized by the artist that created this illustration, then it is concept art.

Figure 3. Illustration depicting a fictional sci-fi interior scene. This scene quite clearly does not have any real world counterparts so it is most definitely concept art. [6]

Les Pardew states the following about the purpose of concept artists within a project:

> It is the job of the concept artist to visualize the game. The artist must be able to see the game in his mind, and then communicate his vision in art. The first step in getting the vision on paper is to create small, quick sketches, often called thumbnail sketches.

And Pardew later adds as a clarification on the subject of thumbnails:

> A thumbnail sketch is not a precise drawing; rather, it is a quick, loose sketch of the artist's ideas. It is in these preliminary sketches that the artist begins to work out his ideas of how the game should look. The advantage of doing quick, loose drawings is that the artist can explore multiple ideas without committing significant time to any one idea. [7, page 39]

The author agrees with Pardew's statements. Concept artists often should visualize artwork fast and adapt quickly to new ideas. Indeed, concept artists often work on the premise of "quantity over quality" when they begin to visualize an idea. It is quite often heard that concept artists get their best ideas when they are simply drawing whatever comes to their mind. This fast and loose drawing method known as thumbnailing allows the artist not to be too concerned about the artwork being too polished and, therefore, the artist is

not encumbered by realism or other factors that often restrict designs. These loose thumbnails often turn into a self-feeding loop, wherein the artist creates a quick thumbnail. Then that thumbnail inspires the artist to explore that idea further or explore the idea from a different direction. As the thumbnails are done usually in large quantities, the artist may also include more outlandish ideas to explore the subject. It is common that an artist must illustrate a concept several times before they manage to create something satisfactory.

Another sketching method is silhouetting and Mike Yamada states the following about them:

> a silhouette approach for the design of the huntsman. It allowed me to think of the outermost shape. When interior detail is omitted, you need to focus more on making the outer shape interesting and unique. It frees your mind and pen to create things that you would not do when building from the inside out. [8, page 16]

The author agrees with the notions Yamada has made in the book. Starting an illustration or a concept from a silhouette allows the artist to focus on one of the most essential components of the design that is the silhouette. By using this method, the artist can be flexible in shaping the silhouette, working in a manner similar to that of a sculptor by using an eraser to create additional details into the silhouette. The focus on the silhouette also allows the artist to concentrate their attention to the negative space the silhouette implies or creates. Negative space is a concept that is described as such by dictionary.com:

> Noun - empty space, space around an object or form; also called white space. [9]

Negative space in art terms is essentially what defines the silhouette, it is the empty area around the silhouette. One should be careful and mindful of negative space as to avoid making the designs too complicated or cluttered. The main purpose of negative space, however, is to give the viewers' eyes room to rest. If there is no negative space in a design the viewer may feel as if the design is overwhelming and unpleasant to look at. Negative space is also something that will affect the compositional flow of the design. T is most important in illustrations, but it also affects the look and appeal of concepts as well.

Distinguishable silhouettes become even more important when the medium that the designs are used in place them far away from the viewer in some cases. This is one reason why some games such as "Team fortress 2" and "Defense of the ancients 2" (More commonly known by its abbreviated name, DoTA 2) have cartoony and simplistic art styles. This makes the characters stand out much better from the clutter and noise the environment and background create, but most importantly it makes them stand out from all the other characters and objects around them [10, Page 8]. However, it is important to note that it is not just silhouettes that contribute to this fact; instead, it is the sum of every design element on top of the silhouette such as colour, inner details, proportions and contrast. In figure 4 is illustrated the main characters of "team fortress 2". The figure illustrates that each of the characters is clearly distinguishable from one another, each of them has one or more defining characteristics that make them stand out from the rest. In the figure one can also see the effect of negative space has on the impression that the silhouette creates. The characters with the least amount of negative space inside and around them appear heavier. Conveniently, they are the damage dealing classes out of the 9 that are present. This leads to their silhouettes taking up a larger area. the larger the area the character's silhouette covers, the more imposing and strong the character looks. Those with more negative space in their silhouette are the lighter and faster classes. This makes sense as we often correlate fast moving characters with them being lithe in build, while those that we think are strong and heavy we think more as round and bottom heavy.

Figure 4. Image visualizing the fact that even when only the characters' silhouettes remain they are still recognizable from one and another. [11]

Mike Yamada adds the following on the subject of silhouettes:

> …by working from the outside in, you can come upon unique designs that you might not have thought of if you'd sketched from the inside out. [8, page 16]

The author agrees on the point brought up by Yamada, as starting big and gradually working towards the smaller details can inspire new trains of thought as the artist continues to develop the concept further into the smaller intricate details. This is also the foundation of good character design as it is usually not a good idea to start off from smaller details and work up from them, as this can cause the artist to lose focus bigger picture. However, there are exceptions as Khang Le states:

> One of the approaches for character design is to do the headshots first, then design the body around the aesthetic of the head. Once I can see what sort of personality the creature has, I can better judge what sort of costumes he should wear. [8, page 86]

Sometimes the design of the whole can begin from a small specific aspect of the entire design such the head, as Khang stated. The author would agree with Khang as sometimes specific aspects of a design can inspire the artist to further explore the design. A similar approach to what Khang proposed is to build the entire design around a singular detail. This approach is effective when building characters or landscapes which have a

single standout feature. For a character, it could be an oversized eye or a strange hat. For an environment, it could be a giant crystal that stands in the middle of a forest. This approach can create interesting compositional flows as the entire composition in these cases often serves to attract attention to this standout feature.

## 2.2 Usage of concept art in games

The role of concept art in the creation of video games is paramount in creating a cohesive and recognizable style to the whole game project. Concept artists can be thought to be the designers of the assets that end up in the game. Concept artists give the assets their initial design which is then implemented into the game in either 2D, 3D or some other way. By using concept artists to design various assets, one will have a small group that is responsible for the design of the assets instead of spreading this design process to a wider range of people. Also, by having specific people do the concept art, 3D modellers, level designers and illustrators can focus on their work instead of spending large amounts of time thinking about the design for the assets. The job of these experts, in most cases, is to present the design in specific ways and not to come up with one.

Another purpose for concept art is to inspire. Concept art can inspire ideas and grow the project further. Indeed, new ideas can grow from a specific landscape or character. In figure 5 one could wonder what lies beyond the frames of the drawing. Where do these creatures live? What does their society look like? A single piece of concept art can spawn several new ideas or even act as a foundation for an entire project if it manages to evoke inspiration.

Figure 5.  Concept art can and often has some storytelling aspects in it, making the viewer wonder what lies beyond the frames of the drawing.

The purpose of concept art is to guide and assist all other visual artists that work on the project. Concept artists are often illustrators and/or otherwise work in any other closely related field, as many principles that are required in concept art are learned in other visual design fields as well.  The most valuable skill for most concept artists, however, is their own imagination and design abilities. Therefore, concept artists rarely work exclusively on concept art and they often create illustrations or 3D models as well. Many concept artists are familiar with the other workflows required to create visual assets in the game project. This is because sometimes concept artists are tasked to create simple 3D models or animations to convey their idea better. Animations may be required in cases where the concept art is supposed to represent something mechanical or even organic that has movement as one of its defining features. In lar However, in larger studios, these can be done by the personnel who specializes in the field of animation.

Concept art is often created before any permanent visual decisions are made. This means that oftentimes they are the first people to work on a game project. The visuals the concept artists produce are sometimes, therefore, used to promote the project before release. Also, this shows the general idea of the game to potential investors or publishers. However, concept artists often work on the project even when it is near its completion as new assets must be constantly designed and redesigned to most games.

Concept art is also useful for more than just the visual creators. Concept art helps animators and scripters to figure out how something moves or how something would act

and react in the game. It all depends on the type of the concept art. For example, one could create concept art of how a building would crumble in a specific way in the game, or what will happen when the in-game timer reaches a certain point. However, even these examples are most likely more effective to explain with words rather than concept art. In cases where words are not enough and a visual reference is needed, concept art can help to clarify the desired result to everyone. Not only this, but concept art often functions as visual footnotes on the project, helping people stay focused on the projects direction.

In smaller scale projects, which are estimated to be finished within a month or two and have a small team, for an example, a team of 1-3 people with a single person working on the art. In this type of a situation concept art may not be necessary and can instead prolong the project. Despite this, even then concept art is a good way to show the people outside the art department what things are going to look like and what the artist has in mind. Much like a coder could show a demo of how some function does something in the game engine, concept art can demonstrate what something will, or should look like in the game.

In the end the lack of concept art is not something that will prevent a game project from progressing. Rather, it is like having documentation which makes things easier and helps to focus on the things that keep the project moving forward as well as keep the art consistent.

2.3    Analysis of color preferences and their associations

Color alongside other details, such as the silhouette and the values used on the concept determine what sort of preconceived notions the viewer will have. Oftentimes color will be one of the first things a player will notice in a design, so using the correct color combinations is as important as the silhouette and details that make up the rest of the design.

Indeed, much like deciding what sort of a silhouette to use, one must remember the target demographic for the game when deciding colors. According to R. Douglas Fields we may prefer certain colors over others, but only when they are associated with the right things. In their article, they state that while we may shun certain colors, specifically

brown, due to the things that are brown colored in nature, such as dirt and feces. However, we do not shun chocolate for the specific reason that we have eaten chocolate all our life and we know that it tastes good. This is also helped by the fact that it has a pleasant smell. However, if one were to shape the piece of chocolate to resemble something unfavorable then it becomes unpleasant again. Therefore, it can be concluded that silhouettes and colors play together to create specific types of correlations in the viewers' mind. [22]

Reinforcing this sentiment Joe Hallock states in their article that certain age groups prefer certain types of colors. This makes sense, as we are grown up to like certain colors above others, boys are exposed to more blue hued colors and girls are often exposed to colors that are more pink and red. Another factor that affects this are colors that are in fashion and trending. A detail in Hallock's study that is interesting to note is that brown is by far one of the most disliked colors alongside orange. The fact that orange is so disliked is rather interesting and as Hallock states, it may be because orange is a brighter hue of brown or alternatively that orange is a color that is currently out of style. The disdain for these colors is illustrated in figure 6. Blue is one of the most liked colors among all age groups, and the fact that orange is usually accompanied by adjectives such as energetic, happy, warm and blue, on the other hand, is usually accompanied by adjectives of the completely opposite side, such as depression and sadness. It could be that blue is more liked due to the evolutionary influences that color has on people. Blue water is clean and blue skies usually accompany a good weather. [23]
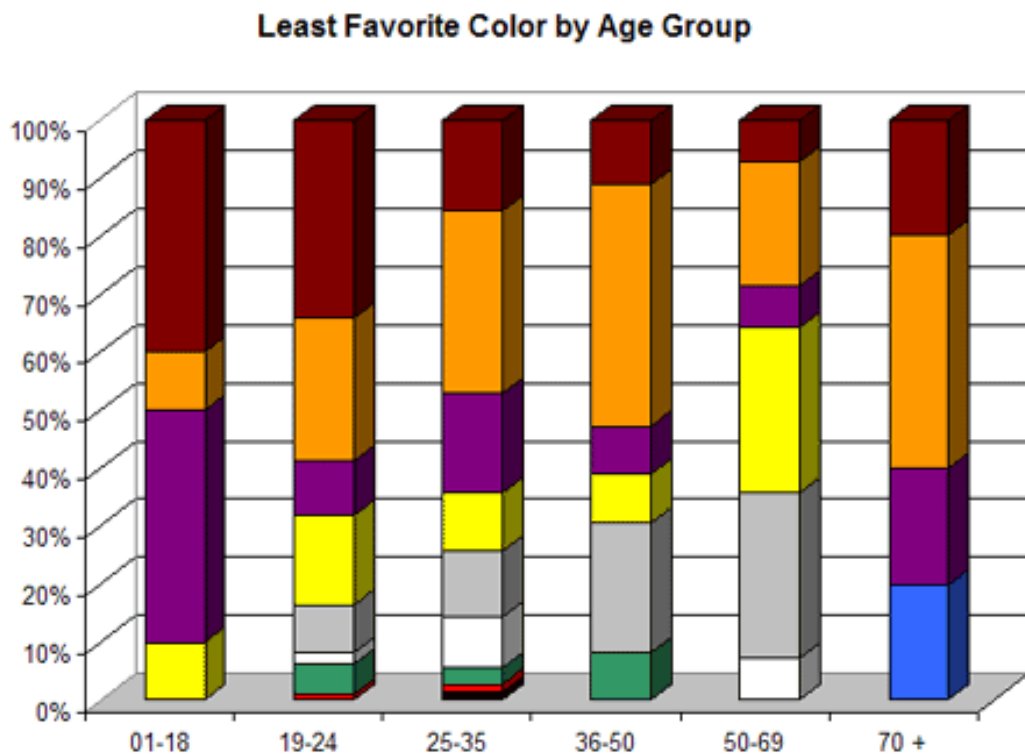
## Least Favorite Color by Age Group



Figure 6.   Graphic depicting the least favorite colors among age groups. Brown and orange are among the top most disliked colors among all age groups. Purple is also a color that is disliked by many age groups. [24]

Knowing what colors people dislike one can draw conclusions to which colors one should use in different situations to achieve a specific reaction from the player and to target the designs to a specific audience. However, one must remember that the designs a concept artist creates rarely exist inside a vacuum. Usually, they are accompanied by surrounding lighting that will affect the perceived color of the design. Despite this, coloration is something that will affect the preconceived notions a player will have of the design. For example, one may think a creature or character that is blue and white to be good, but one that is red and black to be evil.

