UNIVERSITY OF THESSALY

SCHOOL OF ENGINEERING

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Digital Storytelling in Education

Diploma Thesis

Dimitra Papaefthymiou

Supervisor: Hariklia Tsalapata

October 2023

UNIVERSITY OF THESSALY

SCHOOL OF ENGINEERING

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
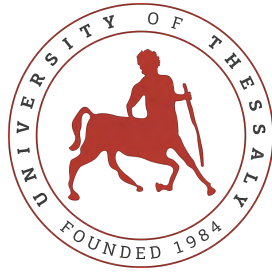
Digital Storytelling in Education

Diploma Thesis

Dimitra Papaefthymiou

Supervisor: Hariklia Tsalapata

October 2023

ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΕΣΣΑΛΙΑΣ

ΠΟΛΥΤΕΧΝΙΚΗ ΣΧΟΛΗ

ΤΜΗΜΑ ΗΛΕΚΤΡΟΛΟΓΩΝ ΜΗΧΑΝΙΚΩΝ ΚΑΙ ΜΗΧΑΝΙΚΩΝ ΥΠΟΛΟΓΙΣΤΩΝ

Ψηφιακή Διήγηση στη Μάθηση

Διπλωματική Εργασία

Δήμητρα Παπαευθυμίου

Επιβλέπουσα: Χαρίκλεια Τσαλαπάτα

Οκτώβριος 2023

v

Approved by the Examination Committee:

Supervisor   **Hariklia Tsalapata**

Laboratory Teaching Staff, Department of Electrical and Computer Engineering, University of Thessaly

Member   **George Thanos**

Laboratory Teaching Staff, Department of Electrical and Computer Engineering, University of Thessaly

Member   **Alexandros Chroneos**

Professor, Department of Electrical and Computer Engineering, University of Thessaly

DISCLAIMER ON ACADEMIC ETHICS
AND INTELLECTUAL PROPERTY RIGHTS

«Being fully aware of the implications of copyright laws, I expressly state that this diploma thesis, as well as the electronic files and source codes developed or modified in the course of this thesis, are solely the product of my personal work and do not infringe any rights of intellectual property, personality and personal data of third parties, do not contain work / contributions of third parties for which the permission of the authors / beneficiaries is required and are not a product of partial or complete plagiarism, while the sources used are limited to the bibliographic references only and meet the rules of scientific citing. The points where I have used ideas, text, files and / or sources of other authors are clearly mentioned in the text with the appropriate citation and the relevant complete reference is included in the bibliographic references section. I also declare that the results of the work have not been used to obtain another degree. I fully, individually and personally undertake all legal and administrative consequences that may arise in the event that it is proven, in the course of time, that this thesis or part of it does not belong to me because it is a product of plagiarism».

The declarant

Dimitra Papaefthymiou

Diploma Thesis

Digital Storytelling in Education

Dimitra Papaefthymiou

Abstract

Education is one of the most important factors in someone's life. It aims to complete a person and help him face his struggles. With the continuing advance of technology, new ways of learning are proposed, depending on the needs of each generation. This leads to digital storytelling becoming one of the main possible learning tools in today's classrooms. In this thesis, the contribution of digital storytelling is discussed. Moreover, the impact of using video games, and more specifically visual novels, as educational tools is analysed. Finally, the process of making an interactive visual novel aiming to help the player relate with the struggles of each stage of a human's life is presented. The story, script, art and soundtrack of the game are fully original. In the end, the contribution of this thesis is written along with some possible future improvements.

