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CREATING A CHILDREN'S GAMIFIED PICTURE BOOK

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Abstract <p>This thesis was based on the game The Little Cat and The Rainbow Egg which is an interactive gamified storybook for children from the ages of 5 to 10. The game was published on Google Play and can be played with a tablet or a phone.</p> <p>The purpose of this thesis project was to work as a showcase of the idea of creating a well-functioning picture book for children with gamified elements that enhance the immersion of storytelling. The goal was to make a professional and functional product with emphasis on the visual style.</p> <p>The game was produced by three people, programming and music were done by outside partners, the author was working as a lead designer and artist.</p> <p>The design and idea of the product is based on theoretical backgrounds that are presented in the first part of the thesis.</p> <p>This thesis report answers to the questions how to gamify a storybook and how to illustrate and add interactive elements to a story so that it works as a children's medium. The thesis report focuses on the process of making the project from the design standpoint and the main topics include interactive illustration, visual directing, children's illustration, and publishing of the product.</p> <p>Other notable things the report talks about are storyboarding, art, stylizing of illustrations and technical development such as programming, animation and music.</p> <p>The result of the project was a complete game. The report also discusses the results of beta-testing with a test group, and thoughts on how the product could be improved further.</p>		
Keywords Game design, animation, interactivity, storybook, children's illustration		

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1 INTRODUCTION

This thesis report is based on an android game *The Little Cat and The Rainbow Egg* (2018) that was published on Google Play. The product uses gamified and interactive elements as a storytelling method along with text to create deeper immersion between the player and the story. The game's target group are children from ages of 5 to 10.

The report discusses the process of making this game from the of creation of children's illustration to creating a visual style and directing, producing and publication of the product. The focus will mostly be in the design part of the project, but the report also includes general information about the technical aspects such as coding.

This report should give a wide understanding of what needs to be acknowledged when starting to design a visual novel styled game for children; also, how the product can be executed and published. A part of this thesis will focus on methods of development the art style in games and how the designer can improve their quality of graphics when it comes to game design.

The overall making of the project took around 4 to 5 months, but the base design and storyboarding were already started in Fall 2017.

During the project the author worked with two partners, Antti Kytö who helped me with most of the programming and technical difficulties, and Toni Arvilommi who composed the longer music tracks for the game.

Apart from only being a product for children, the game should also work as a separate work of art that can be enjoyed by members not part of the target group.

1.1 About the mechanics and goals of the project

The purpose of the game is to be a showcase of an idea that a picture book can be gamified and brought to a different level of media, somewhere between interactive story and actual game. The player can view the game similar to book, but they must proceed forward by finding the correct place to click on the screen. The player can get the clues of what to click by reading the story and following the highlighted word. The game is recommended to be played with tablet or a big screened phone.

There is a sense of achievement in completing the game, but the main functionality of the game is to be a visual and interactive story that works like a storybook that the player can have influence on.

The products main goal is to be enjoyable media for a child and a story that the parent and child may read together. The target audience of the game is initially school-aged children and anyone who finds stylized and visual illustrations pleasing.

This thesis can be used by anyone who is interested in visual novel styled games, storybook illustration and gamifying and designing products for children such as students, graphic designers and people working in game design fields.

2 IDEA AND INSPIRATION

An idea for an art-oriented, interactive picture book came to me in Summer 2017. For a long time, I have been wanting to make a children's book that combines a lot of textures and elements that were carefully chosen to create a specific mixed-media art style.

At first the game was to have 3D playable scenes as well, but the amount of work would simply have taken too long to complete in under a year. The game was created without any 3D art but still made to be playable through interactive scenes.

2.1 Finnish storytelling and values as a base of the story

There needs to be something that works underlining the story of the game, it's world and characters. The idea had to be based on a thing that has a meaning and could be exploited further to fit all the parts in the design. Because in past year I have found myself reading a lot of Finnish mythical legends and writings I used it as a theme that I could start designing on. I adore Finnish colour schemes and how they directly reflect the nature and man-made environment that develops with time around us. Contrast of green lush grass and red brick or painted wooden buildings, bright yellow and lime green growths and uncontrollable wild vegetation of the Finnish national landscape worked as a starting point for my inspiration for the game's visual style.

The author believes that the Finnish mindscape was a good fit to for the project also in script-wise. A Finnish story is often serious, but is able to amuse the viewer, and does not turn its back on difficult topics. Stories and myths have been told for centuries in the northern Europe, and some of these epics have become an important part of the Finnish cultural heritage. A variety of mystic and dangerous beings keeping up the balance of the nature are a traditional theme in Finnish storytelling. (Jylhä-Ollila 2010) (Marttinen 2014)

During the war in 1930's Finland, children started to be viewed as readers more equal to adults than before. In 40's and 50's there was a shift towards the young adult culture that largely affected illustrated books. In addition to the birth of young adult fiction, children's literature was able to develop contextually, linguistically and aesthetically and become higher in quality due to the rise of appreciation and interest.

Where the magic of the stories has remained centuries, the heroes of the Finnish storybooks however have followed the mankind's change in habitat and lifestyle all the way to urbanization and from there to be a part of a global world. At present, the ecological and environmental themes as well as stories focusing on emotional intelligence have become popular in the children's literature. (Uglow 2009) (Saarenmaa 2015) (Jylhä-Ollila 2010) It is only natural that now the stories shift from the traditional book form to digital media; getting even more layers like interactivity and gamified parts.

Environmental thoughts work as a kind of side-theme in my script writing; preserving nature and showing more modest and content lifestyle is a major part of my character and environment design.

2.2 Emotional awareness in children's literature

Children's stories that discuss and gain energy from emotion and feeling have gotten a lot of visibility in this and last decade. They teach and help to practise emotional intelligence and aid a child to understand others around them. Some examples of these books are Ninka Reittu's *Sinä olet superrakas* and Maurice Sendak's *Where the Wild Things Are*. A story can be a well-working tool in opening a dialog between a parent and a child. (Uglow 2009) (Jylhä-Ollila 2010)

The game should not underestimate the child by the narrative standpoint. I also did not want the interactivity to completely fade away the imaginative process of a storybook, more like enhance it. I tried to implement a dialog that would encourage the player to examine their own feeling and emotions.

In Tove Jansson's *Moomin* books, the thematic tension is created on the change of danger and safety. The danger can come from inside or outside and can be symbolic. The dangers are often linked to natural disasters in some form. (Numminen 2013) I wanted to create the story in a similar way, to have periods of joy, sadness, danger and relief, and to have a sense of the story proceeding forward all the time.

2.3 Rewarding the curiosity

Reward system in any game is an essential part of playing. It is designed to keep the player entertained for long periods of time, and can be working through changing dialogue, new visual imagery, going up ranks, acquisition of currency or even emotional fulfilment in the story. (Designing Rewards in Games 2005) (pluralsight.com 2015)

I wanted the game to work in a way that it would intrigue the player to think about their surrounding environment, which might in the best scenario carry on applying in real life. In the game the curious behaviour is rewarded with small bits of new information or finding hidden creatures, that are not connected to the story. These things can later be viewed in the end similar to “stats” window or score list, making the game worth playing more than once.

2.4 Risks during the game creation

Because there is no commissioner, in my case the biggest ethical risks were related to the target groups experiences of the game. It was important to focus on the age of the player and the meaning of the story; the content should be entertaining, cheerful, somewhat wistful and little bit of educational. A major aspect of the development was to pay attention to the correct word choices and how the phrases can be understood. (Tuotteistaminen 2017)

Even if I started the project quite early on, the risks of not meeting the deadline were higher because of me working beside school. I did a lot of work with time management, I paid extra attention to the use of my free time and planned my days weeks ahead so that I could get most of the project done.

There was a risk that we would have a large and immediate project in my workplace where I would have needed to be present in studio, but fortunately I was able to cut my work time and focus more on school.

2.5 Platform and tools

The job of the game designer is to decide how the vision of the product will eventually be implemented by choosing a correct platform. The designer must be aware and study different platforms in order to know how they will work. (Lecky-Thompson 2008)

The game was originally designed for tablet, but it is readable on a phone screen unless it is a very small phone. Tablet as format was a first choice because it imitates a book, and many children have a tablet of their own as

their main media outlet. These aspects make the tablet and phone superior platform for this game.