The author believes the drastic change in the preference for the white and blue colors in the highest age group displayed in figure 7 is most likely due to changing trends or the smaller sample size for this age group. Also, the colors blue and white could be favorited by the older age group due to the calming effect they have on people which has caused these colors to be used in many facilities. The popularity of the green color among most age groups could be explained by the fact that it is often associated with nature and environmentalism which are both valued concepts. It can be helpful to think about colors

before working on a concept to help one figure out the fundamentals of what the design should look like and what it should convey to the viewer. Is it supposed to be energetic? Then yellow, orange or light blue could be good choices for color as these are very energetic colors, orange and yellow can be likened to fire and light blue to lightning. Is it supposed to be slow and stagnant? One could try to use light brown, gray or green, all colors which hint towards rocks and nature, all of which are naturally slow moving things. The more stylistic the concept is (or otherwise detached from reality) the more the artist can experiment with colors, as with heavily stylized designs one can use more intense colors than in more realistic ones. One should not downplay the role of color in designs that aim towards realism however, even if the colors in realistic designs often lean towards less saturated colors they are still just as important. When using more saturated colors, the artist should also be wary of using saturated colors in the environment that surrounds the character to avoid making things too saturated and to avoid exhausting the viewer's eyes with and overabundance of distracting colors.
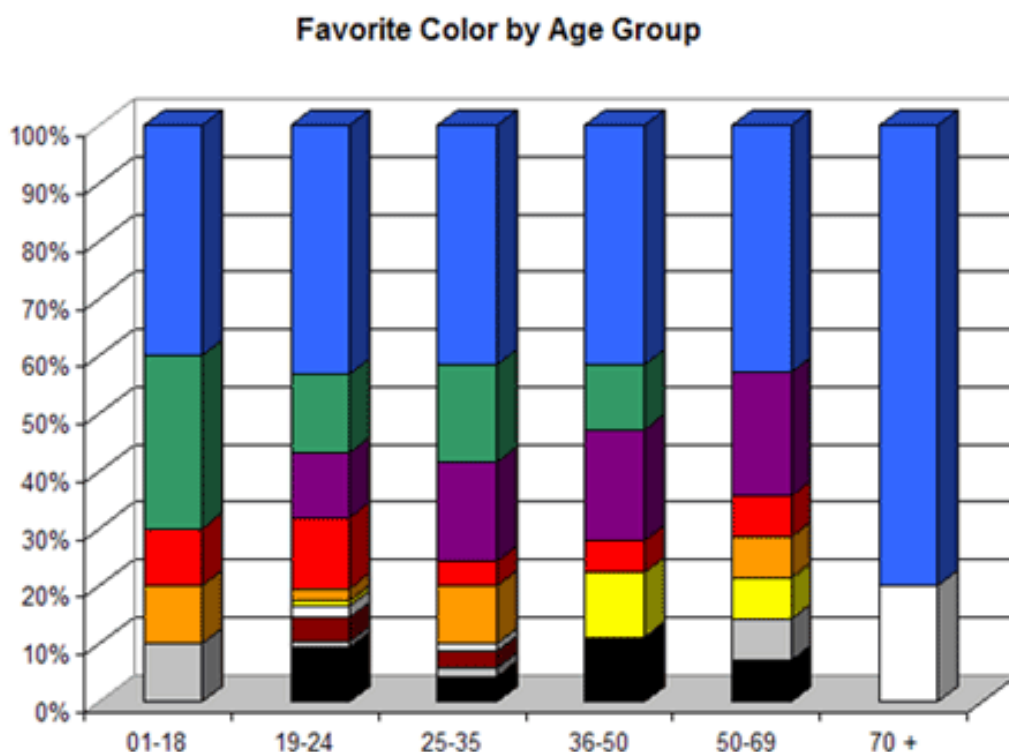


Figure 7.  Even though purple is one of the least liked colors it is also favored by many. [24]

If one could target a design towards females, for an example, a female protagonist or a character that females should sympathize with, one could use the favorite colors shown

in figure 8. Purple seems to be the riskiest color, however, as not many males like it, but a quarter of females report liking the color. As we see in figure 10, blue is the safest color choice as 42% of the people who were included in Hallock's study reported it as their favorite color. Different cultures will also affect the color preference, as specific colors can have various meanings depending on the culture of the viewer. Knowing this may allow the artist to implement hidden meanings to the design merely by usage of coloration.



**Female - Favorite Color**
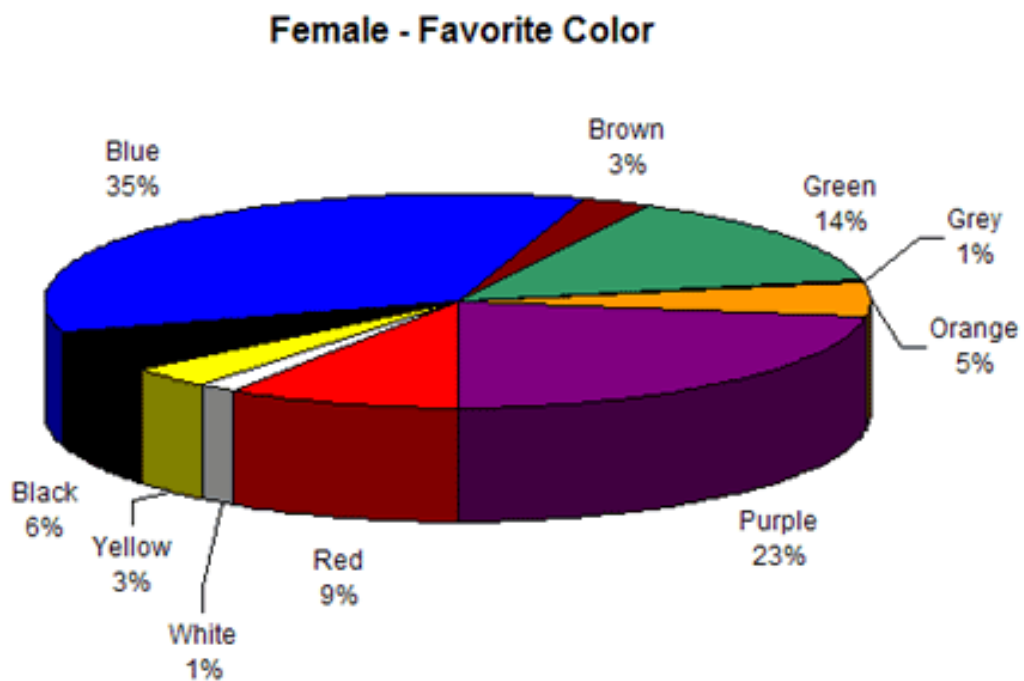
Figure 8. Favorite colors among females. The favorite colors among females seem to be centered around the purple and blue colors, however there is no clear winning majority as there is in the opinion of the male participants so it is difficult to draw conclusions from these statistics. [24]

It is interesting to note is that there is a sizeable difference regarding the favorite colors of males and females (figure 8 and 9). It seems that males are more unanimous in their preferred colors as the majority consider blue to be their favorite color. This could be because in western countries blue is often associated with boys, so early exposure for this color may have an impact on their preference. Blue is also a color often associated

with bravery and dependability, virtues which are often attributed to males in fantasy stories.

The pleasantness of blue and green can be also be explained by considering their evolutionary importance as being colors that appear in nature in positive context. Blue skies mean that there is not going to be a storm and green leaves and plants mean healthy food sources. There is, most likely, some bias towards blue due to the high favoritism for this color in the male statistics. However, as both males and females like this color, there may be more than just societal influences that affect these results.

**Male - Favorite Color**
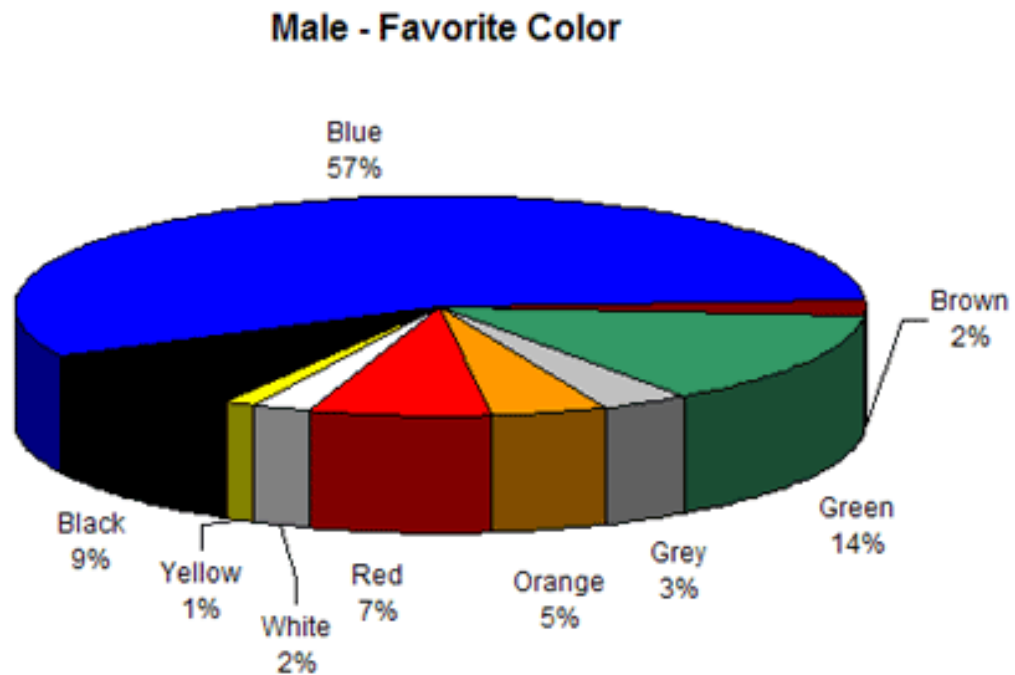
Figure 9. The favoritism towards blue in males can be attributed to the fact that blue is considered the color of males in western societies. [24]

The reason why purple manages to be one the 3rd most favored color in Hallock's study is quite unclear. Perhaps its old associations with royalty are part of the reason. Purple is also a relatively unnatural color and it is rarely seen in nature. This could lead some people to associate it with supernatural or magical things. Its disdain in the male group could be attributed to it being very close to pink, which has traditionally been a color associated with feminine qualities. Purple is a mixture of 2 colors, so there are many

variations of it. Purple that is darker and blue could be more attractive to males. On the other hand, purple that leans more towards red or purple that is mixed with a lot of white to create a pinker color could appeal to females more.
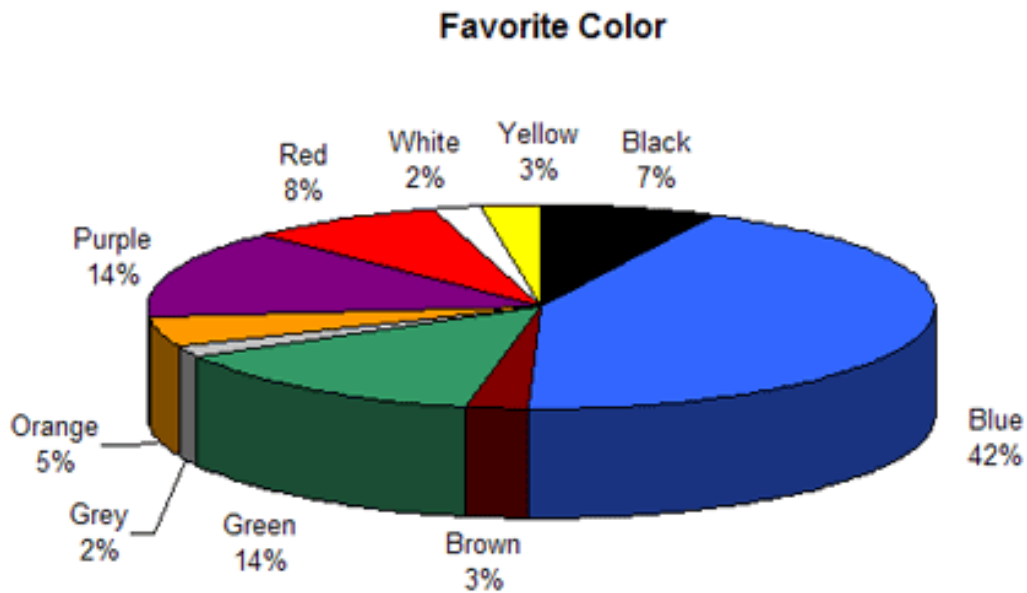
**Favorite Color**



Figure 10.    Natural colors seem to be most favored in the Hallocks study. Purple is also a popular color among the people whom were tested. This can be attributed to the fact that purple is a color that is often associated with the elite and royalty. [24]

Colors often have associations attached to them as can be seen in figure 11. Cultural differences also exist with colors. A color that may mean something in a certain culture can mean something else entirely in another culture. Due to this a design that is supposed to be warm and cute can look hostile and deceiving in a different culture because of its colors. Therefore, it is important to keep in mind the primary geographical and cultural area where the game wherein the design is used is sold and played. In some cases, it may be beneficial to change the design for versions that are sold in different geographical areas such as Asia.
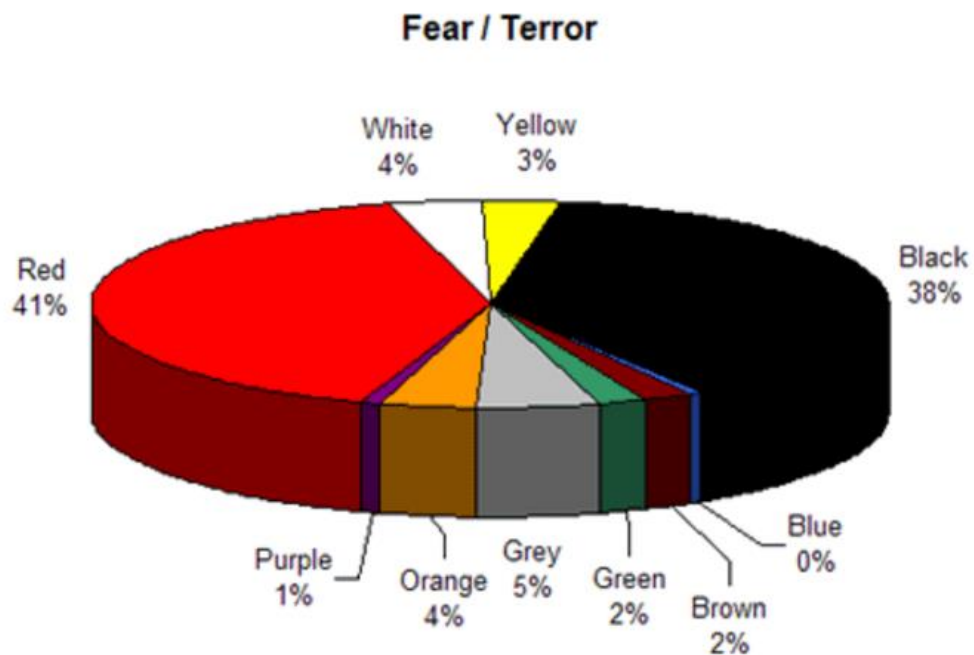
## Fear / Terror



Figure 11.     Colors also have various associations attached to them which an artist must be mindful about. If used properly the viewer may already gain a lot of information of the object they are looking at just by its coloration, should they approach it? Should they attack it? Should they trust it? [27]

What these studies do not consider, however, are color combinations. Usually singular colors do not create undesirable looks, but the combination of two or more carelessly chosen colors can create a visual design that is appalling and unpleasant to look at. These color combinations often are colors that "clash" against each other. Colors that clash against each other often are saturated opposing colors that are next to each other. An example of such a combination would be very saturated hues of blue and red. When these two colors are placed next to each other, it creates an uncomfortable sensation in the viewer as these colors, being opposing colors, intensify each other when they are in each other's presence, as seen in figure 12. Therefore, when using opposing or comple-mentary colors, it is important not to use the same level of saturation on both colors, or to avoid placing these colors next to each other with the same lighting value and satura-tion. Sometimes this effect can be used to intentionally draw the viewer's attention to a specific spot, as the area where this effect is used will be eye-catching and difficult to ignore.