Keywords:

storytelling, digital storytelling, education, visual novel, video game

Διπλωματική Εργασία

Ψηφιακή Διήγηση στη Μάθηση

Δήμητρα Παπαευθυμίου

Περίληψη

Η εκπαίδευση είναι μια από τις πιο σημαντικές πτυχές στη ζωή του ανθρώπου. Ολοκληρώνει το άτομο και το βοηθά να αντιμετωπίσει τις πιθανές δυσκολίες που του επιφυλάσσει το μέλλον. Η πρόοδος της τεχνολογίας οδηγεί στην συνεχή εξέλιξη των μέσων μάθησης, αντικατοπτρίζοντας τις διαφορετικές ανάγκες της κάθε εποχής. Αυτό οδήγησε στο να γίνει η ψηφιακή διήγηση ένα από τα κυριότερα πιθανά εργαλεία μάθησης σήμερα. Στην παρούσα διπλωματική εργασία, φαίνεται η συμβολή της ψηφιακής διήγησης στην σύγχρονη εκπαίδευση. Επιπλέον, αναλύεται ο αντίκτυπος της χρήσης βιντεοπαιχνιδιών, και πιο συγκεκριμένα των οπτικών μυθιστορημάτων, ως εκπαιδευτικών εργαλείων. Τέλος, παρουσιάζεται η διαδικασία δημιουργίας ενός διαδραστικού οπτικού μυθιστορήματος, με στόχο να βοηθήσει τον παίκτη να ταυτιστεί με τις δυσκολίες κάθε σταδίου της ζωής ενός ατόμου. Η ιστορία, το σενάριο, η τέχνη και το soundtrack του παιχνιδιού είναι αυθεντικά. Στο τέλος, γράφεται η συμβολή της παρούσας διπλωματικής εργασίας σε όσα συζητήθηκαν παραπάνω, καθώς και κάποιες πιθανές μελλοντικές βελτιώσεις.

Λέξεις-κλειδιά:

διήγηση, ψηφιακή διήγηση, εκπαίδευση, οπτικό μυθιστόρημα, βιντεοπαιχνίδι

Table of contents

List of figures

Chapter 1

Introduction

Education is one of the most important factors contributing to complete a person and help him figure out his place in the world. The continuing change on everyday life, along with the advance of technology, lead to the need of changing the traditional methods used to pass knowledge. There is always a new way of helping someone learn and be motivated, following each generation's tendencies and different demands.

Storytelling is undeniably one of the most effective ways of learning today. The wide use of technology, made the digital storytelling a necessary method of exposing the students to more realistic and authentic scenarios of the subject they are studying. The understanding is deeper and more complete when gathering and comparing actual data of realistic events.

It is clear that the classic methods of teaching are successful, but far less appealing to the students. Furthermore, reading a good story can keep someone's interest on the subject, while also contributing to their perceptiveness and social intelligence, making them more introspective and helping them relate to different circumstances.

In this thesis, the contribution of storytelling in education is discussed, and a visual novel based on storytelling was developed to contribute to this idea.

1.1 Purpose of this Thesis

People nowadays are so absorbed in their careers and own lives that they forgot to relate and help each other. Furthermore, the educating system focuses on technical knowledge rather than aiming to increase social and emotional intelligence. The new generations already seem to acknowledge this problem and try to find new ways of teaching and learning, that also

1

focus on relating and understanding different experiences.

This thesis aims to propose a way of encouraging people to understand each other and relate to different struggles according to the age or background of someone's life. Therefore a visual novel with emphasis on storytelling was created. The story follows ten characters, with different problems, purposes, and hidden wishes. The player should try to reflect on each character and help him conquer his biggest fear. Every arc ends with making someone's wish come true.

In addition to that, the game uses exclusively English in each dialogues, aiming to help non-English speakers familiarize with reading and understanding the language.

An important factor of this project, is that it emphasizes on its storytelling and gameplay rather than teaching someone about the social problems, the age gaps, or the English language. Every knowledge comes naturally, just because the player wants to play the game. Learning subconsciously by relating and experiencing, is one of the most effective ways of educating someone's self.

1.1.1   Contribution

The contribution of this thesis can be summarized in the following steps:

1. Development of a game with storytelling characteristics, appealing to almost any age.

2. Creation of stories that encourage someone to relate on different experiences.

3. Focus on helping all the characters of the story rather than fight against them.

4. Representation of social problems in a relatable and reflecting way.

5. Use of English language in order to help non English speakers familiarize with it.

1.2   Content Organization

This chapter is the the introduction chapter. It includes the main idea of the thesis and the problems this project aims to solve. The second chapter includes a synopsis of all the research done about storytelling in education and more specifically digital storytelling and presents the impact of using visual novels in education. The third chapter contains the analysis of similar projects and focuses on the differences of this one. The fourth chapter is basically a game

design document of the final product of this thesis. The fifth chapter contains the script of the game. Finally, the sixth chapter presents the results and conclusions reached, while also proposing some possible future improvements of the project.