Although it is possible to run the game in a small screened phone, the texts may not be readable, and proceeding in the game is hard because of the clickable areas are small.

3 FROM ABSTRACT IDEAS TO CONCEPT CREATION

When the general idea of the game was created, I started the first part of designing the project by collecting material that could be used to create the concept of the product. At this stage it is good to have all the useful references in the same place. For couple of months a lot of material for the game was collected from the internet, such as drawings, artworks, phrases, fonts and everything that seemed to have a connection with my visual idea. I also used photos that I had taken of things that interested me.

The mood board (Figure 1) is a great way to quickly visualize and present the idea to the audience. The images do not have to be perfect representation of the idea, they can only have one element that represents something that is usable in the work. The images on the mood board should show the overall feel of what the product wants to tell the viewer, and it should be easily understandable by the other members of the team as well. (Engländer 2014)



Figure 1. An example of a mood board visualizing the overall feeling of the game (Tommila 2018)

For this project, I took a lot of inspiration from one of my favourite children's illustrator Zdeněk Miler. His probably most famous character The Mole and the old TV-show based on it have a textured, paper-cut feel to them with a lot of beautiful details. I wanted to make a set of illustrations that look like a mixed media artwork and bring them further alive so that they would work like a playable book or cartoon.

Because the events of the story would take place in the environment similar to Finnish countryside, I wanted to have elements imitating its nature. The method I came up with was to use dried and scanned leaves (Figure 2) to create variety to my digital brushes, which would help me to create an organic texture to the illustrations.

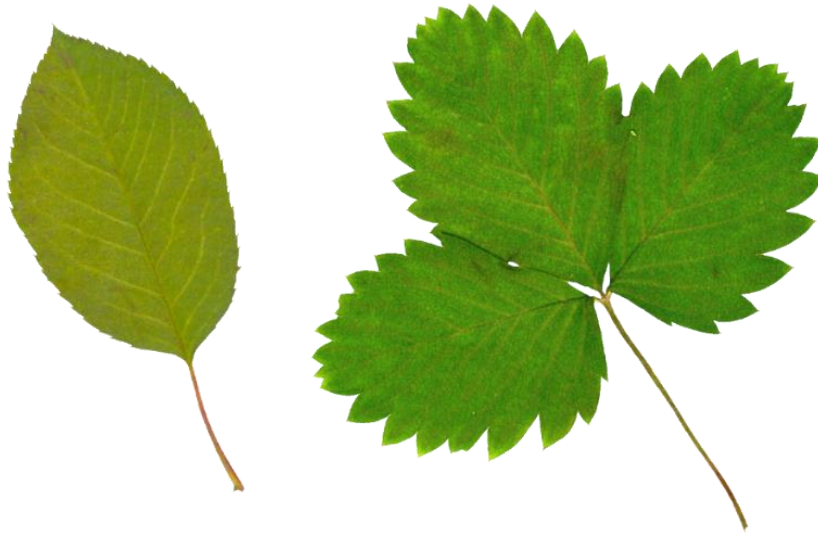


Figure 2. Scanned leaves later used as a brush in Photoshop (Tommila 2018)

3.1 Designing characters and environment concepts

The story always tells something about the reader and the world around them. Therefore, it is necessary to create characters, that can be identified with. (Jylhä-Ollila 2010) I chose to use animal characters because I wanted the game to feel easily approachable. Animals are easy to identify with, but unlike children, they can support themselves alone and their level of comfort requirement is much lower. I think that this makes them easier to write and tell stories with, as it is possible to focus more on other storytelling elements than a life of a real human.

3.1.1 The main character

The little cat's character sketches (Figure 3) are somewhat based on Krtek (The Mole). He lives in a modest home, under the old barn. His understanding of the world and social awareness is limited, similar to a young child's. He is however depicted to live on his own, and in a way, "creating his own happiness" by building and fixing things, and living life a day at a time.

The little cat's style of life and environment is generally safe, but the character is a vulnerable creature, and this can be seen when the mysterious events happen to him and he just lays in bed, too scared to take action.



Figure 3. First sketches of the main character (Tommila 2018)

At heart, the little cat is empathetic and honest. He is always ready to help, and only wants best to others. He tends to set himself aside, and thinks higher of others, even those who are generally not popular or competent at life.

To be easily more identified with, the little cat's body is a small and childlike; he has a large forehead and eyes and his expressions are often surprised or worried. (Figure 4) The body style should reflect the behavior and personality of the character. Practising gestures and body movement should be done several times, because the character will be drawn to the final game in many positions. (Mitchell 2012)



Figure 4. Body and head style of the main character (Tommila 2018)

3.1.2 The spirit

I wanted to make further references to Finnish mythology, so for the mystical spirit I chose the form of an egg and later the crane-like bird. In many nations there is a creation myth that the world is born from an egg. (“World egg”, 2018) In Finnish epic *Kalevala* (1849), the world is born from an egg of the bird Sotka. I designed the character to be a nature spirit, to add to the environmental theme of my story. Also the character of the spirit works as an embodiment of the nature; the little cat must first nurture and protect it, while others want to consume it. Later the spirit is born and the protection has been effective.

The design of the egg is based on Russian goldsmith Peter Carl Fabergé’s decoration eggs. (Figure 5) To this day, seven from the 69 Fabergé eggs are missing, so I thought it would be a fun thing if the character in the story would find one of them.

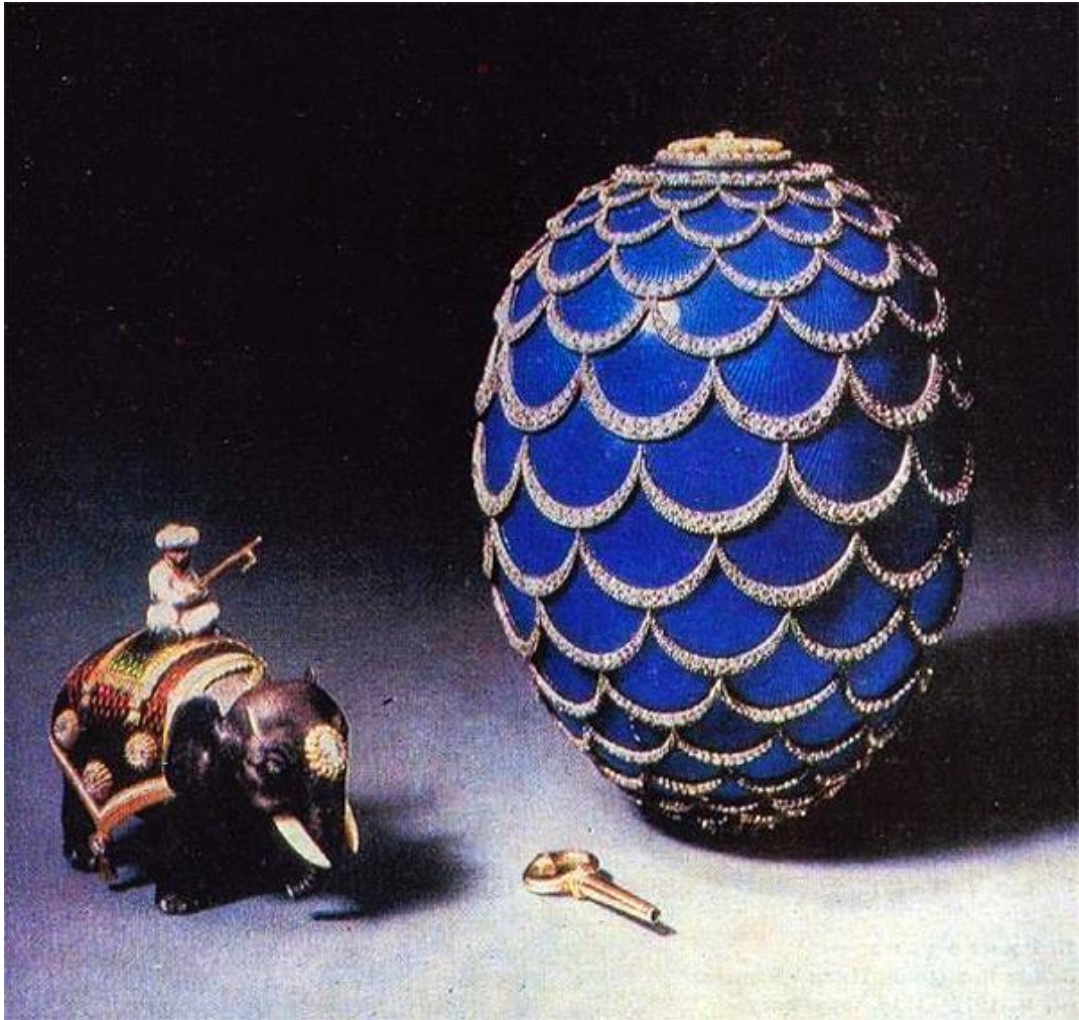


Figure 5. One of the 69 Fabergé eggs, “pinecone” (Beautiful Imperial Faberge eggs ca)