Also, what these studies do not include are analysis on the different hues of color. It makes sense why Hallock did not include hues and instead focused mainly on the primary and secondary colors. If all the hues of all colors were introduced in the study, the results would perhaps have become too divided to make a proper analysis. This detail can not be ignored, however, as some hues of the same color are more appealing than others.

In figure 12 the spots where the colors meet each other resonate in an uncomfortable and distracting way. The color contrast between the colors is so large that they look more saturated than they normally would. This happens because in this image by placing these colors next to each other they provide points of comparison to the viewer when looking at them which intensifies the colors. This effect is much akin to the phenomenon where a perfectly black pixel is considered to be darker when surrounded by white than if it were surrounded by other black pixels. The phenomenon is essentially the same here, but it demonstrates that this phenomenon is not exclusive to values and can happen with hues as well, if the saturation of the hues is high enough.
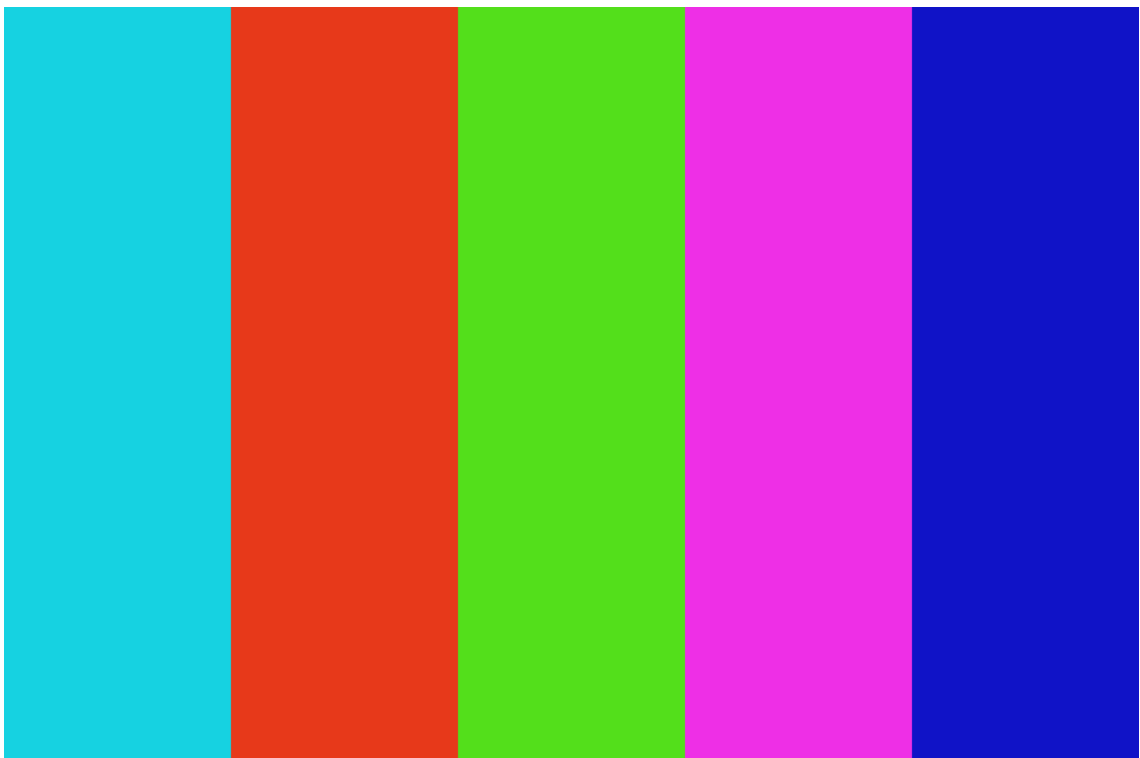


Figure 12.    Example of clashing colors. The spots where the different colors border each other are perceived to be far more intense in color than they normally would if they were bordered by a more similar color. [29]

# 3  Analysis of concept art creation techniques

Before beginning to work on this project, the author searched for various methods to quickly create concepts of different ideas. Five most prominent methods of creating concept art are shown in figures 13, 15, 16, 18 and 19. From these methods the author used the techniques shown in figures 13, 15 and 16. The author did not use the photomanipulation methods shown in figures 18 and 19 to produce concept art for this thesis.

## 3.1  Concept art illustration techniques

The method shown in figure 13 is known as thumbnailing and the author decided to use this method when creating landscapes as the author feels that this method is a quick way to create easy to read landscapes for the project manager or client. Also, with this method, the viewer will be able to quickly see the general composition and focal points the landscape has. Having a strong focal point in a landscape concept, the author thinks will make the concept stand out better and tell a story to the viewer or at the least make the viewer wonder about the importance of the focal point. In the examples shown in figure 13, the value range is mostly limited to black, white and 2 values of gray. The author instead opted to use a more wholesome range of values as seen in figure 14. When creating landscape concepts, it is common practice to use most of the values available. This means that one should use at least some light values from both ends of the value scale. Areas with the most light value contrast attract attention from the viewer.

Grayscale painting is a frequently used term to describe paintings that do not employ the use of color, but instead rely only on values. The thumbnail sheets in both figure 13 and 14 both use this technique in their thumbnails. Notable about the thumbnails in figure 13 is the artist's self-imposed limitation of values. This technique was most likely used to make the depth and distance that is present in the thumbnails more emphasized. One can see that the shapes farther away from the viewer, are also less contrasting against the background and the shapes that are in the foreground, are the darkest and, therefore, have the most contrast to the background, creating an illusion of depth and distance to the viewer. To be able to convey this distance and vastness in a landscape the artist must understand the principles of ambient and atmospheric lighting. Another factor that implies this distance is the overlap of the elements in the concepts.
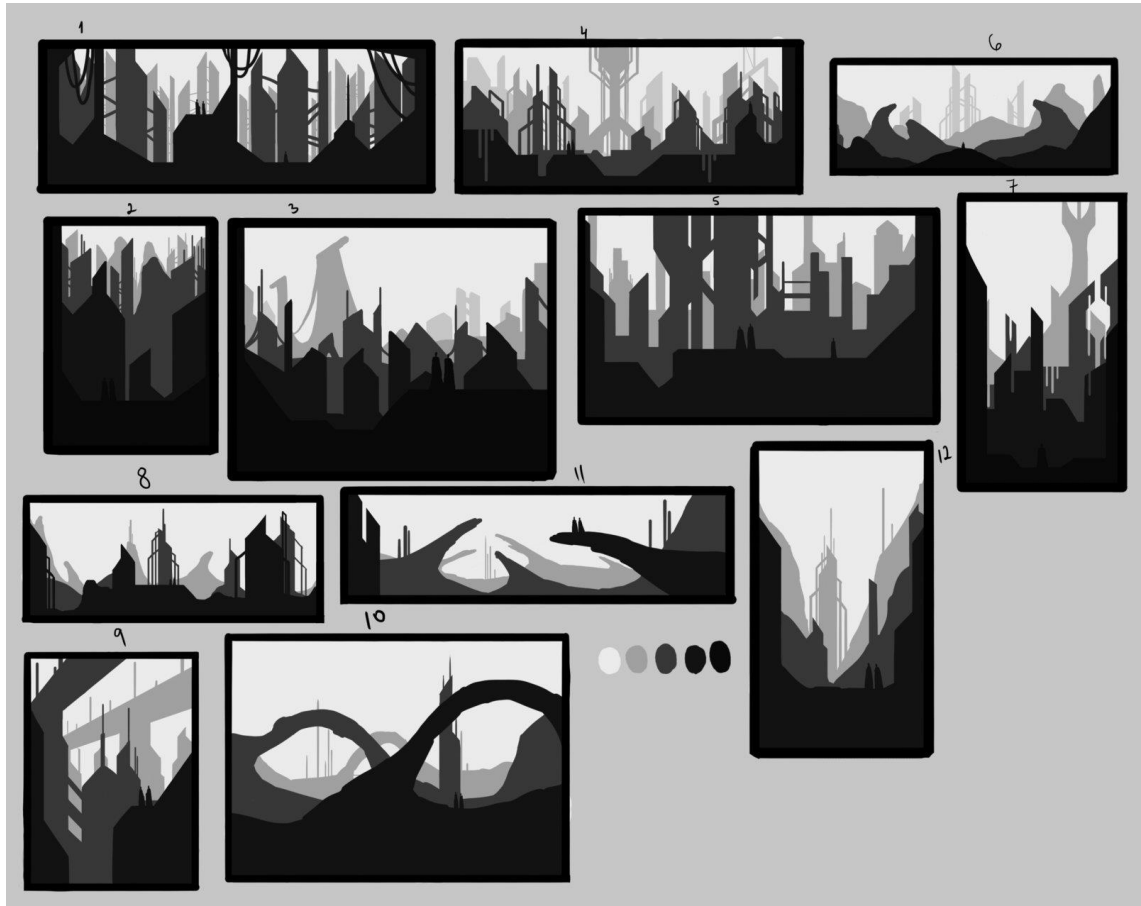
Figure 13.    Landscape value thumbnail concepts by Lantios. [12]

In the Concepts illustrated in figure 14, the focus was to create a "mysterious, foreboding and unusual place". From the concepts seen in the thumbnail sheet in figure 14, thumbnail number 4 was chosen for further development. The result of this thumbnail can be seen in figure 1. As most concepts do not have identifiable sources for size at this point, or if familiar objects are made larger than usual, it is important to place an anchor of sorts that will tell the viewer of the scale of the landscape. The author chose to place a human figure on each of the concepts to convey this sense of scale. This is common practice in many landscape concepts.

Figure 14.     Landscape thumbnail concepts for the project. A human figure was placed on each of the thumbnails to convey the sense of scale to the viewer.

As for the character concepts, the author decided to use the silhouette method, which is illustrated in figure 15, wherein a silhouette of the character is first developed from which the general feel of the character will hopefully be readable. The silhouette method is quite effective when creating more focused detached objects like characters or items where their silhouettes are one of the main defining factors in their identification. As silhouettes are often one of the things the viewer notices first, and, therefore, creates their initial assumptions on this object, it is very important to get them right.
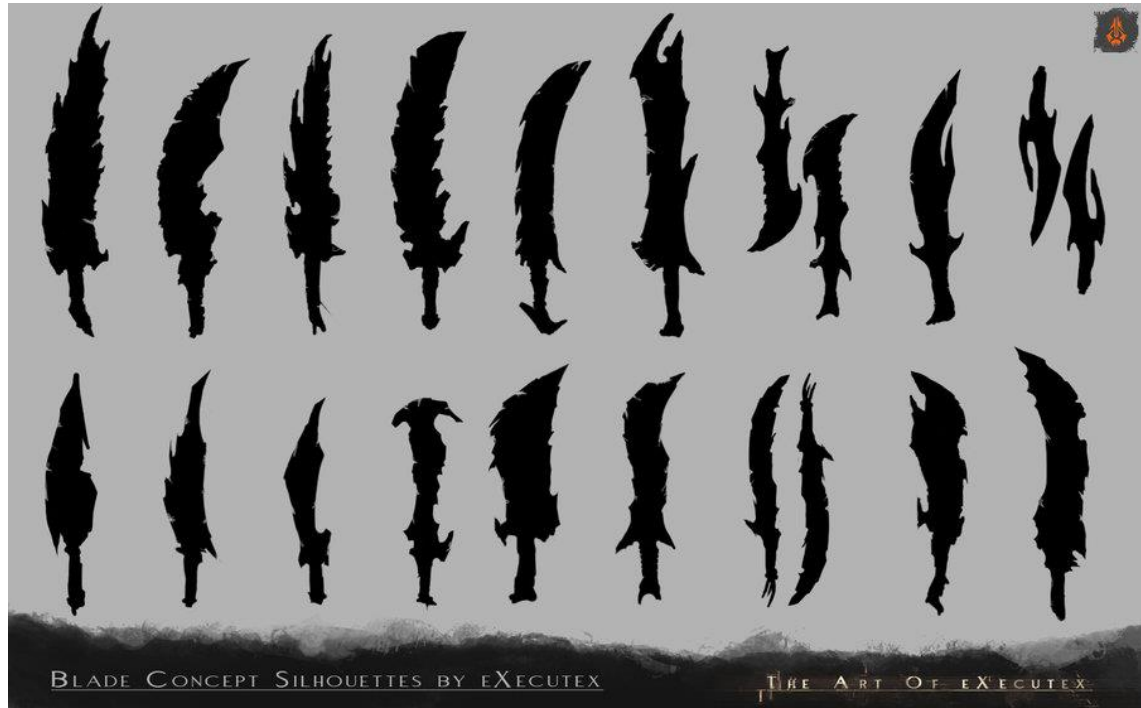
Figure 15.     Bladed weapon concept art silhouettes by eXecutex. Despite these silhouettes having no inner details, assumptions are immediately instilled in the viewer from the various shapes and negative space that is implied in each silhouette. [13]

For the items and other miscellaneous concepts, the author used a combination of the two previously mentioned methods as well as sketching, the latter of which is illustrated in figure 16. However, it seemed to the author that the concept art industry seemed to be almost unanimous in the idea of starting concepts in black and white or with a single tone sketch. This makes sense, as immediately going to colors can be intimidating some-times, especially when the colors for the object are not yet decided upon. By limiting oneself to a single color at the start of a concept can make the concept art process much easier to bear, as it becomes more like a process with clear definite breakpoints. The following could be an example of a sample workflow with clear definite steps:

1. Create the silhouette using a single value of gray.
2. Add values to the silhouette.
3. Add colors to the object.
4. Render the details sharper on the object by adding more contrasting values.