Chapter 2

Research

2.1 Education

Education is deeply rooted in human cultures throughout the years. Passing knowledge to the next generations is necessary in order to achieve progress and preserve what is already discovered. Although the importance of education is an undeniable fact, the learning methods differ according to the needs and the tendencies of each time.

Humans used to pass knowledge through tales, myths and works of art in the older times. When writing was discovered, children were educated through different narratives. Until the 1800s, literature was the main source of education. After that period though, with the advance of science and technology, the educational methods became more specific and technical[1]. Due to the huge amount of information, the old learning methods were unsuitable. That is why, a more object oriented approach was proposed. This may have helped achieving specialization and excellence of one person in each different field, but made the education tiring and just another obligation in the modern daily routine. This is why nowadays, the learning methods start focusing on increasing the social and emotional intelligence of the students, along with their technical and scientific skills. What is mentioned above is expected to make the educational process more interesting and appealing, while also maintaining a high level of specialization.[2]

One way of achieving this goal, is to bring back storytelling in the classrooms. Although literature is still a very powerful educational tool, digital storytelling, using media as a way of sharing stories, can be a new successful learning method. The aim is to keep the student interested in a subject in every step of his learning process and help him retain that knowledge

5

throughout the years, reaching a high level of understanding on that matter.

According to Bloom's revised taxonomy[3][4], the learning process includes the following steps:

1. **Create**

   Put together or rearrange elements to produce a new and original work.

   Suitable verbs: design, assemble, construct, conjecture, develop, formulate, author, investigate.

2. **Evaluate**

   Justify a stand or decision, according to the basis of principles and norms. This step shows the level of success of the process.

   Suitable verbs: appraise, argue, defend, judge, select, support, value, critique, weigh.

3. **Analyze**

   Draw the connections among ideas, establishing the relation between different parts.

   Suitable verbs: differentiate, organize, relate, compare, contrast, distinguish, examine, experiment, question, test.

4. **Apply**

   Use the knowledge gained in new situations and see the results.

   Suitable verbs: execute, implement, solve, use, demonstrate, interpret, operate, schedule, sketch.

5. **Understand**

   Be able to express an explanation on concepts and ideas.

   Suitable verbs: classify, describe, discuss, explain, identify, locate, recognize, report, select, translate.

6. **Remember**

   Recall, remember and be able to use the facts and basic concepts learned.

   Suitable verbs: define, duplicate, list, memorize, repeat, state.

According to what was analysed above, it is clear that using digital storytelling in education, could be a successful tool for the learning process.

2.2 Digital storytelling in education

2.2.1 Storytelling

People tend to tell stories in order express themselves and explain complex ideas. At first, stories were shared verbally in order to pass knowledge to the next generations. Later, stories started to be written, so as to be preserved over the years. Nowadays, with the advance of technology, stories are also shared digitally, achieving being read by a wider audience and placed to the digital permanent record.

Storytelling is the social and cultural activity of sharing stories, sometimes with improvisation, theatrics or embellishment. It uses words to create new worlds and experiences on someones imagination.

2.2.2 Digital storytelling

Digital storytelling is a term used to express the ability of sharing stories using digital media. The expanded elements of digital storytelling [5] are the following:

1. The purpose of a story.

2. The narrator's point of view.

3. Dramatic questions to be answered in the story.

4. The choice of content.

5. Clarity of voice.

6. Pacing of the narration.

7. Use of audio to accompany the events of the story.

8. Use of images, video or other multimedia elements.

9. Economy of the story detail.

10. Good grammar and language usage.

2.2.3   Uses of digital storytelling in education

Digital storytelling is considered to be a very effective educational tool today. The extensive research on this matter has proved its many benefits to the students, providing deeper understanding on different subjects[6].