3.1.3 Environment art

A well-written story does not need to educate as it's world exists to be experienced and lived through. (Jylhä-Ollila 2010)

Storybook illustration takes the viewer to another, alternative world. The environment should be designed so that the reality is disappeared and it has been completely replaced by a land of imagination. (Muurinen 2013) In every fiction, there still needs to be believable, recognizable frames that surround the events, that work as the rules of the world.

A lot of sketches were done for the environment and furniture of the house. (Figure 6) There was a certain way I wanted the objects in the house to look like:

- Round and cute to carry on the design from the cat's character. Also make an implication that these objects were his own.
- Old styled, without electricity to show the character's simple lifestyle. Since he is an animal, I feel like the technical objects would be too distracting and create unbalanced atmosphere.

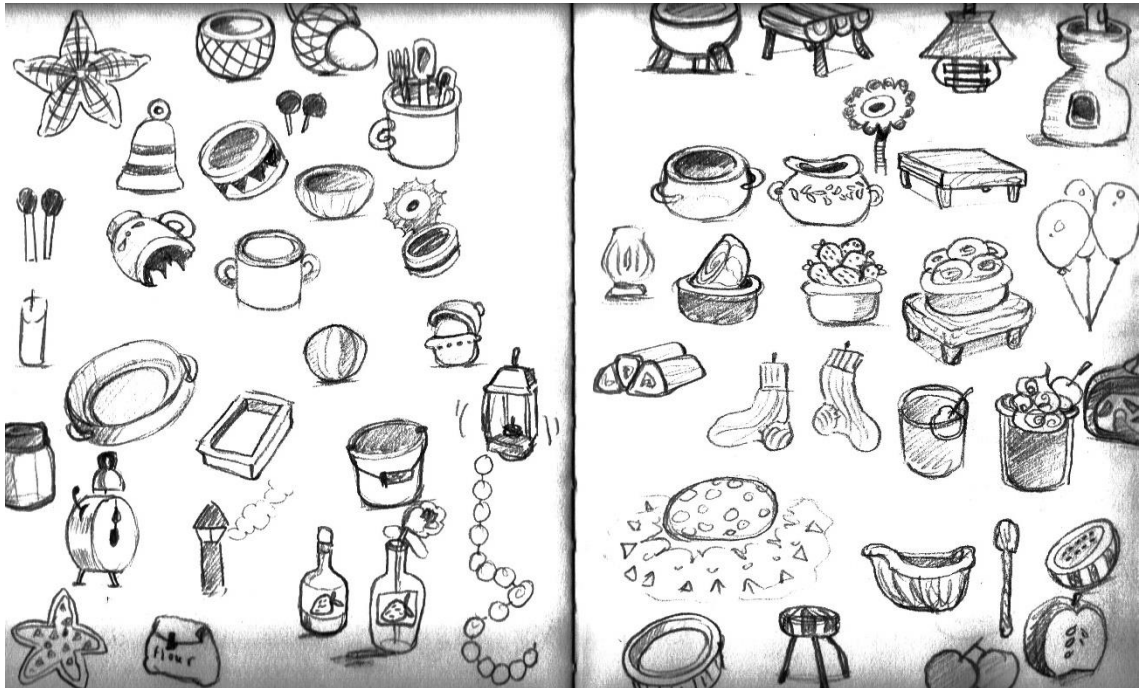


Figure 6. Sketches of objects and furniture based on Krtek and other references (Tommila 2018)

3.2 Scenes

To get a coherent idea of the product, I drew a sketch of the whole cinematic sequence of the game, which would be like a rough screenplay. (Figure 7) It helps to plan out the whole game and immediately notice the biggest problems in the story.

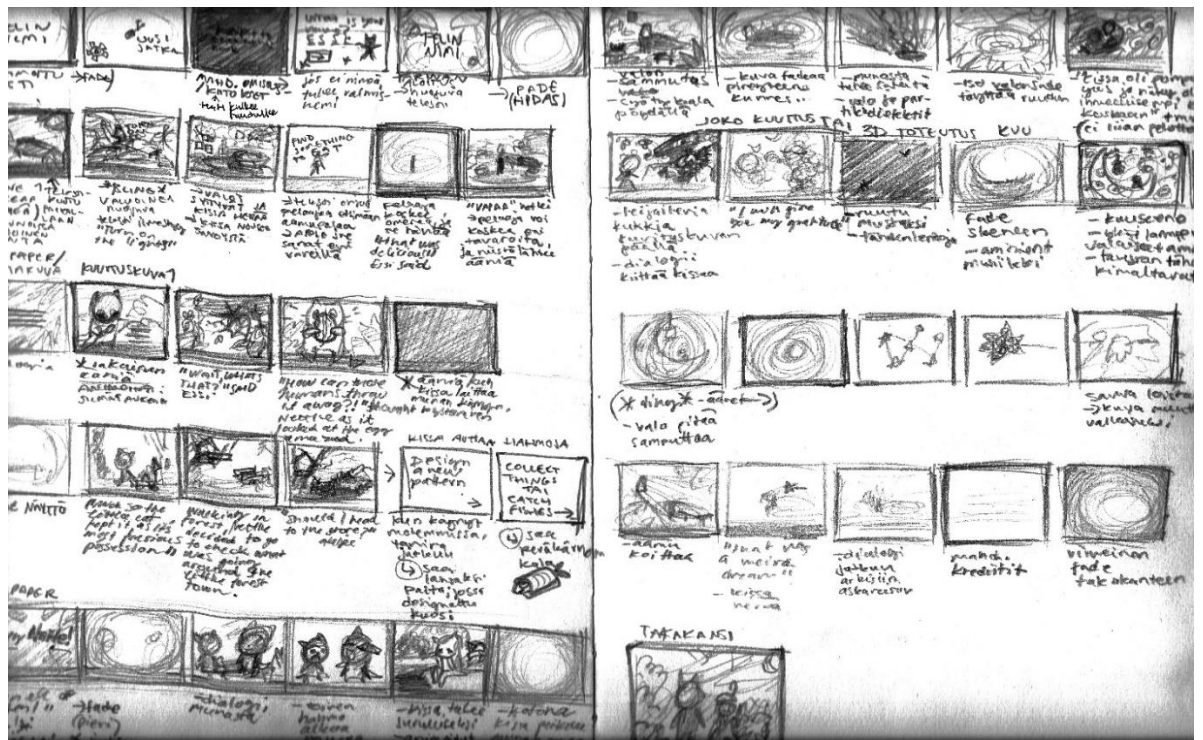


Figure 7. Planning the screenplay (Tommila 2018)

I created some scenes in pairs, (Figure 8) (Figure 9) to sketch out the concept ideas of those parts of the game. The drawing are rough and were only meant to lay out the idea to see if it is a good or not. Some of them were used in the final game, and some were ditched already in the making of the storyboard.