Figure 16.    Character sketches by Alia3a. We can notice that the artist did not worry too much about being anatomically correct with these sketches, more importantly they focused on trying to convey the general feel and shape of the character. [14]
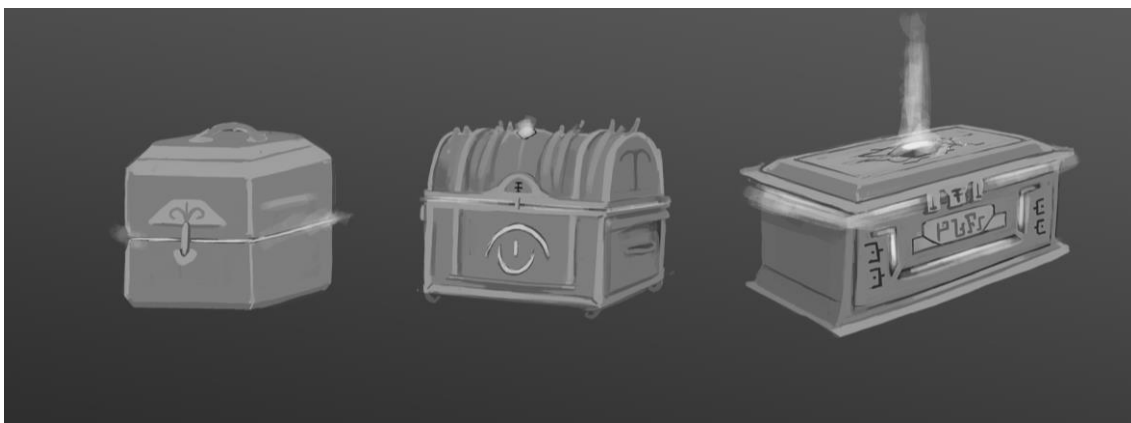


Figure 17.    Value sketches for 3 different treasure chest concepts. The author had a clear idea what to do with these chests and the final designs were drafted in higher detail. However large changes were made to the designs afterwards, despite of this the silhouettes of each one remained somewhat unchanged.

## 3.2    Concept art photomanipulation techniques

Matte painting is a technique where the artist combines photos together to create something new, as illustrated in figure 18. Matte painting is an old technique that has been used since the beginning of the 20th century in movie making [28]. Even though matte

paintings are most often seen used in movie production, they are also frequently used in the creation of concept art due to the speed and convenience this method provides. Matte painting is a method that leans very heavily to the use of photos, so the artist must have an extensive library of photos to choose from to create innovative matte painting concepts. Instead of using illustration techniques, matte painters often use a technique known as masking. Masking is the act of making a part of the photo transparent to allow the placement of the photo inside another photo. In essence, matte painting is digital collaging. Matte painting does implement a degree of illustration as well, but it is most often not a very integral part in the matte painting work process anymore due to the excess of pictures that can be found online. Most often matte paintings are not painted over in the traditional sense of the word, but instead the source photos are masked and their colors and values are changed in such a way that they fit together seamlessly.

Figure 18.        Matte painting workflow. The original image is still identifiable from the finished result. However, by combining different photos the entire look of it has been successfully changed. Most importantly, the final result retains its photorealism. [28]

"Photobashing", as seen in figure 19, is a method in which the artist uses several photos and combines them into a collage to create a new design. Photobashing is done by combining photos together and then painting over them. Both methods are widely used in the concept art community. The key advantage photobashing provides to the artist is the possibility to implement realistic lighting and texture to the concept fast, providing a quick turn over for the concept. However, unless royalty free images are used for the photobashing process, the artist may run into problems with copyright unless their work is transformative enough to be considered fair use. In a professional setting the artist should consider this to avoid any legal troubles for themselves and their employer. Photobashing is usable in both the creation of smaller assets such as characters and objects

as well as in creating landscapes. Photobashing is not as reliant upon the references an artist has at their disposal, but more on their imagination and their ability to transform the images into something different. Some consider photobashing as a bad form, and as a means of "cheating" as the artist uses material made by other people or that is found on the internet as a part or as a foundation for their artwork. This criticism, however, is ill based as successful photobashing requires the same skill sets that an illustrator would need and even more.

Sometimes 3D modelled images can also be used in photobashing as well as matte painting to act as a foundation for the artist to paint upon. This is especially common in cases where a real-world counterpart cannot be found, such as if the concept has unique geometry or architecture it may be easier to make a base model in a 3D modelling program and paint over it once it has been transferred to a 2d-image.

Photobashing and matte painting use the same principles or drawing on top of a picture. However, where photobashing differs from matte painting is that photobashing is used to create concept art and illustrations, whereas matte paintings are highly realistic and polished photomanipulations used in production. However, matte paintings much like photobashing, often use illustration techniques to alter the source material. One key difference between the two is that in photobashing the artist usually tries to hide the photo reference under the paint, but with matte paintings it is often clear that photos have been used and this is usually the desired result as well (In good matte paintings the photos are collaged in such a way that the fact that several photos were used, is not blatantly obvious).
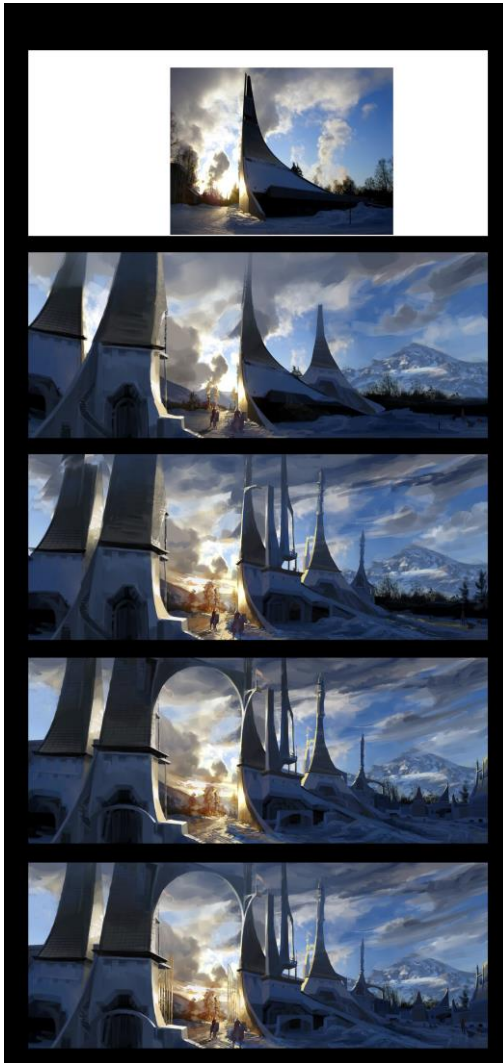
Figure 19.    Image depicting the workflow of a photobashed concept image. As can be seen in the figure, using this process allows the artist to create a believable scene in a reasonably small amount of time. Especially here the original photo has been used effectively, as the artist has used the same color palette for the final photobashed piece [25].

## 4    Creation of concept art

The creative work in a video game project starts from the project manager, or the group of people that manage the project. Oftentimes during the conception stages of a project a concept artist is hired to assist in creating the general feel and look of the overall project. Sometimes a concept artist can be brought to the project before there is a comprehensive idea of what the project will entail, or before there is a design document for the project. In these cases the concept artist may have a stronger influence on the direction that the project may take. The concept artist's task is not to create assets that will be

used within the game, but to create imagery that will help the illustrators, 3D designers and level designers who are involved in the project to create assets that can be implemented into the final product. Whether or not there are several artists in the project, having a designated concept artist or group or concept artists will make the feel of the concept art more uniform. A concept artist's core responsibility is to visualize ideas.

Often a rough idea is developed by the project manager or lead visual artist that is then sent to the concept artists for visualization. These rough ideas can range from purely textual reference to visual reference in the form of photos or sketches. Once the work begins on the concepts, concept artists are usually expected to produce results within a short period. Therefore, concept artists traditionally have worked locally inside the business to which they provide concept art, so they can quickly show their visualized ideas to other members of the team and get feedback from them. However, working remotely is also possible, but the feedback cycle tends to be much longer due to time zone differences and the nature of e-mail being considered not as urgent as face to face conversations. [15]

It is also important to differentiate concept art and illustrations from each other. The purpose of concept art is to communicate ideas visually which allows it to not be as visually polished or appealing, whereas illustrations are very polished and presentable pieces of art that are often used for promotion campaigns and marketing. The lines between these two fields have become blurred overtime, and illustrations are often mistaken for concept art and vice versa. This can bloat the expectations that project managers have for concept art, as well as blur the lines between the two fields. Concept artists, however, are often skilled illustrators as well, as both fields require a similar set of skills. However, it is beneficial for all parties that these fields remain separate as to make it more clear what is expected from the artist. In the end, however, it depends on the project manager what quality of art is required. Having more polished concept art means it can be used for future promotional campaigns and products, such as concept art books.

Metropolia

## 4.1 Conception of a concept

The work for the concept artist begins once the project manager gives them a set of references to work from. These references can be either in the form of text or images, or both. From here on out the task of the concept artist is to turn these references into something visually appropriate. The problem that the concept artist must solve here is a visual one, wherein the artist must find a way to incorporate the references that are given to them to the design and incorporate new and unexpected things to make the concept interesting. When working from these references, the artist can use several methods to solve the problem. One of the more methodological approaches to solving this problem is to use various thinking methods, such as mind maps or brainstorming. The latter only applies if a group of people is available to cooperate with the problem-solving process. Usually, however, the concept artist works as an individual and they are often employed due to their ability to create interesting designs without the need for extensive group meetings. These methods may seem counterintuitive, as one may think that the concept artists task is to create visual material. Contrary to this belief, concept artists may approach the visual problem by non-visual means using writing instead of images to get a clear idea what they must do to make the concept art successful. These thinking methods are useful in cases where the concept artist has been given plenty of freedom, or when there are few or too many references to pick from. Building a mind map allows the artist to explore the concept with a larger scope, mapping out different variables that connect to the concept. Using various thinking methods will also help the artist to broaden the idea given to them, opening it up to more possibilities and ultimately making the concept more interesting as more ideas are incorporated into it. In figures 20 and 21 mind maps are shown that the author used to broaden two different ideas before beginning sketching them.
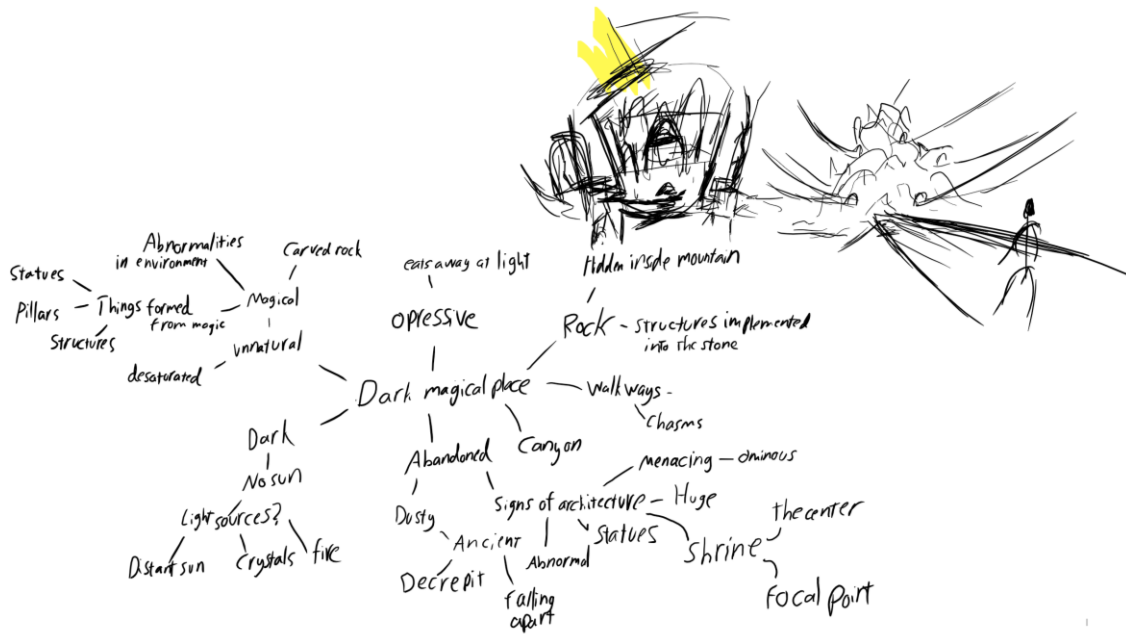
Figure 20.    An example of a mind map used to refine the concept of a landscape. The mind maps do not necessarily have to be very complex and can only outline some of the basic features that exist in the scene.

Mind mapping is indeed very useful when the concept that is being worked on is something of a larger scale, such as a fantastical city or a key landscape. With mind maps the artist may think of things that could have a cause and effect relation with the landscape before they begin with the visual aspect of the work. This will help breed more ideas as well as help in creating believable and interwoven concept pieces.
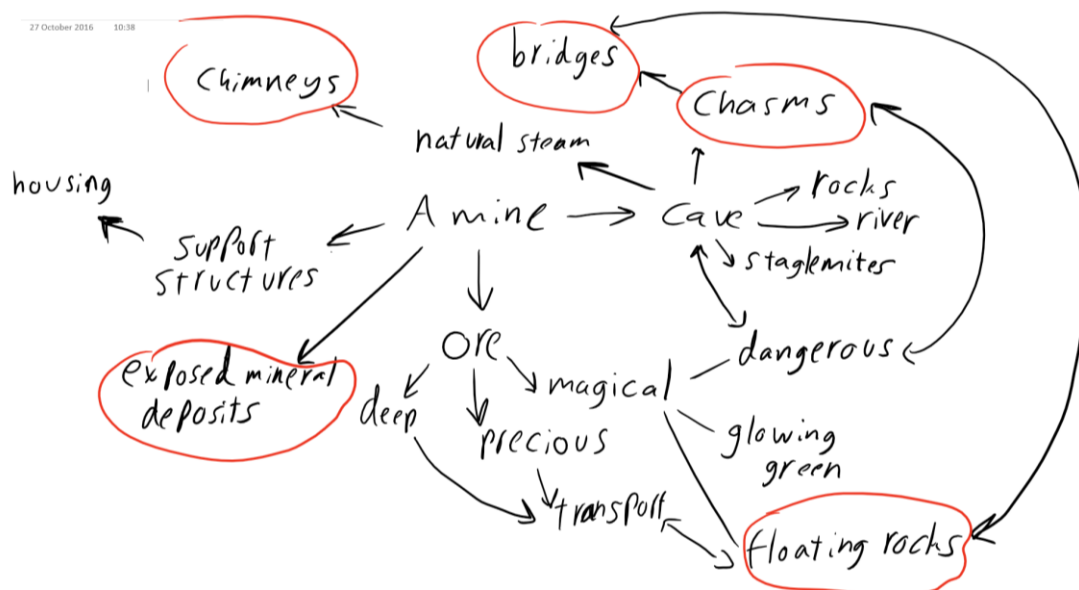
Figure 21.    A design mind map for a cave environment accompanying this the author also wrote the following to help himself to further explore the concept:

> A rich mine that is crowded with precious green growing ground crystals as well as hexagonal mineral structures. Small rivers have carved small ridges for themselves along the floor of the cave, from which the small streams fall into large chasms. The cave has been long abandoned and magical plant life has started to grow off from the exposed crystals. Old structures remain in the cave, long since abandoned. Little pillars of light manage to penetrate into the cave from above, but majority of the light is provided by the plants and fungus as well as the green magical glowing crystals.