Benefits of using storytelling as a learning method

Using a storytelling approach in education captures the attention of the student and increases their interest to focus on the lesson[7][8]. Moreover, it encourages them to participate and share their own stories by provoking their imagination[9]. The comprehension process comes naturally and helps them retain the large amount of information given, by experience and not by rote learning.

Furthermore, storytelling can facilitate a discussion about difficult topics, by addressing real life situation and encouraging students relate to different and sensitive matters. Social problems seem to be understandable and universal. Using a story makes an abstract or conceptual concept clear and approachable. It can help someone reflect on personal stories in an academic context and learn about challenging issues in a more human perspective.

In addition to these, storytelling usage in education leads to higher level thinking skills, like problem solving and practical learning. It also provokes students' artistic skills, like writing, imagination and creativity.

Finally, not all students learn and understand a difficult matter the same way. The use of storytelling, especially through digital media, gives voice to more quiet students who have better comprehension of a subject visually or by experience. It helps using all the senses to approach an issue. This way, students who have difficulty in traditional learning methods participate and feel valid.

Applications of digital storytelling in different subjects

The wide use of digital storytelling helped advancing the learning methods on different subjects[5]. The most common of them are the following:

1. **Mathematics**

   By providing a more realistic data in different everyday scenarios, a deeper understanding of mathematical applications is achieved.

2. **Medicine and health**

   Sharing different experiences and medical scenarios help patients feel less alone about their situation and medical students have access to much more real-life scenarios, than just the ones written in the books[10].

3. **Language learning**

   Offer better listening, speaking, vocabulary and writing skills since the language is learned by experience[11][12].

4. **Art**

   Students have access to multiple platforms to express their creativity or find inspiration. Also, they are able to improve their writing skills by studying similar projects to the ones they aim to create[13][14][9].

5. **Social studies**

   Social issues are presented in a more personal and relatable way from different backgrounds.

6. **Preschool studies**

   Digital storytelling helps the learning process since it is an interactive and more fun approach[15].

2.3   Video games in education

Video games are the natural evolution of digital storytelling. Except from achieving a wide audience, the stories can now be interactive giving the player the choice to participate and create their own way through their different arcs.

2.3.1   Benefits of using video games as a learning process

The main benefits of using video games as a learning process [16] are the following:

1. Motivation.

2. Control.

3. Feedback.

4. Learning with errors.

5. Competition.

6. Collaboration.

7. Flexibility.

8. Sequencing of events.

2.3.2   Serious games

Video games that are used mainly for educational purposes are called serious games. Although some of them can be also amusing, they aim to encourage the player educate himself voluntarily in a non-conventional and, arguably, more fun way. A person has been proved to retain the knowledge successfully by analysing and deciding different actions to solve a problem. This is only achieved by being able to participate and solve a realistic scenario. Video games can offer just that, a huge amount of different real-life problems, ready to be solved by a player interactively. A few examples of possible actions in a serious game[4], offering many benefits in the learning process, are the following:

1. Role-playing.

2. Problem-solving.

3. Data analysis and evaluation.

4. Synthesis.

5. Collaboration.

6. Interaction.

7. Participation in the learning process.

8. Ability to change the given data if needed.

There are many types of serious games[4], used for educational purposes. Some of them are the following:

1. **Government games**

   Games aim to increase the organization skills and problem-solving of the player. Most of them are simulating a city or a region that needs to be ruled, or some extreme situations need to be faced (extreme weather conditions, a terror attack, etc.). These games make the player face serious moral issues and therefore understand and own the consequences of their actions.

2. **Corporate games**

   Games used for companies to test and advance a newcomer's skills in a more interesting and effective way. This gives a more complete profile of the employees and achieves the project assignments being corresponding to their abilities.

3. **Programming games**

   Games where the player interacts with the story by programming different characters to work a certain way. Although, the player's actions do not directly affect the plot, the way they changed a character's feature gives a different turn of the events.

4. **Advergames**

   Games used for the promotions of different products, ideas or organizations.