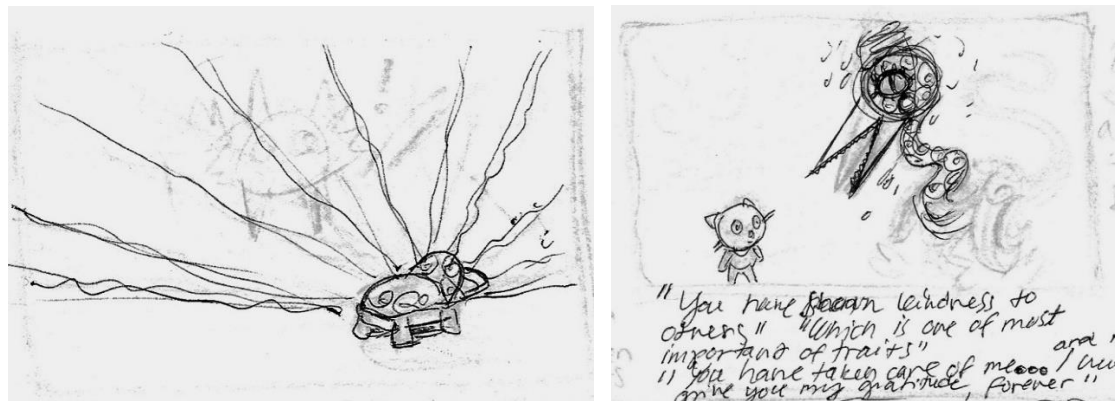


Figure 8. A sketch showing the birth of the spirit (Tommila 2018)

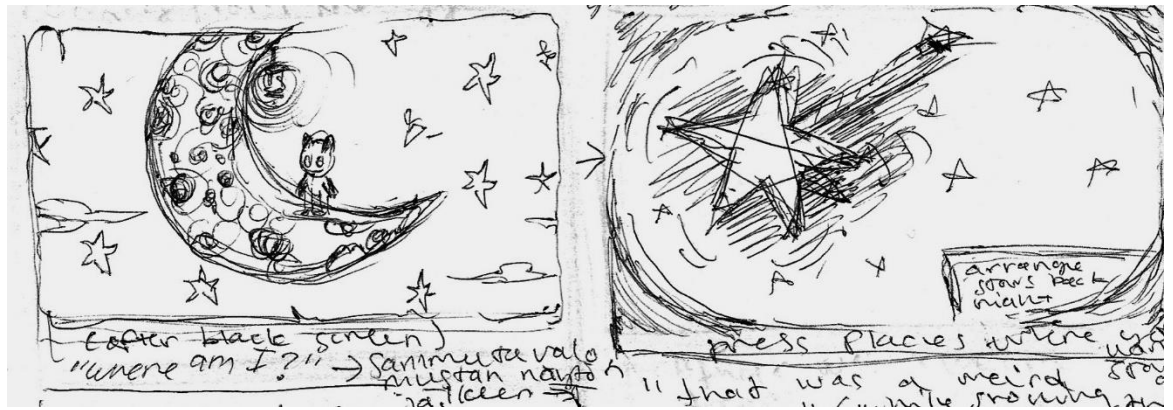


Figure 9. Details of the cinematic sequences (Tommila 2018)

I also made several drafts showing the angle of a camera in a scene, (Figure 10) to understand better which things would be visible in the image and how the perspective would work. This is an effective way to plan out the scenes and see if there is a problem with elements fitting to the scene or if the perspective is not working as well as previously thought.

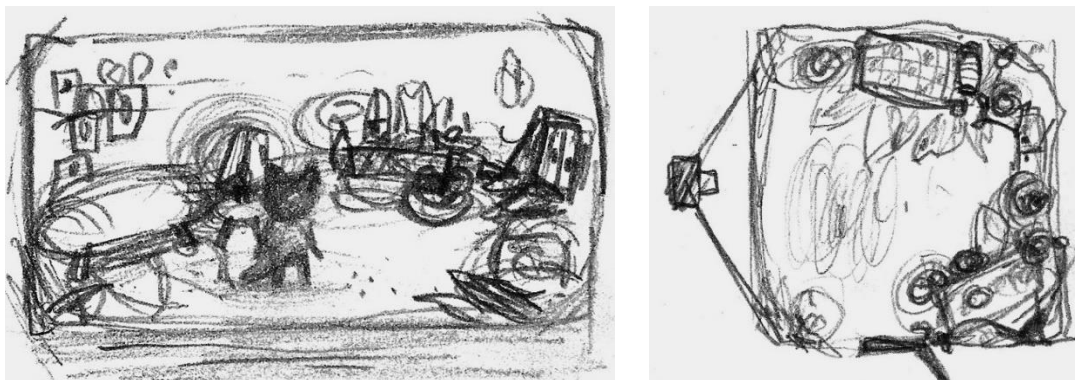


Figure 10. View of the room from side and upwards showing camera position (Tommila 2018)

3.3 Dialogue

To achieve a storybook-like narrative, I took reference from books like *Messi ja Mysteeri* (2015) by Ninka Reittu and Madonna's *Lotsa de Casha* (2005) which I found to be fun to read.

In the dialog I wanted different characters to have their own coloured text when speaking, so that it would be easier to read, and it would also bring personality to the characters since they do not have any voice acting.

In order for the player to proceed in the game, clues must be followed. They appear in the dialog as words of different colour, which implies that the element can be clicked.

4 STORYBOARDING AND ILLUSTRATION

The actual making of the product was started by creating a digital storyboard, that would work as the base for the Unity skeleton where the scenes would be set for the final game. (Figure 11) This storyboard did not include any directional elements that would later be added to the game.

Creating different storyboards is a fast way to quickly realize problems before too much work has been done. It is also a good method to present ideas to the team and help them understand what the product is like. (Pardew 2004)

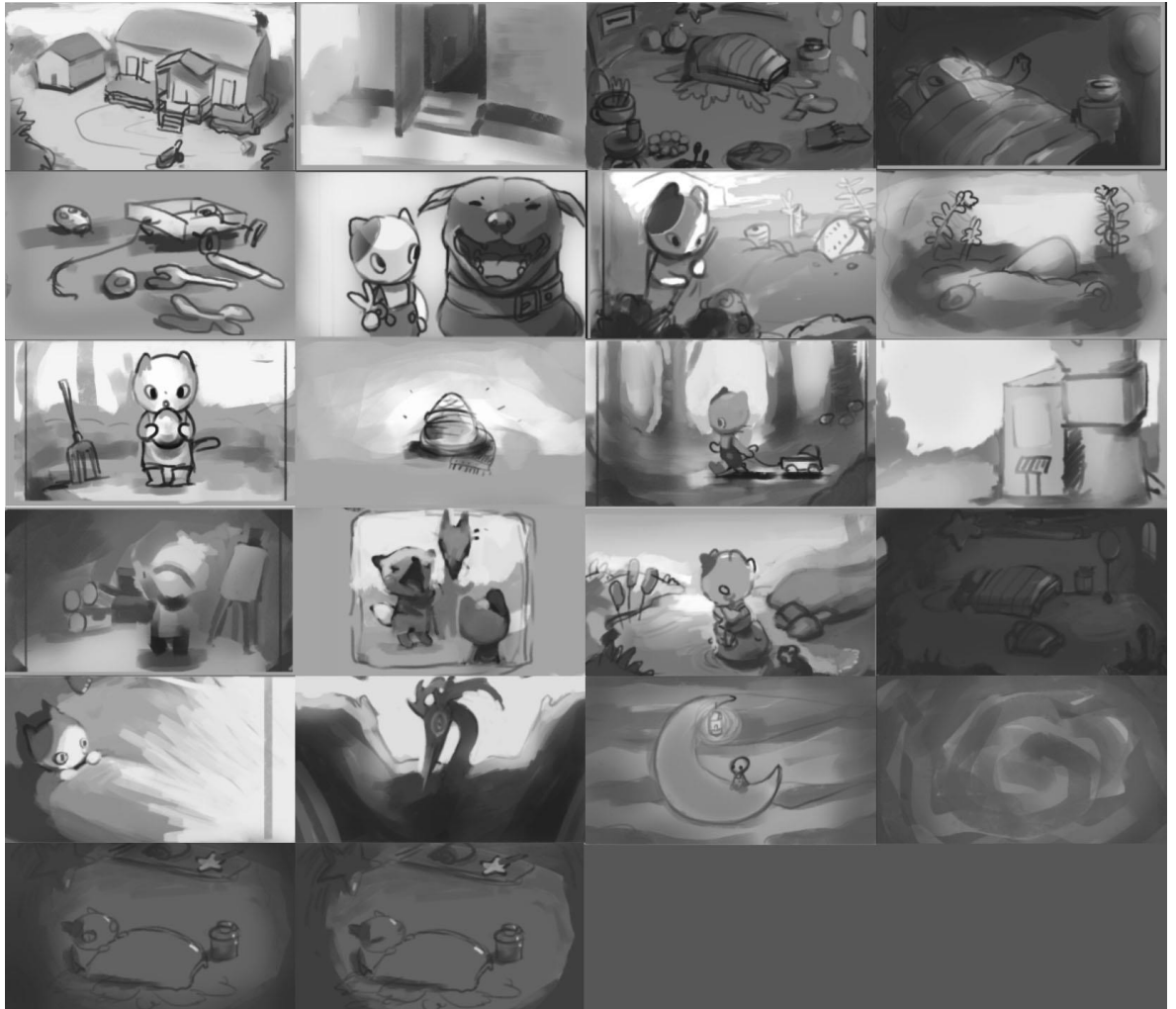


Figure 11. A storyboard of the whole game where the texts are not included (Tommila 2018)

4.1 Illustrations

The most time-consuming part of the project was designing and painting the final illustrations.