With smaller and more precise concepts that focus on one particular thing, such as item designs or characters, mind mapping may not be necessary. However by creating a mind map from the world they live in can help the artist to figure out what their clothes may look like or what type of decorations may be on the items they are carrying. If, however, the project already has a comprehensive world building document wherein the world the project takes place in is described, the concept artist will most likely be prompted to use said document rather than creating things from a scratch and possibly causing contradictions to what is said in the document. At the time of writing this, project wizards did not yet have a comprehensive world building document. Learning more about where the characters are from and what they do by using various idea generating methods such as mind maps can also aid in coming up with accessories and weapons that the characters may wear and use.

4.2    Thumbnails and silhouettes

The author's involvement in the project included the creation of several concepts of various areas of the project. These included, concepts for the main characters, creatures that inhabit the world the project is set in, various staves and wands that the main character's use, key landscape concepts, spellcasting books and various other items.

For each of these concepts the author used various methods of approach to visualize the basic ideas. Because of the difference in the complexity and scale of the concepts that were developed, various methods of sketching were necessary to make the workflow faster as well as more visually readable to the client as progress updates must be sent to the project manager frequently to make sure that the concept is moving towards the intended direction.

For landscapes the author opted to use a method that concept artists use known as "thumbnailing". With the thumbnailing method the artist will create several rough sketches within a short amount of time. Usually four or more of these sketches, also known as thumbnails, are made to give the client a variety of concepts to pick from, however the amount depends on the artist and the project manager. With this method, the artist may create varying thumbnails much faster and the focus in thumbnails tends to lie in the composition and values, but they may also contain basic coloring, however thumbnails are largely created in grayscale especially when created digitally. Working with only varying values of gray the artist may focus solely on the composition and values and can ignore the colors at this phase. This not only makes it more simple and easier for the artist as there are less factors to worry about, but it also makes it faster to produce thumbnails. The grayscale method is most efficient when working with digital media. However, it is possible to use this method with traditional non-digital tools by using graphite pencils. However, when using this method with non-digital tools adding color to the grayscale image becomes more challenging.

Thumbnails are meant to be loose and sketchy, only conveying the general feel of the environment or whatever it may be that is presented in the thumbnail. The author approached the creation of these thumbnails in a way that involved creating 6 different thumbnails of various scenes that fit the general motif of the environment that was to be visualized. An example of this process can be seen in figure 22. Sometimes thumbnails

are created of one precise scene but from various angles to showcase different compositions and different parts of the environment. However, as the author was given a lot of freedom in the environments that could be presented, the author instead opted to create the thumbnails of different types of environments. Since thumbnails are quick and loose sketches it is not a large setback for the artist if none of the thumbnails are accepted as is and oftentimes a rejected design will tell the artist more on what the project manager requires. However, one should not underestimate the importance of the thumbnail step, as it is largely what defines the overall feel and look of the final illustration and will basically function as the foundation for the illustration to come.
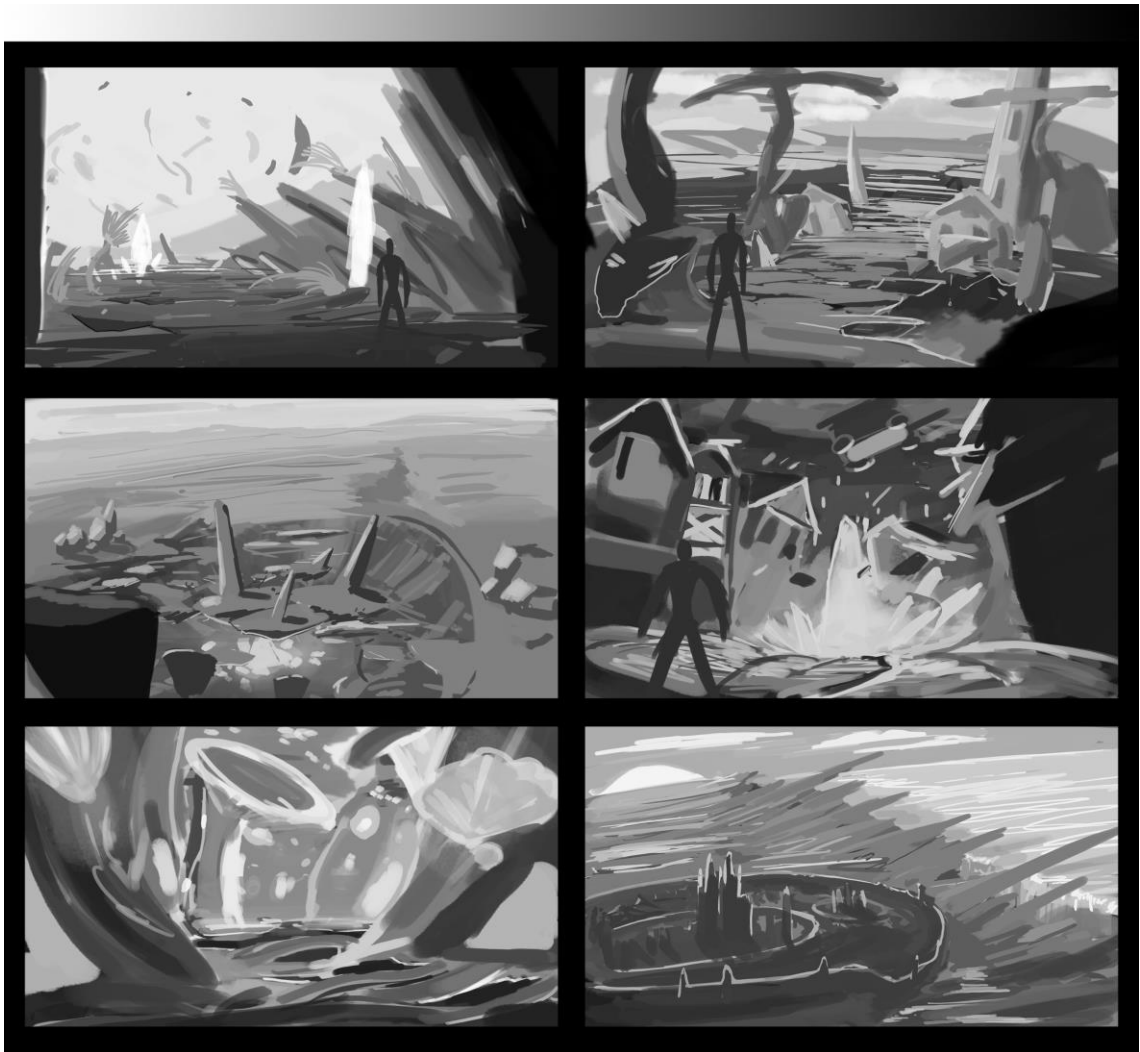


Figure 22.      A set of landscape thumbnails that were created for the project to depict an area that has been influenced by magic. After having done these, in retrospect the author realizes that when creating thumbnails one should focus on the values of the larger shapes by using a large brush. Using smaller brush strokes would also help to create a better sense of texture. Using value gradients is also advised to give a better sense of the direction lighting.

Silhouettes are another method of conceiving tangible visual concepts from ideas. Whether the artist uses the grayscale method or silhouettes depends largely on what the artist is creating a concept of. Silhouettes require that they do not have a very complex background behind them to make them easily readable from the image and, therefore, the silhouette method is best suited for when visualizing characters, creatures, buildings, objects and items, generally things that can be detached from their environment. When creating landscapes or concepts which include complicated silhouettes it is best to use the grayscale painting method.

Silhouettes are a very integral part of any singular object within a visual project. In games silhouettes are often given a lot of thought, especially in games that will involve fast paced action. This is due to the fact that the silhouette of a creature or an object is often the first thing the human eye notices, before any smaller details. Therefore, it is important that the silhouette of important key components in the game are distinguishable from the rest so the player may notice them from the background objects much easier. For the character shown in figure 23 the artist presented several variations of a singular idea in different ways. From each of the silhouettes we can notice a few key details that stand out. It is recommended to keep these eye-catching details to a minimum, however, and to try to make the silhouette as clean as possible, this is one of the foundations of good character design.



Figure 23.     A sample of silhouettes for a character in the game project. This character was built around the concept of it living in the water or an area near water and having features of different fish and sea creatures. In retrospect, the author would state that being loose and using quicker brush strokes is most beneficial in silhouettes, this does not only create more interesting silhouettes through possible unintentional brush strokes but is also faster. Therefore, the author would state that when creating silhouettes one should not focus too much on lines, but instead focus on negative space, using the eraser as much as the brush to create details.

Figure 24 illustrates several silhouette designs for various staves and wands for the in-game characters. Usually it is not of paramount importance to be accurate during the creation of silhouettes and time spent on each of these silhouettes was kept to a minimum. Working like this allows the artist to create many different variations and allow the client to choose the most pleasing ones from a wide variety of options. On the contrary if one would spend a lot of time doing just a few concepts, then there is a higher risk of wasting time if the client does not like any of them.
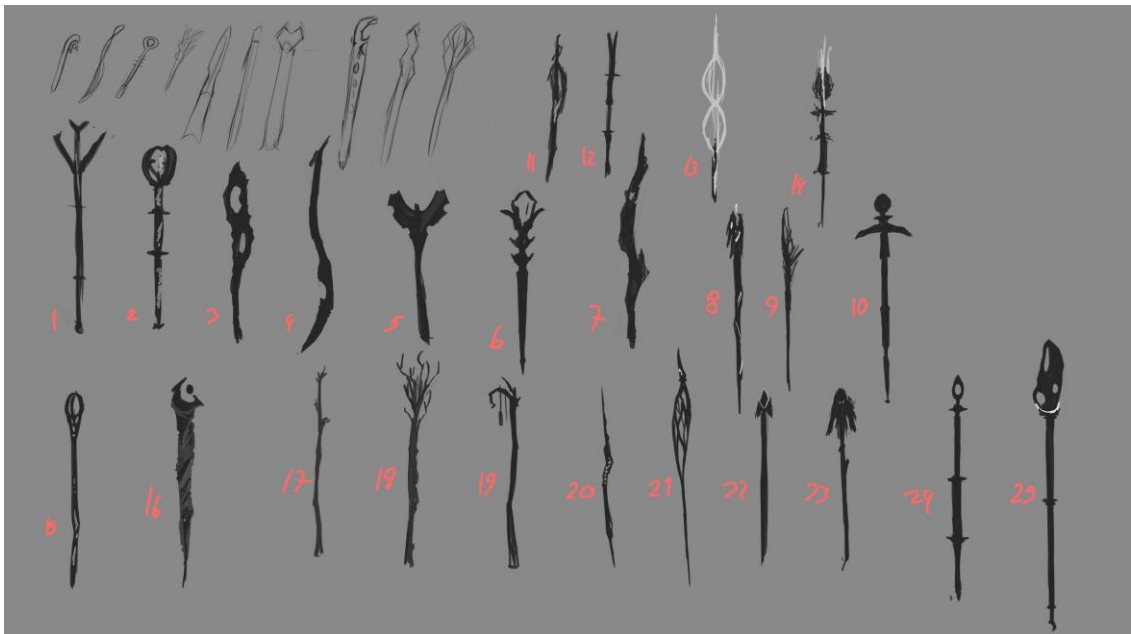


Figure 24.    These concepts were made in a quick succession and the aim was to focus more on making each silhouette unique than spend time on making only a few of them appealing.

In figure 25 there is an iconic video game character and by studying the colored and the silhouetted version of the character we can see that it is recognizable even when all features other than the borders of its silhouette have been stripped from it. Most notable features of this character are the body proportions, the hat, the nose and the moustache. This means that this character is still recognizable in situations where there is a lot of things happening around it as the character has a unique silhouette, not to mention eye catching coloration.
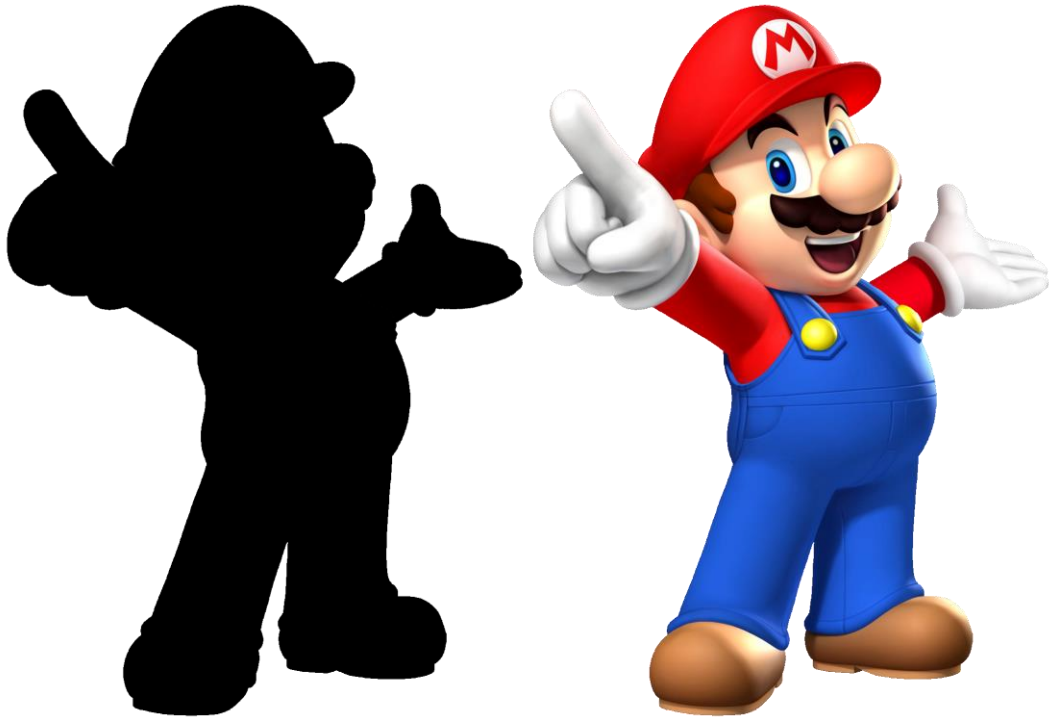
Figure 25.    The character remains recognizable even when it doesn't have any details on it.
  [16]

Using exaggeration and unrealistic proportions is a common method in design when an artist wants to attain a specific look. Big eyes, large head and round limbs are few of the ways one can create a look that conveys the appearance of an infant or a childlike figure, as seen in figure 26. [17, 18]

Figure 26.    Illustration depicting some of the main focuses at Disney when creating a character that would be considered cute. [18]

While round shapes make a character look soft and cute, square, triangular and sharp shapes in general and be used to make the character look heroic or villainous, as seen in figure 27. Square elements are often associated with balance and stability. While on the other hand characters with plenty of triangular shapes or sharp edges in general can look active, fast or dangerous. The round, sharp and square elements can be, and usually are, mixed together and are not often used in their basic forms in design. [19]

In figure 27 is the author's interpretation on what makes an evil/ intentionally unappealing looking character (antagonistic characters). It is important to exaggerate and add sharp

edges to the design when creating evil looking characters. However, as much as an incredibly skinny character can look evil and unappealing, a character whose obesity is exaggerated can look intimidating and evil all the same. Much like with cute characters, it is a common method to exaggerate specific features to create an unappealing character. By using a specific combination of colors the design can be made more impactful and even small changes to a design can make it look evil instead of good, like small red stains on a pure white dress can imply something sinister. However, the characters in this figure follow a pattern of having a lot of triangular and sharp shapes in them as this is a common method of portraying an evil character. Usually a character looks evil not because of a single detail, but due to a collection of design choices.