Hanna Leppänen (2011) refers Matti Hannus in her text this way: The image itself is ambivalent, when thinking it's meaning or interpretation. Only the context, the relationships to the other images or verbal explanations will give image it's meaning.

A children's illustration should be based on a mindscape that will treat the viewers equally. Emotions can be viewed from a perspective that is understandable for a child, like creating a meaningful dialogue inside the image.

4.1.1 What to consider when designing game illustrations for children

An illustration is its own small world, where pre-set rules dominate it. The events have been given borders, which a child can grip on safely, to immerse and identify themselves with. (Jylhä-Ollila 2010) The duty of an illustration is significant, because the picture in the storybook is supposed to bring out joy, thrill and excitement. Jylhä-Ollila (2010) refers to Jokipaltio: “The child’s joy should be the primary goal because the experiences given to child will affect everything in their forthcoming life ahead. “The aesthetic experience is important for child’s development.

The studies have found that children do not like images drawn by other children or images that imitate children’s art, but they tend to prefer more detailed, adult illustration style. (Österberg 2001) Younger than school-aged children often view the images from detail to detail, sometimes failing to see the whole image at once. In test groups children preferred images that to adults had insignificant details, like a small pile of balls or a worm in the edge of a picture. (Manni, 2014) (Uglow 2009)

The illustration is a great aid in children’s stories. It is possible to tell events in illustrated form that consist several layers, and present the unknown without verbal indicators, because the illustration is more concrete than text. An image can bring out abstract emotions for a person who is not able to read.

When looking at an illustration, we can understand only the things that we already know; people can see the image according to their own acquired information. We also have the tendency to create a relationship for two adjacent images and make them into a story even if the images in reality are not connected at all.

The children do not have ready-made understanding what is or isn’t a valuable art. Therefore, their aesthetic experiences may be more authentic than of adults. When a person grows, they may start hiding their true preferences and seeing value only in things that is thought to have quality among majority of people.

The child reads an image based on to their own development and experience. The void that is left between the picture and understanding, is filled by child's own imagination. (Österberg 2001) (Jylhä-Ollila 2010)

In this illustration project it was important to focus on not only illustrating the main events, but also paying attention to backgrounds. They needed to have several small objects of which the player could look at and communicate with. I remember from my own childhood that I looked at pictures very intensively and was sometimes unable to read the complete image. Only later when browsing the books as an adult, the same images appeared very differently or entirely unfamiliar.

A children's illustration should try to reach viewers of the different age; it should give layers of detail so that it can be enjoyed by many.

4.1.2 Choosing a style

A part of developing a visual product is designing a style. The style needs to have a reason behind it and it should represent what is happening in the story. Because I wanted to make a story about simple, outdoor life in the countryside, I wanted the style to be shabby and rugged. I wanted the images to bring mind the basic way of living; to have that organic simplicity of life that is sometimes unsafe and insecure. I chose to use chalky brushes and bright colours to imitate oil pastels or crayons that are typically associated with children's drawings.

The style affects the product not only by giving it a meaning but a deeper level of emotion. Shaggy lines and asymmetric elements depict chaos and unknown, disturbance of peace and anxiety. Bright and solid, exaggerated elements create a feeling of wholeness, wellness, control and balance of mind. (Figure 12)



Figure 12. Solid, exaggerated shapes and bright environment help to create balance and safety into illustration. (Lodge 2016)

Opposed the style of Angry Birds, Shirley Hughes's messy, distorted style fits the story where the loved toy dog is accidentally sold at the jumble sale. (Figure 13) The style expresses the childhood loss and the joy of return, and the complex and chaotic living with siblings. (Uglow 2009) While Angry Birds movie is full of fast moving action and comedy, it's style gives a pleasing space for eyes to relax and follow the story.



Figure 13. Shirley Hughes's painting style in the book *Dogger*. (Hughes 2017)

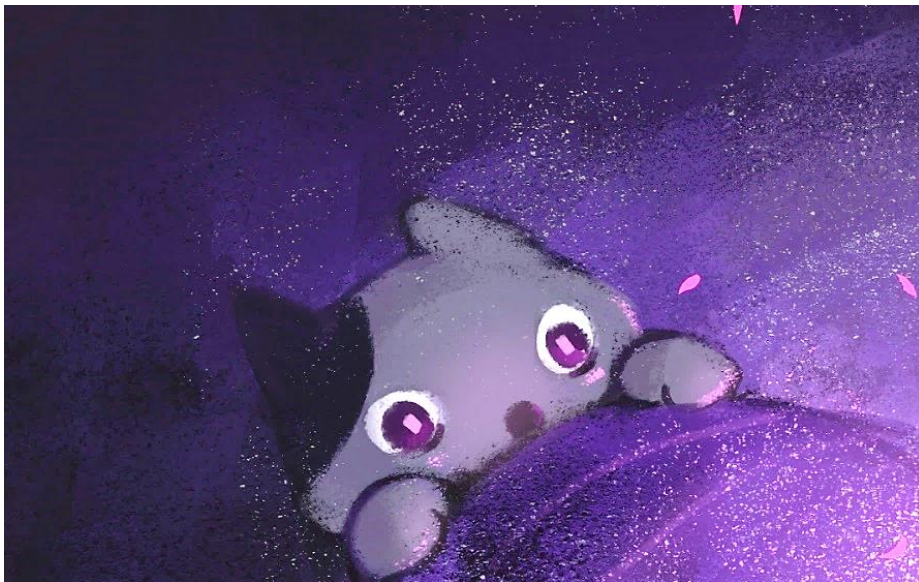


Figure 14. Detail presenting the crayon-like style in *The Little Cat and The Rainbow Egg* (Tommila 2018)

5 TECHNICAL DEVELOPMENT

It is good to run the game on a platform at an early stage, to see if the idea works on a fundamental level. I learned that the audio should be put on the game as early as possible as it is a major help in defining and designing the scenes. Together with storyboard, it surprised me how much the audio improved the gaming experience. The sounds also made it able to be observed on a directional standpoint in early on.

This required the game to be coded before the illustrations were complete. Antti worked with programming while I was producing the illustrations – sometimes we'd stop and test out the game on the tablet to see any problems with graphic or bugs – and then carry on with the work.

I will discuss briefly the methods of how the game was put together and how the interactive scenes were built in Unity.

5.1 Programming

The game was coded by using Microsoft's programming language C Sharp. Because coding is time-consuming, I reached out to my partner Antti Kytö who in the end created everything related to programming and was able to write a code smartly so that changing the elements on the screen was easy and quick and cinematic scenes worked out flawlessly.

First the skeleton of the game was created in Unity. A row of sprites was created where the illustrations were placed as the background. A code that changes the image when tapping a correct part of the screen was created.

In some scenes there are moving backgrounds that look like particle effects. This was made simply by creating a texture from an image and repeating it. Then the texture was placed into a coded shader.

The fading effect between the scenes was made by creating a solid coloured image and animating it while changing its alpha (transparency).

After all the images and sprites were in place, the dialogue which was readily written in a text document was copied in parts to each scene so that it was easier to see how the final illustration should be detailed.

The final code does not have too many bugs, and the only one we found was that when moving too quickly between the scenes sometimes the audio could not load. However, during the normal play speed this should not be a great problem. If the game would be still developed further, the code for the scenes would evidently be remade entirely and executed more smartly in a way that the code would be even more flexible for the possible changes in the game.

5.2 Creating an interactive scene

For the animations of the scene, two versions of the same image were drawn, and sometimes one scene consisted of four images: two before interaction, and two after. For example, in the scene with moon, the player must click the lamp to shut the light. The animation stays the same, but the colours of the scene change so that the starry sky in the background becomes more visible. (Figure 15) A sound plays while clicking the lamp and together with ambient music the scene acquires mystical and immersive feel.



Figure 15. Two versions of an animated scene (Tommila 2018)

After bringing all the final images to Unity, more interactive elements were added to the scene, such as falling leaves, glittery particles and fade effects.

5.3 Minigames

To further enhance the feeling of significance of the player's own input to the story, minigames or gamified scenes were designed to fit to the storytelling.

A side-game that carries through the whole story is seeking ladybugs which are hidden in the illustrations. Some of the bugs will react to the player clicking them. There is a ladybug icon with a number that will appear to the top right corner of the screen every time a ladybug was found. Currently there are six bugs to be found in the game. This style of interactivity creates coherency between the scenes, adds to the reading of the story and works as a side-quest type of game because it doesn't directly correlate to the story.

In addition, there are three scenes in *The Little Cat and The Rainbow Egg* of which player can directly play; fishing, painting and placing stars.

5.3.1 Fishing sequence

In this game the player must press the shadow of the fish which starts the animation of the character throwing the rod. (Figure 16) When caught, the scene plays where the cat is seen with the rod and he tells a small bit of information about the fish such as how they live or can be made into a dish. (Figure 17) There are four different outcomes of the scene which are randomly chosen when the rod is thrown: a perch, a flounder, a roach or a trash can. The fishes are based on the natural species that can be found from Finnish lakes.

Later in the game, the same fish or trash that the player has caught is seen framed on the wall of the little cat's house. (Figure 18)



Figure 16. A screenshot of the fish pond minigame (Tommila 2018)



Figure 17. Caught fish (Tommila 2018)



Figure 18. The fish caught previously appears to the frame on the wall later. (Tommila 2018)

5.3.2 Painting

In the middle part of the story, the main character steps inside the Ateljé. (Figure 19) After that the player is given a chance to draw an image on the paper. (Figure 20)

After drawing, the character will comment on the final image and it appears in the background as a pattern. (Figure 21)

Like in fishing, the drawn picture will appear framed on the little cat's wall later in the game. (Figure 22)

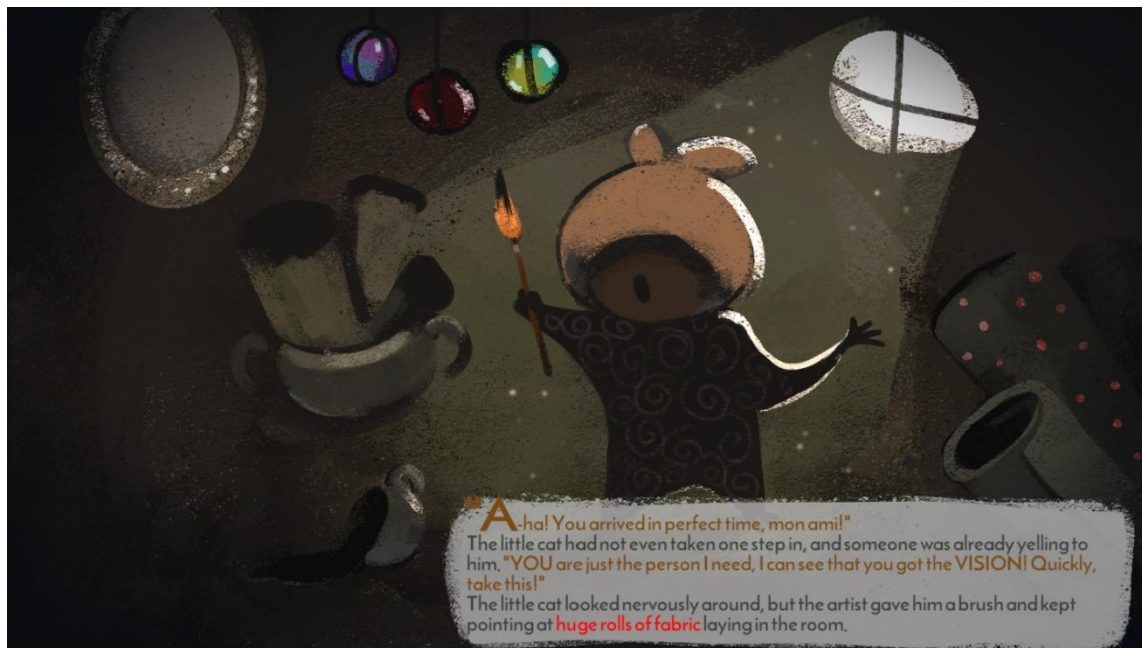


Figure 19. Ateljé scene (Tommila 2018)

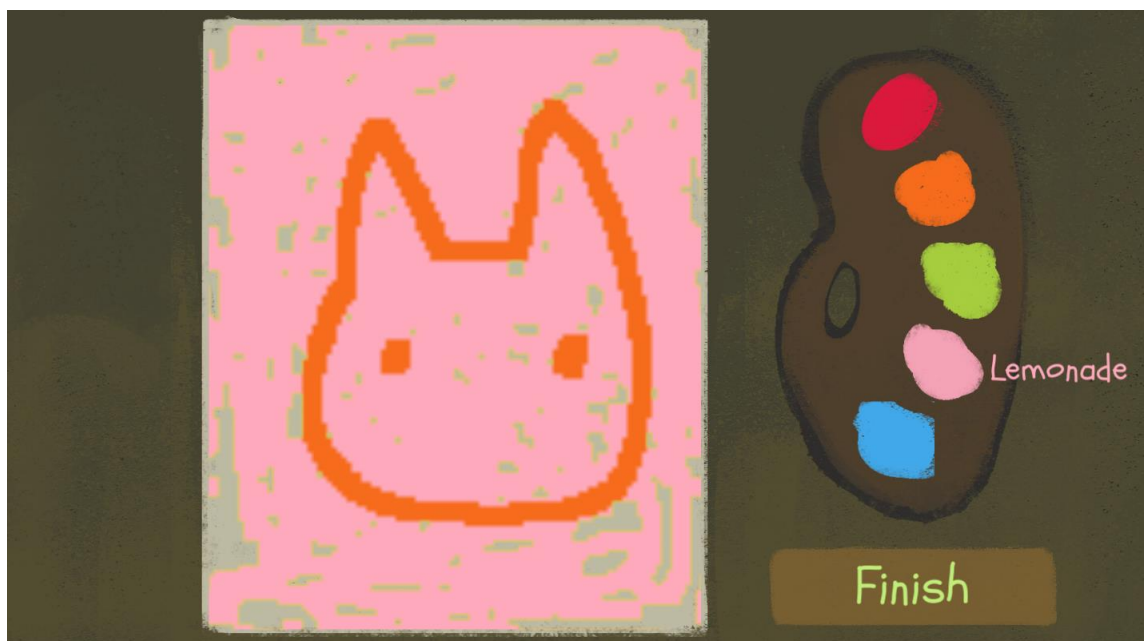


Figure 20. Painting game (Tommila 2018)