Figure 27.    Examples of characters that could be considered unappealing or evil.

Using different proportions than what is usually expected can also help to convey the feeling that the artist wants to convey. While cute characters have large heads and big eyes, such as in figure 26, strong characters usually have a smaller head and lower limbs while having bigger upper limbs and torso. This change of body proportions can be used to guide the viewers' attention to different parts of the design. In figure 23 the author made the character's head bigger in proportion to the rest of the body to guide the viewers' attention there so the viewer will notice the most interesting aspects of the design which are located around the head. This character was also meant to be childlike in its design, so using this sort of body proportion distortion also made sense from that viewpoint in this case.



Figure 28.      Examples of how different character types were designed to convey their personality in the Disney feature film "Aladdin". The same principles that are used in animated movies apply to character design in all medias, such as video games. However, as the project involved using a more realistic art style, the characters would not be as exaggerated in an animated movie. [20]

When creating silhouettes for a character one should take into consideration what the silhouette is supposed to convey to the player. If we look at the character in the figure 25, it has very round characteristics, there are barely any sharp edges in its silhouette which gives the impression that it is friendly and childlike, indeed circles and ovals are a major theme in this character's design [21].

We can also notice from the silhouette of this character that it is very simple and easy to read. Good character designs often have simple outlines. This makes them stand out more easily from the background as well as make them easier to see and distinguish from the background that they are set in. However, as the style of the game project was aimed to be more realistic the silhouettes can rarely be as simplistic as the one illustrated in figure 25. In figure 29 are silhouettes of one of the characters in the game project. Despite the silhouette being more complex, the most defining features of the character are visible in its silhouette.
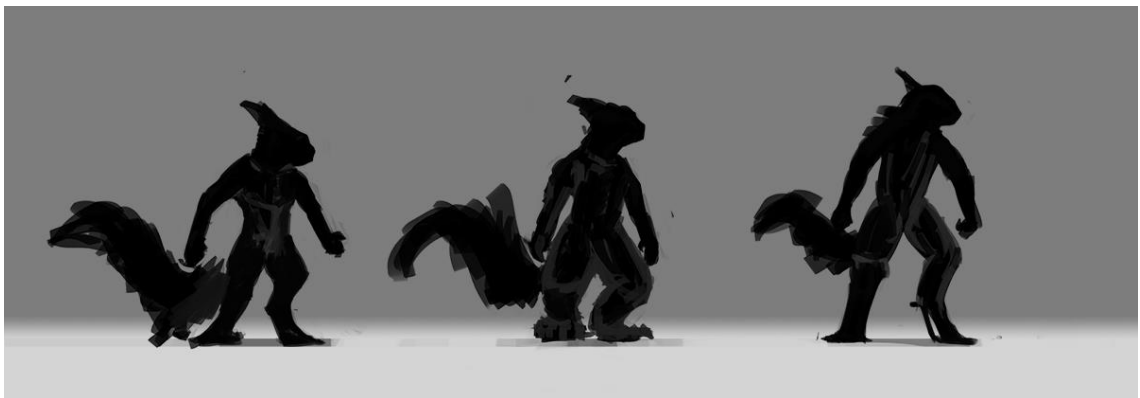


Figure 29.    A sample of silhouette concepts for a character in the game, the basis for this character was that it is a small squirrel humanoid which can move fast.

The author would like to note that when creating silhouettes one can be more free to explore different alternatives. Spending too much time thinking about the shape of the silhouettes may not be the best way to create silhouettes and instead one should draw whatever could fit into the design idea. Quantity over quality is often the case in the earlier stages of concept art. However, it is often the artist's duty to decide which of the silhouettes they decide to show to the client as to not to overwhelm them with the abundance of choices. However, sometimes the artist may be given a clear idea to work off, such was the case for the character shown in figure 30 which explains the very similar silhouettes. Even though the silhouettes are mostly similar, thanks to the small differences in each of them the different silhouettes manage to create different impressions in the viewer.

Figure 30.    A sample of concept silhouettes for a character based around flight and air. The design being based on the looks of a barn owl.

Sketching is another popular rough visualization method. There are no guidelines to sketching and many artists have varying definitions on what is sketching and what is not. In figure 31 are several sketches that were made to represent various possible creatures in the project. With this sketching method, the artist used a regular brush tool in photoshop to sketch out the primary forms of each creature and afterwards blocked them in with gray paint. To give the sketches a bit more texture, one can also use custom made brushes to quickly apply different textures to them. How this varies from grayscale painting is that instead of using various values of black and white, here the author merely used a very small range of values to give the sketches more presence on the image and to differentiate them from each other, as well as give them slight hints of depth in their silhouettes. Sketches can also be a term that is used to refer to silhouettes and thumbnails as majority of illustrations that are loose in nature can be included in this category.

Figure 31.        Sketches of various creatures. Majority of the creatures displayed here incorporate two or more aspects from different real creatures. The time spent on each of these creatures was no more than 5 minutes each. Anatomical correctness is not something one should worry at this stage in development as that can be easily fixed if the design goes to the next level.

The technique used in figure 32 is a more traditional type of sketching, with a small number of highlights implemented to emphasize different aspects of the books. Here the sketching method was used as the silhouettes of these books are not as visually interesting as the smaller details that are inside the silhouettes. The artist must always decide what is most interesting or important in a design to be able to choose the best visualization method for the task at hand.
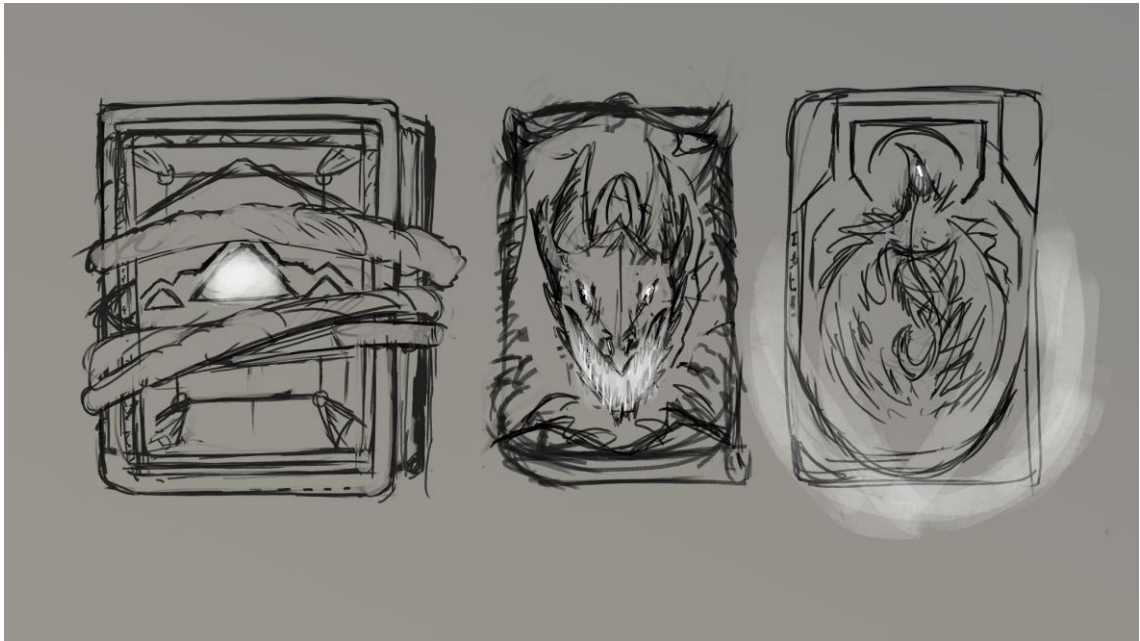
Figure 32.    Sketches of 3 different magical books. Despite their rough appearance these sketches still convey their general idea to the viewer.

## 4.3    Refining the thumbnails

Once the rough concept, whether it be a silhouette, thumbnail or a sketch, has been accepted by the project- or art manager, the artist may continue to refine the concept. Oftentimes concepts receive changes from the project manager and there may be comments and notes involved that the artist must consider when working with the concept further. Usually the comments involve changes the manager wishes to be made to the concept, such as removing some aspect of it or adding something to it. Sometimes however, a concept may be fully rejected and the artist may have to begin again from scratch if none of the concepts they presented were accepted by the manager. This is one of the main reasons why the artist must not invest lots of time on the initial sketches, if they are rejected, the time invested will be mostly wasted. However, even by producing concepts that are declined the artist may get a better idea what the manager wants.

When starting to refine the initial concepts, color is usually introduced to them which brings a new set of choices for the artist. With different colors items and characters can look drastically different and using the wrong colors can cause the concept to convey

unwanted information to the viewer. Figure 33 shows the original illustration for a land-scape concept and figure 34 is illustrated the modified version. With a simple change in the hue of the scene, the feeling that the image conveys has changed. By shifting the colors to the warmer side of the color spectrum, the scene now looks more natural. However, as the intention in the concept illustration was to showcase a magical forest, using these warmer colors would not have been as effective as using a colder color scheme.
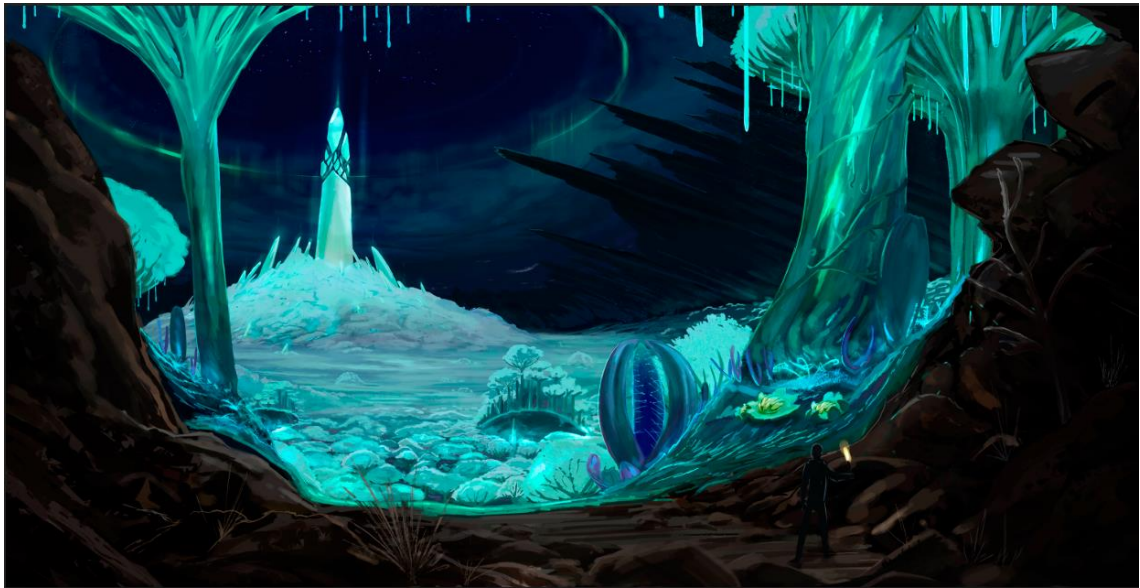


Figure 33.     Original illustration. A colder color palette was chosen for the forest to convey its magical and to contrast with the warm brown of the rock and dirt outside the perimeter of the crater.
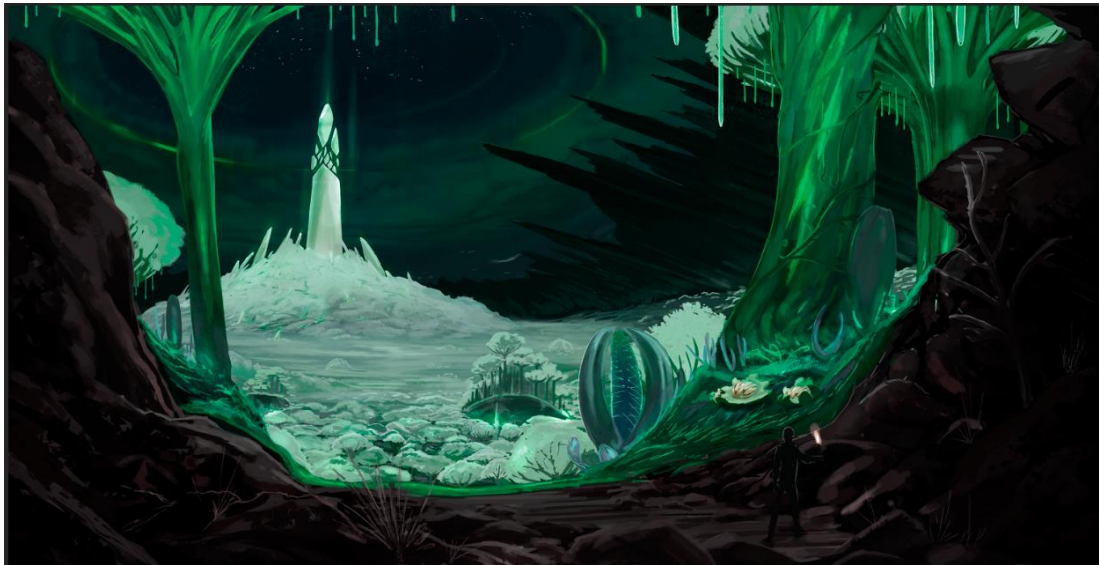
Figure 34.    Modified illustration. By shifting the tones of the illustration to a warmer side the scene has a more natural, earthly look to it. The change from the brown rocks and dirt now doesn't seem as unnatural and the entire illustration has a completely different feel to it.