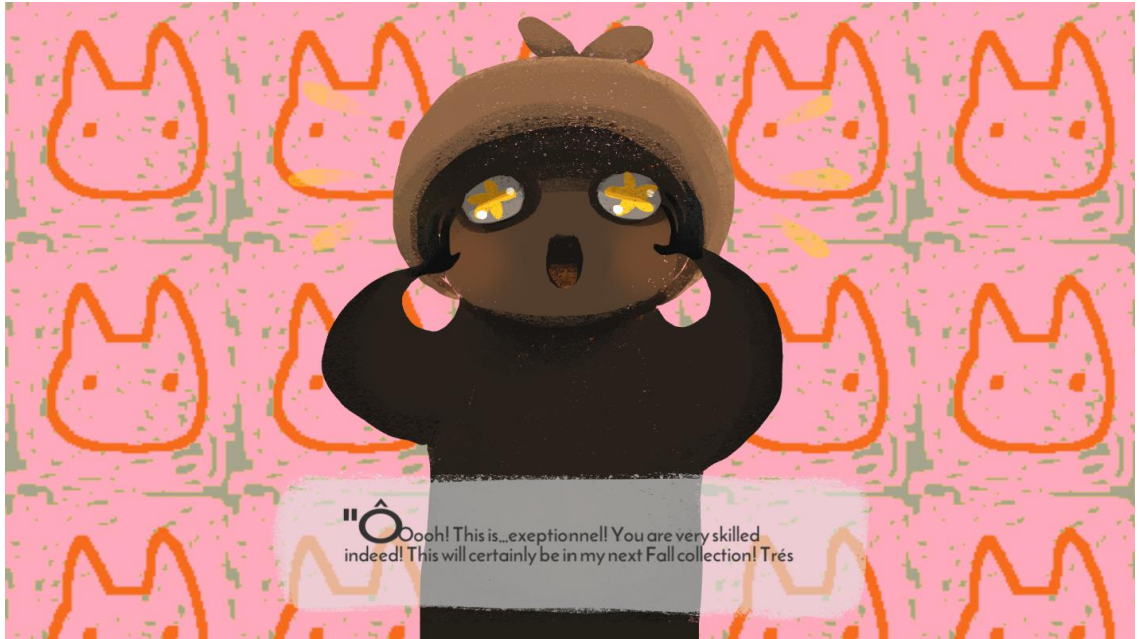


Figure 21. The drawing appears on the back of the character. (Tommila 2018)



Figure 22. The drawn image appearing later in the story. (Tommila 2018)

5.3.3 Stars

The third minigame is a scene where stars must be placed on right slots to construct a magical wand. (Figure 23) When placing a star correctly, a sound will play. Then, a magic wand will form on the screen and it can be clicked. (Figure 24)



Figure 23. Star minigame (Tommila 2018)



Figure 24. The result of passing the game (Tommil 2018)

5.4 Scoreboard

After the credits and the ending, the score window showing all the found plants, animals and ladybugs will show. (Figure 25)



Figure 25. The score view (Tommila 2018)

6 DETAILING, PUBLISHING AND FURTHER DEVELOPMENT

The last stage of development involved adding last details to the illustrations, some additional animations, music and sound. When the game reached the 0.9 version (beta), it was uploaded to Google Play store. (Figure 26) The game was then given for adults and children for beta-testing. I collected opinions from three children who fit to the target group of the game.

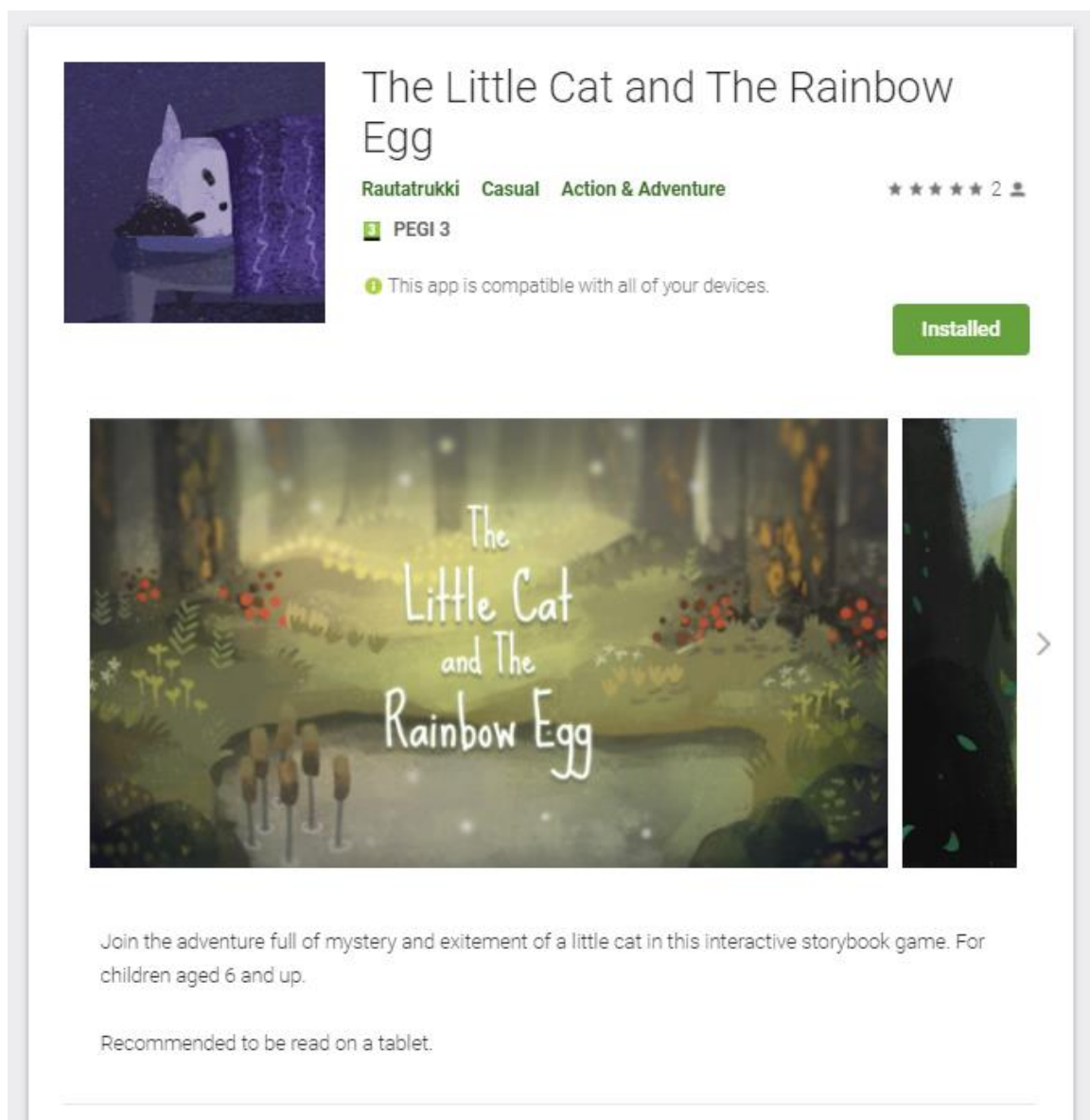


Figure 26. Screenshot of the game on Google Play (Tommila 2018)

6.1 Audio

The last part of the development was adding sounds and music to the game. As the interactive elements and effects highly rely on the sound, the fitting tracks were composed by Toni Arvilommi. Some of the sound effects were found from public-domain sources like Zapsplat and Freesound, which I found to be a quite okay since the game had no financing at all.

The combination of audio and animation creates something almost like a sixth sense; the moment they play together, the player is right able to immerse themselves to the part of the story in completely different way than by just watching visuals or hearing music. (Lecky-Thompson 2008)

To fit the style, I used tracks that were recorded from many old and broken items to further emphasize the shabby and countryside milieu.

The game uses certain soundscapes during the gameplay. Wind chimes can be heard through the story until the last scene, where the main character wakes up second time. This refers to a dream sequence being broken. Illusion of a dream is however broken up by the magical item still existing in “real life” on the shelf on top of the main character’s bed.

6.2 Testing

The beta-testing of the game was done with three children of from ages 7 to 11.

They were given the game on a big screened phone without any additional instructions. Only one of the children spoke English as their second language, and the other two knew some basic English words.

Everyone got through the game, and everyone said they liked it and one liked it very much. The most interesting feature was the ladybug collection, which wasn’t clear for the non-English speaking children from the start but made them want to play the game again to collect all six. All the children also liked the characters. One of the children described the ending “confusing”.

The children who did not understand English also did not read the texts. However, they were forced to find the highlighted word when they got stuck, in order to proceed in the game. This made me think of how this type of game could potentially be used on learning a new language.

Overall, I was positively surprised with their reaction to the game, and I feel like it was easily playable and understandable, which was something I worried about during the development.

7 CONCLUSION

In the end, the project came out successful and coherent. The product is a solid and well-functioning combination of technical and visual elements.

The making of the project took a long time, but not much longer than previously planned. I made quite a spurt and was able to produce over 30 images of which most were animated in just couple of months.

This was by far my biggest project I have done, solely by the amount of graphics made for the game. The testing of the game was interesting, and it was nice to see different people try the game and hear their opinions. I think I learnt a lot from the feedback of others during and after making of the project.

For further development, there are few things that could be improved. An active text box with a text that would be changed by tapping the story forward could be added to the game. This would increase the amount of text that is possible to read in one scene. There could also be branches in the story, so that by clicking a certain element or answer would take the player to one of three different scenes. There would be either several endings, or just one where the storylines all come together again. The next feature to be added will be a button that enables going back to the previous scene, as some reported having accidentally pressed the correct area and proceeded to the next scene before they would have wanted to.

The style of illustrations could have been even more consistent. They could have been executed more time-saving manner, generally having a simpler style but more detailing. Also, there could still be more interactive elements in each scene.

I feel like the making of this project helped me tremendously to improve my own designing and illustration skills. It was very rewarding for me that I got to work with skilled partners who I also had to direct to get the outcome I preferred.

Something to take away from this project is that it is good to think about subjectivity when making an illustration. To create several layers to the image, so that it is possible to be read by people of different ages and tastes. This project gave me a lot of new viewpoints and education about the illustration and game making process for children. The project certainly gave a learning curve in illustrating backgrounds and scene designing. The sounds and music also fit to the complete story pleasingly and give it dimension.

REFERENCES

Designing Rewards in Games. No date. Available at:
http://onlyagame.typepad.com/only_a_game/2005/08/designing_rewar.html
[accessed 1 April 2018].

Engländer, F. 2014. Define your art with Mood Boards. Animator Island. Article. Available at: <http://www.animatorisland.com/define-your-art-with-mood-boards/> [Accessed 8 April 2018].

Jylhä-Ollila, T. 2010. Storybook Mörrri: Story Crafting, Symbols and Illustration in a Children's Book. Kemi-Tornio University of Applied Sciences. Degree programme in Social services. Bachelor's thesis. PDF document. Available at: http://www.theseus.fi/bitstream/handle/10024/21772/teija_jylha-ollila.pdf?sequence=1&isAllowed=y

Leppänen, H. 2011. "Kerro kerro kuva" Valokuvan sanoma tieteellisessä tekstissä. University of Tampere. Degree programme in Visual journalism. Master's thesis. PDF document. Available at: <http://tampub.uta.fi/bitstream/handle/10024/82523/gradu05019.pdf?sequence=1&isAllowed=y> [Accessed 8 April 2018]

Manni, E. 2014. Creating an illustrated children's book. Metropolia University of Applied Sciences. Degree programme in Media. Bachelor's thesis. PDF document. Available at: http://www.theseus.fi/bitstream/handle/10024/71305/Essimanni_opinnaytetyo.pdf?sequence=1&isAllowed=y

Marttinen, L. 2014. Illustrating an Early Childhood Education Plan. Metropolia University of Applied Sciences. Degree programme in Media. Bachelor's thesis. PDF document. Available at: http://www.theseus.fi/bitstream/handle/10024/84997/marttinen_laura.pdf?sequence=1&isAllowed=y

Muurinen, T. 2013. Supernaturalism in the illustration of the children's book. Seinäjoki University of Applied Sciences. Degree programme in Design. Bachelor's thesis. PDF document. Available at: http://www.theseus.fi/bitstream/handle/10024/58158/Muurinen_Tytti.pdf?sequence=1&isAllowed=y

Mitchell, B. 2012. Game Design Essentials. John Wiley & Sons, Incorporated. Ebook Central. E-Book. Available at: <https://ebookcentral.proquest.com>

Numminen, I. 2013. Vuodenaika, luontosuhde ja luontokuvaus Tove Janssonin teoksissa *Taikatalvi* ja *Muumilaakson marraskuu*. University of Oulu. Degree programme in Literature. Master's thesis. PDF document. Available at: <http://jultika.oulu.fi/files/nbnfioulu-201305241341.pdf> [Accessed 8 April 2018]

Pardew, L. 2004. Beginning Illustration and Storyboarding for Games. E-book. Course Technology. Ebook Central. E-book. Available at: <https://ebookcentral.proquest.com>

Saarenmaa, A. 2015. Lastenkirjallisuus heijastelee yhteiskunnan arvoja. Blog post. Available at: <http://alusta.uta.fi/juttuset/2015/04/23/lastenkirjallisuus-heijastelee-yhteiskunnan-arvoja.html>

Tommila, E. 2018. The Little Cat and The Rainbow Egg. Google Play Store. Android game. Available at: <https://play.google.com/store/apps/details?id=com.Essi.TheLittleCatandTheRainbowEgg> [Accessed 18.4.2018]

Tuotteistaminen. 2017. Opinnäytetyöpakki. Kajaanin ammattikorkeakoulu. WWW document. Available at: <https://www.kamk.fi/opari/Opinnaytetyopakki/Teoreettinen-materiaali/Tukimateriaali/Tuotteistaminen/Tuotteistaminen> [Accessed 1 April 2018]

Uglow, J. 2009. The lure of illustrated children's books. The Guardian. WWW document. Available at: <https://www.theguardian.com/books/2009/dec/19/childrens-books-illustrations-jenny-uglow> [Accessed 1 April 2018]

Lecky-Thompson, G. 2008. Video Game Design Revealed. Course Technology. Ebook Central. E-book. Available at: <https://ebookcentral.proquest.com>

World Egg. 2018. Wikipedia. https://en.wikipedia.org/wiki/World_egg [accessed 9 April 2018]

Why Rewards and Medals Play a Key Factor in Your Game. 2015. Pluralsight. WWW document. Available at: <https://www.pluralsight.com/blog/film-games/keep-players-engaged-rewards-medals-play-key-factor-game> [accessed 1 April 2018].

Österberg, H. 2001. Lapsi Satukuvan tulkitsijana. University of Jyväskylä. Degree programme in Early childhood education. Master's thesis. PDF document. Available at: <https://jyx.jyu.fi/dspace/bitstream/handle/123456789/18170/heoster.pdf?sequence=1> [Accessed 1 April 2018]

Figure 1. An example of a moodboard visualizing the overall feeling of the game. Tommila, E. 8 August 2018.

Figure 2. Scanned leaves later used as a brush in Photoshop. Tommila, E. 2018.

Figure 3. First sketches of the main character. Tommila, E. 2018.

Figure 4. Body and head style of the main character. Tommila, E. 2018.

Figure 5. One of the 69 Fabergé eggs, “pinecone”. Beautiful Imperial Faberge eggs. No date. Available at: <http://viola.bz/imperial-faberge-eggs/> [Accessed 9. April 2018]

Figure 6. Sketches of objects and furniture based on Krtek and other. Tommila, E. 2018.

Figure 7. Planning the screenplay. Tommila, E. 2018.

Figure 8. A sketch showing the birth of the spirit. Tommila, E. 2018.

Figure 9. Details of the cinematic sequences. Tommila, E. 2018.

Figure 10. View of the room from side and upwards showing camera position. Tommila, E. 2018.

Figure 11. A storyboard of the whole game where the texts are not included. Tommila, E. 2018.

Figure 12. Solid, exaggerated shapes and bright environment help to create balance and safety into illustration. Lodge, G. Film Review: “The Angry Birds Movie”. 7 May 2016. Available at: <http://variety.com/2016/film/reviews/the-angry-birds-movie-review-1201768669/> [Accessed 8 April 2018]

Figure 13. Shirley Hughes’s painting style in the book *Dogger*. Hughes S. 10. February 2017. Twitter. Available at: https://twitter.com/shirleyhughes_/status/829979512708427776 [Accessed 8 April 2018]

Figure 14. Detail presenting the crayon-like style in *The Little Cat and The Rainbow Egg*. Tommila, E. 2018.

Figure 15. Two versions of an animated scene. Tommila, E. 2018.

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Figure 17. Caught fish. Tommila, E. 2018.

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Figure 24. The result of passing the game. Tommila, E. 2018.

Figure 25. The score view. Tommila, E. 2018.

Figure 26. Screenshot of the game on Google Play. Tommila, E. 2018.