It is important to be conscious about what different colors convey to people to avoid creating designs that have colors that clash with their personality or purpose. All concepts usually have a purpose which is predefined, whether it be to illustrate a specific type of creature, landscape or scene. This purpose can be undermined by unfitting or nonsensical usage of colors. Comparing figure 35 to figure 36, we can see that the character in figure 36 looks much less appealing when compared to the same character in figure 35 despite them being the same. Only the color of his clothes and eyes has been changed. The reason for this is that the colors that are used in figure 36 look very unfamiliar and unnatural, giving the character a very otherworldly and alien look. This is because this combination of colors is rarely seen in nature causing this color combination to look very artificial.

Figure 35.    The original character design. The color scheme looks natural and logical with pleasant saturated colors. [16]

Another factor that also causes this alien look is that the colors that are used here are colors that we do not associate with the objects they are used on, such as the turquoise shoes. If the overalls, shoes and the hat were redesigned to suit these colors better the character could look reasonable even with this color scheme. Also, when red is used on the iris of the eyes it conveys an evil and aggressive look, as this is a common trope that is used on characters that are made to look evil. On contrast, blue eyes are often used for characters that are created to be good. [24]

Figure 36.     Altered character color scheme. The strange colors make the character look un-
natural. Shoes, hats and clothes are rarely seen with these hues and saturation making this
design look very strange. [16]

Displayed in figure 37 is a character that was made for project wizards. The colors used
for this character are analogous. Analogous- and monochromatic color schemes are both
useful in creating characters that look realistic as analogous color schemes use only
colors from the color wheel that are next to each other, creating a natural and realistic
look. Many of the color schemes that were used in creating the concept art in project
wizards are analogous as the color schemes that are used are guided by the feel that
the project wants to convey and the feel of this project is set to be somewhat realistic. In
figure 35 the color scheme used is the triadic type which works well with characters that
require more coloration to distinguish each part of the design from each other. The triadic
color scheme also works for that character as the character itself is made to be as child
friendly and approachable as possible. With this color scheme one can create more ap-
pealing cartoony characters as one has more colors at their disposal allowing the artist
to create more eye-catching color schemes.

Figure 37.     Final character design for an ice type wizard in the game. This character represents a character that specializes in manipulating and making their enemies weaker, therefore a somewhat regal appearance was chosen for this character. Very narrow color ranges were used in each of the designs of the main wizard characters in the game to allow them to be distinguishable from each other both in terms of silhouettes and in coloration.

Nevertheless, one can use colors that are outside the common color schemes such as in figure 38 where the color scheme of blue and red-purple does not correspond to any common color schemes. Using colors this way can create results that catch the eye of the viewer by creating a combination of colors that is not normally used. This can work in favor of the artist if they know when and how to use it. Also, the colors scheme in figure 36 does not correspond to any ordinary color schemes, but the unique color scheme does not work there as well as it does in figure 38 because the colors clash with the other parts of the character design, leaving the viewer confused and wondering what the purpose of this character is, if they are evil or good, from this planet or from somewhere else and so on. The colors used must, therefore, follow the basic concepts that define the character such as, where they live, where are they from, how old are they and whether they are good or evil.

Figure 38.     Final character concept for a water based wizard. This character can manipulate water and its design is based on water dwelling creatures that can be found in nature. This character differs from the others in the fact that they are comparatively younger from the other characters and this was conveyed with the comparatively large head and eyes as well as making the hands and feet small and slightly chubby.

Color can be one of the main driving factors that define a character and the decision of what colors to use should be considered in depth such as any other aspect of the concept design process. As mentioned earlier, colors, silhouettes and details work together to create an image and by using these together, the artist can intentionally distill different feelings in the viewer.

One should consider the location the character or the object will reside in as well. Coloration as well as external features on the object contribute to the feel it creates to the viewer. This feel should mesh well with the area it coincides in otherwise it may create an unwanted disassociation between the character and the environment. Sometimes however such disassociations may be used to create a desired effect in the viewer. This disassociation can be caused or achieved by using colors or shapes that clash with the background. This can be used to make something look out of place and alone in an area or to make the design look imposing and threatening. For example, placing a very sharp and triangular character into a soft and round environment, or by placing a round character into an environment filled sharp objects and dark tones. This effect will amplify the present shapes creating an even more powerful imagery. This effect is often used in

video games in certain areas to evoke a feeling of danger or safety to the player. Effective use of this phenomenon usually consists of starting the game with areas that look friendly and round and gradually making the levels have sharper objects in them as well as darker tones. This also creates a seamless visual progression within the game and makes the player feel like they are approaching something dangerous.

## 4.4    The final concepts

After a concept has gone through all of the stages of refinement and feedback loops, it is ready to be finalized. What counts as the finalized version depends on the needs of the project manager. Sometimes the final concept may be a very primitive sketch and sometimes it may be bordering an illustration regards to how refined it is. Oftentimes the concepts that are more refined will be used as promotional material for the game. These tend to be either landscape or character concepts, but they can also be other things as well which represent the game. Concept art, however, is something that lives and evolves alongside with the project and may change during time. Some concepts may be abandoned as the project develops and new ones will almost certainly be thought of to explore the world further if not just to replace the old ones.

Once the concept art is done, in some cases, it is important to know if the concept art will be used as promotional art as this may impact the level of polish the artist may want to give to the piece of concept art. Often this is stated beforehand so the artist will know to make the concept both easily approachable by someone not familiar with the game as well as visually polished. Most commonly, however, the artist will create the concept first and later on create the illustration of it.

As seen in figure 39, concept art does not necessarily need to be visually refined as by definition concept art only has to convey an idea in a visual form.
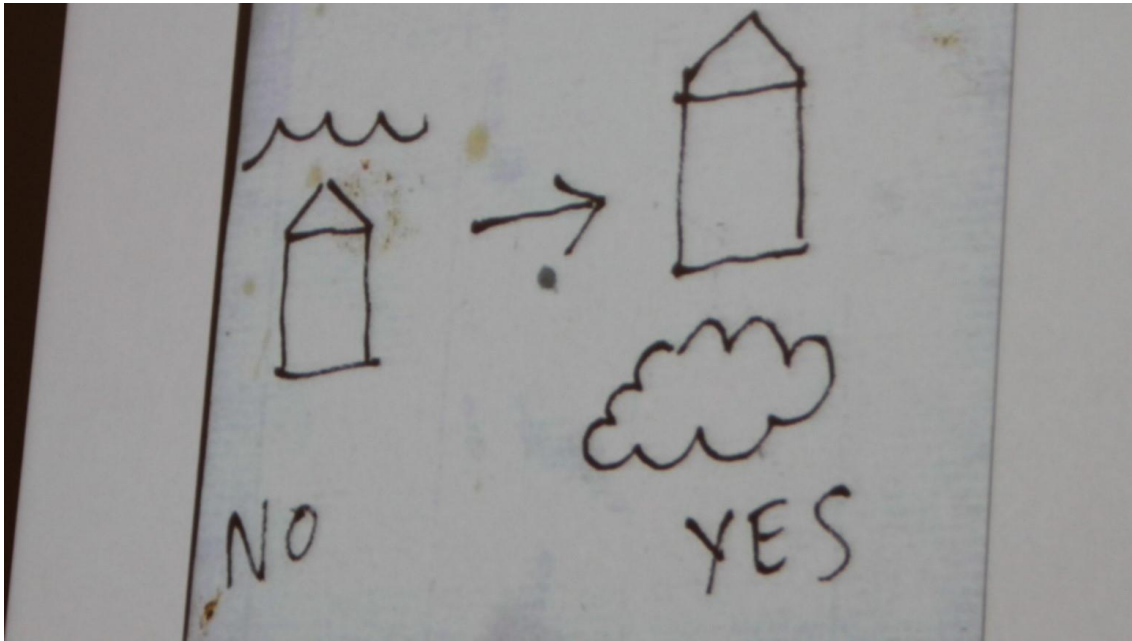
Figure 39.    A humorous illustration of a piece of concept art found in the game "bioshock: infinite". Concept art does not need to be highly refined, it is considered concept art if it visualizes an idea. This piece of concept art showcases the idea of moving a city from underwater above the clouds, as the previous instalments featured cities underwater. [24]

Figure 40 shows the finalized magical book designs. The purpose of these books is to allow the player to choose different specializations for their character. The most important aspect for these books was for them to be unmistakably distinguishable from each other and represent the mythical creatures they are based on as well as represent which attributes and changes they may give to the player character. The first iterations for these books can be seen in figure 32. A lot of the time concepts may change from their initial look, which is what happened to the leftmost book here. Therefore, it is important to be able to show the project manager what sort of direction one is forward and do so in a fast and agile manner. This allows the project manager to step in before one can go too far with the concept before it is rejected.
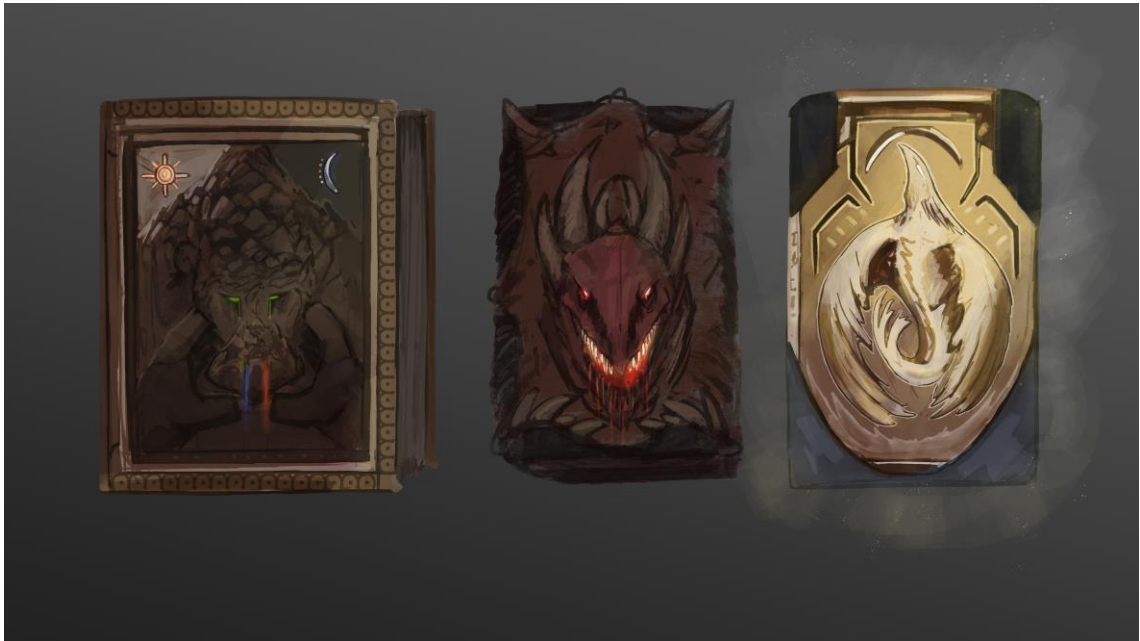
Figure 40.    Finalized magical book designs. These concepts are quite rendered and give the viewer a good sense of what material they are made of.

Figure 41 depicts the finalized treasure chest concepts. For these concepts, it was important to convey the quality of each chest. The author decided to use recognizable bronze, silver and gold tiers for the chests. This categorization is immediately recognizable and the viewer can decide which of the chests is the most valuable at a first glance. However, as some magical elements were also required, the author implemented magical glyphs and veins of magical energy into their designs. It is important to note that concept art is occasionally not drawn to scale, much like in this case. The gold chest most likely would be much bigger than the silver chest and the silver chest would be bigger than the bronze chest. With objects like these it is not always important to show the scale they are in as that can be decided upon later in development. The sketches for these chests can be seen in figure 17.

Figure 41.     Rendered treasure chest concepts. Despite these designs being quite fantastical they are based on real chest designs; however, they have been changed to fit the aesthetic of the game world.

Figure 42 shows concepts for 3 different creatures with additional color variations for each. The sketches for these can be seen in figure 31. The creation of these creatures often started with very fast and rough sketches, usually taking no more than 5 minutes each. Thiis allows the artist to convey a lot of different ideas as well as to gradually improve upon and to combine the other ideas they have drawn. Much like in figure 41 these were not drawn in their proper scale as the right most creature would be too tiny to illustrate if it was drawn in its actual size here.
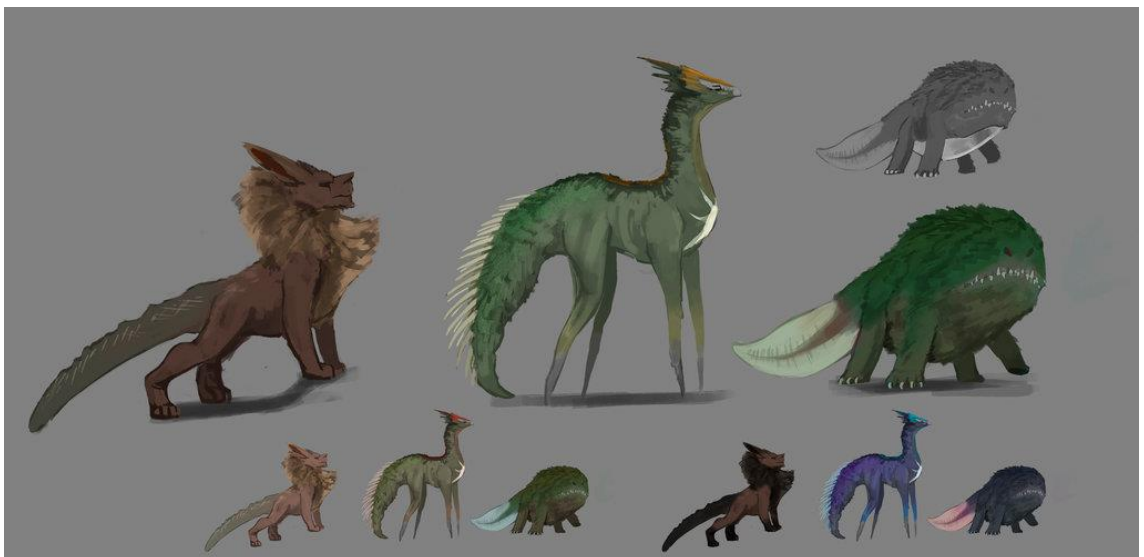


Figure 42.     Even though these creatures are a small part of the game project, they still represent different areas of the game world and the various aesthetics that exist there.

Alongside this thesis the author was tasked to create concepts of a variety of things which are listed in chapter 5. This thesis was limited to the concepts the author was asked to create and the concepts that were made for this thesis do not cover all the concepts needed for the project. The concepts were made with an "as needed" basis and the concepts created alongside this thesis only showcase very early concept art for the project.

## 5   Analysis of the concept art created for project wizards

The cooperation between waterlight games and the author continues as the game is still in very early stages of development. As the ultimate look and idea of the game continues to develop and become more clear, more concept art is needed for various parts of the game. This is understandable, however, as concept artists are often employed or commissioned during the early stages of the project. Many of the concepts that have been created for the game so far have been separated from each other and there is a lack of connection between them. This aforementioned problem will most likely be fixed as the pieces from which the world is formed from and how they fit together becomes more clear.

 The process of this type of world building will be time consuming as it will require connecting several disconnected pieces together in a logical manner. It remains to be seen however, how complicated this will be. Not all games require a comprehensive world building document to back them up. Some games which focus more on the action rather than the lore and storytelling aspects may do just fine with a minimal explanation to why and how things happen behind the scenes.  However, as the games genre is planned to be an arena action/RPG game, it will most likely need at least some sense of a functioning world in it as world building is a relevant part of any RPG game. However, as its sub-genre is planned to be an arena type brawler, this could mean that the story elements may not be as relevant as in traditional RPGs. Despite this, time put into world building is rarely put to waste, as it will help in finding a more focused direction for the game. It also helps the concept artists that must create new items, characters and environments that are set in this world. Although there are already pre-existing designs and design

documents about the environments, items and characters will make the creation of derivative concepts and concepts that fit into these places much easier as the concept artists do not need to start from a scratch each time.

As the result of this thesis the author has created the concepts for the following assets in the game:

- 6 main character concepts.

- Several creature concepts and 3 finished creature concepts.

- Several wand designs and 9 finished designs.

- 18 magical books, 3 for each main character of varying power levels.

- 3 books known as "god books" in the game which are the most powerful magical spell books.

- 3 chests that the player will find loot in.

- Several landscape concepts of which 2 were chosen to be made into polished environment illustrations.

All the art for these concepts cannot be shown in this thesis, however, due to their confidentiality.

The author noticed that the most challenging part of each concept was the first stages. This makes sense as this is often the case with art. Getting the first visual details is the most challenging. However, after the initial concept is done it tends to start to live a life of its own, so to speak. What the author means by this is that once the concept reaches a certain point it begins to create new ideas. These ideas could be details on the concept itself or other concepts that could be associated with this concept.

Although the concepts created for project wizards were polished and refined, there are certain aspects that could be implemented to make the concepts even more serviceable as concept art. One aspect that could have been added to the is material thumbnails, as shown in figure 43. By including thumbnails for the materials and textures one can give a better idea what things are supposed to look like when, for an example, custom 3D shaders are applied or when another artist does a more rendered illustration of the concept. Often concept artists must work fast which means there is not always time to render

the concepts in such high detail that the textures and materials would become apparent. However, one can use textured brushes to quickly apply texture to a concept and make it more believable.



Figure 43.    Example of material/texture thumbnails. Because concept art usually is done quickly there is often not enough time to properly render materials/texture, by including thumbnails of the materials one can give a better idea what things are supposed to look like.

In the project the author was tasked to create refined concepts that would be used in marketing the game so many the concepts that were created for the game had more time and effort put into them, to make them both visually appealing. Also, they needed to present something new visually. For the creation of these concepts the author adopted a three-step workflow which would allow enough revisions to the project manager and in return feedback to the author. Usually concept artists work locally inside a company to make the feedback cycles faster and more frequent. When working through the internet

it is difficult to arrange frequent feedback cycles and having too many of them will spend time that could otherwise be used doing other more productive things. When being physically in the same room, commenting is faster and more fluent than through email or IM.

During the creation of the concepts for Waterlight Games, there was plenty of time to conceive the desired concepts. As the author worked with Waterlight Games via the internet due to the distance this extra time was welcomed due to the increased amount of time between each feedback loop. However, if the author had worked inside a professional environment where harsher deadlines exist the author would have had to worked much faster, although while creating the concepts the author also had to fit the university work into their schedule.

Indeed, the distance and differences in time zone and schedules made receiving feedback and sending work to be reviewed sometimes a slow process, a fact that is difficult to remedy due to the constraints placed in this situation. A possible solution to this would be to use an IM system rather than using email as people are often compelled to response faster to IM messages than to email. [15]

A problem that is present in all projects that require an artistic input is knowing the level of refinement and polish that is needed. As all artists work differently and create different looking pieces of art, it is often difficult to know what level of detail is good enough for a specific piece of concept art. As stated before, concept art can indeed be just a couple of lines on a paper. More refined and rendered pieces of art also take more time from the artist, time which could be used to come up with new concepts or create variations for the pre-existing ones. The fundamental problem with art is that it is never finished but at some point, the artist must decide that the artwork is good enough and that the diminishing returns that come from the additional polish are so small that it is not worth the time invested. Indeed, the rendering part of an illustration or concept is what takes a large portion of the time invested in it, even though the additional rendering may not necessarily improve the impact that the illustration or concept has on the viewer. However, generally speaking, more polished works are most often the best ones when marketing the project to consumers as they are the most visually appealing.

With this problem in mind, the author believes the best course of action is just to ask the project manager and keep sending them more and more refined versions of the concept

until the quality is satisfactory. However, this would leave the artist open for exploitation as they could easily be coaxed into putting extra time and effort into the artwork. It would be appropriate to state here that the author did not encounter any deceitful tactics employed upon them while working for Waterlight Games. This is not a problem if the artist is paid by the hour, but becomes problematic if the artwork is a fixed price commission. A fixed price for a commission is easiest for the project manager as they can then easily fit the cost of the artwork into their budget. Another way to solve this problem is to pay the artist by the hour. This method may not be as beneficial for the project manager, since if the artist struggles with a specific concept, it can be expensive without being able to produce anything worthwhile. Also, this makes it more difficult to fit the art into their budget while getting polished and finished art.

The author, therefore, suggests a hybrid of these two previously mentioned methods. In this method, the artist is given or the artist decides how many hours they will need to finish the concept art or illustration. This way the project manager will know beforehand how much it will cost and the artist has a fixed point in time when the artwork must be done. If the project manager finds the art unsatisfactory after the allotted time they could then pay the artist hourly to refine it further. This method is not flawless either, as in this method the artist could intentionally work slowly. However, the author believes these kinds of artists would be quickly released of service by the project manager. This method is not perfect, but the author believes that this method can be beneficial in most situations to both parties involved.

## 6    Results on usage of time

The author found out during the creation of this thesis that creation of concept art becomes faster the more one works with a single client (figure 44). This is due to the fact that as one works with a specific client for long enough one begins to learn what is expected and what the client truly wants. This is learned through interaction with the client through numerous feedback loops.

Figure 44 depicts how the time required to create each concept gradually becomes lower the longer the author had worked with the client. The decrease in time can also be partially attributed to the author's skills getting better. However, the time required to create

a concept does not decrease in a linear fashion, but instead at some point it stops decreasing, or the amount it decreases over time is so small it is negligible.
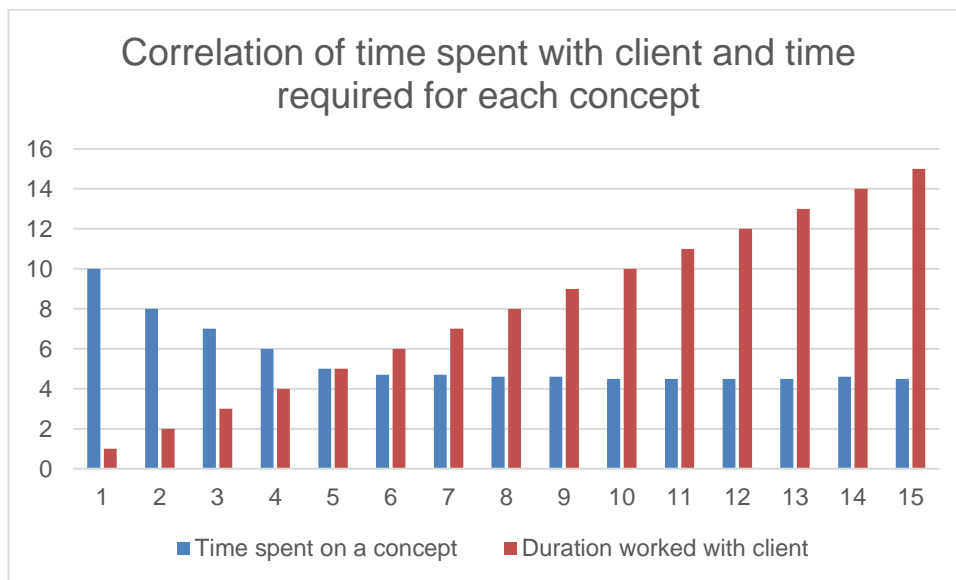


Figure 44.       As the author created more concepts for the client the time required to create concept art of a concept became faster, partly due to deeper understanding of the client's needs.

The decrease in time to create each piece of concept art is logical, as the author had not worked on similar types of concept art before and when starting to work with Waterlight Games had to adapt a new workflow.

Due to the nature of commissioned artwork the author had to wait occasionally for feedback as communication was arranged through online services. To avoid any downtime that the artist may face while waiting, the author suggests that the artist works on more than one concept at a time. This way the artist may work even while waiting for a response from the client.

The concept art that the author created for waterlight games will be used in the further development of their game titled "project wizards". In the development of their game, the concept art will function as a foundation for the 3D modellers and level designers to work from, as well as to act as the basis for the world inside the game.

The total time the author has used on this project so far is ~100 hours. The most time-consuming aspects of the project were the character designs and landscapes (figure 45).

The main character and landscape concepts were the most time-consuming aspects of the project from designing point of view. These two often dictate the objects and creatures around them and act as sort of "anchors" to the rest of the project. However, creatures and objects can work as "anchors" or base building blocks as well if they are iconic enough. Also, the main characters are such an integral part of any game that when designing them, one should be more careful than usual. With landscapes one must usually design plants, vegetation or other things from a scratch to populate the landscape with. This is why the landscapes took more time to create than the main character designs.
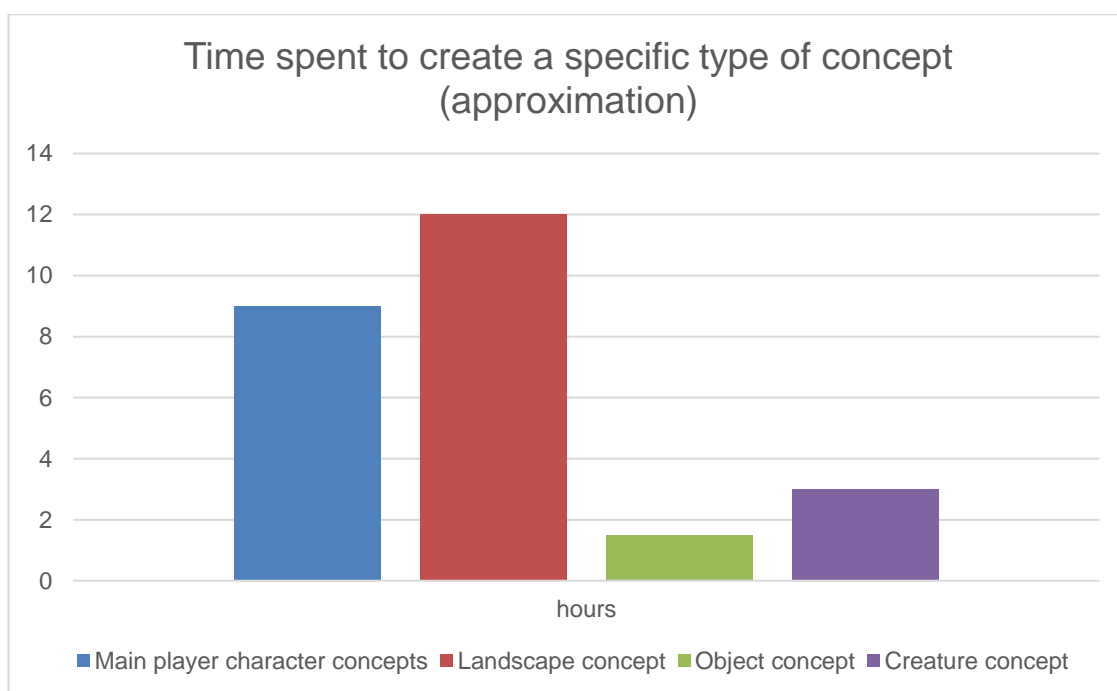


Figure 45.     The time spent on each concept closely correspond to their importance to the game project. Smaller objects and creatures are rarely as important as whole landscapes or main characters.

# 7 Conclusion

The purpose of this study was to conduct and create concept art for Waterlight Games for their game "Project wizards". The project was coordinated by the project manager. The creation of the concept art was spread across several months of work. Because the working format was in the form of commissions, the workload came in bursts throughout the year as concept art was needed to illustrate different aspects of the game. The creation of concept art for Waterlight Games continues.

The author has had previous experience in illustration, however, concept art was a new field of study. During the creation of the thesis the author learned several different workflows on how to best deal with the development cycle of concept art. Initially this proved difficult as this cycle was vastly different from that of illustration as, in concept art these cycles are meant to happen faster and more often.  Due to this the author had to learn ways to speed up the conception of these concepts, which eventually evolved into 3 different methods, silhouettes, thumbnails and sketches. This learning process is still ongoing as the author strives to find new and different techniques to make this process faster and easier.

As the result of this thesis Waterlight Games now has a solid foundation for their upcoming game to build their art assets upon. As the game project grows, more concept art is required to illustrate the new assets in the game. Once the game is developed enough and has a functioning prototype, it is estimated to be placed in crowd sourcing sites such as Kickstarter.com to raise awareness and gather funds for further development. It is also expected that some of the concept art that the author created for this thesis, will be used as promotional artwork displayed with the project on its page in Kickstarter.com and other similar sites.

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