5. **Health games**

   Games used to help patients step away from their everyday life and feel better. They also help them to face chronic diseases. Furthermore, there are many video games created to help a person be more healthy, physically, socially and emotionally, containing small tasks per day for that cause. In this category, exergames are included. They are more active games, encouraging the player to perform different exercises (fitness games) during their day or interact with the plot physically (using movements displayed on screen etc.).

6. **Political games**

   Games aiming to convince the player about political issues through their agenda.

7. **Religious games**

   Games that promote a specific religion, without actively trying to change someone's beliefs.

8. **Art games**

   Games which emphasise on the art-style of the project. They aim to be original, with
   unique visuals, trying to captivate the player.

9. **Military games**

   Games used to educate newcomers with simulations of different scenarios. They in-
   crease the player' skills to multitask, synchronize his actions, identify and focus on a
   goal, collaborate with a team, take aggressive actions, act in stressful circumstances
   and desensitize of a human target.

10. **Educational games**

    Games used in classes to educate interactively.

This thesis focuses on the last category, the educational games, and more specifically the
ones that use narrative as the storytelling method.

2.3.3   Narrative-based educational video games

Narrative-based games offer an opportunity to redefine the conventional teaching methods[17].
In some cases, they can supplement or even replace textbooks as a medium of instruction.

These video games can involve decision-making, problem-solving, critical thinking and
communication, all very important and necessary factors in the learning process. Some of the
many benefits of using them for educational purposes are the following:

1. They are widely accessible online.

2. They can be very informative.

3. They engage many cultures.

4. They can be entertaining.

5. They offer a successful representation of events, similar to real-life experiences, like
   war, politics, social issues.

Therefore, narrative-based video games can be used as an unconventional method in order
to teach different subjects, such us:

1. Literature.

2. History[18].

3. Politics.

4. Social studies[19].

5. Mathematics.

6. Biology.

7. Art [20].

8. Medicine and Health[21].

9. Software engineering[22].

10. Language learning[23].

2.3.4   Visual novels in education

Visual novels are a form of interactive fiction[23][24]. They combine a narrative with static or animated illustrations and interactivity. They consist of text, backgrounds and dialogue boxes, and have a branching story with multiple possible endings, based on the choices the player[25][26]. Due to this elements, visual novels can be used extensively in education[27] if designed properly[28][29][30]. In order to achieve that, the following factors should be taken into account:

1. The student's capabilities.

2. The learning environment.

3. The learning goals.

4. The content.

5. The learning process.

6. The evaluation process.

The goal is coherence between the learning activities, the content, and the learning evaluation.

Chapter 3

Similar projects

In this thesis the game developed is an interactive visual novel, aiming to encourage players relate to the struggles of people with different ages and backgrounds.

3.1 Similar project analysis

Most educational visual novels aim to specifically be used for teaching purposes. Although this is sometimes necessary, it can betray the main purpose of using a video game as a learning tool, which is making the educational process fun and interesting. When students play video games that are made without the education as main purpose, they learn naturally the knowledge passed to them and retain it without trying.

Some examples of visual novels that have achieved what is discussed above are the followings[31]:

1. **Attentat 1942**

   Attentat 1942 is a historically-accurate Czech point and click adventure game with the story told through the eyes of World War 2 survivors. Moral dilemmas and existential struggles await the player on their way to discover the troubled past of their family. The plot was written by professional historians.

   The player takes the role of Jindřich Jelínek's grandchild. Jelínek was arrested by Gestapo after Reinhard Heydrich (ruler of the Nazi-occupied Czech lands and the leading architect of The Holocaust) was assassinated. The player should find the reason of this arrest along with the involvement that Jelínek had on the attack. Throughout the

15

investigation, they learn about the past of the family, interview different witnesses and
discover more about the life in Protectorate of Bohemia and Moravia[32][33].

Figure 3.1: Attentat 1942

2. **Golden threads**

   The player grows up in a village in southern China in the mid 1800s, but has to move
   overseas to New Zealand. They have to make real life decisions in this "choose-your-
   own" interactive narrative. The game was created with the partnership of the Auckland
   Museum and inspired by real historical figures and events[34].
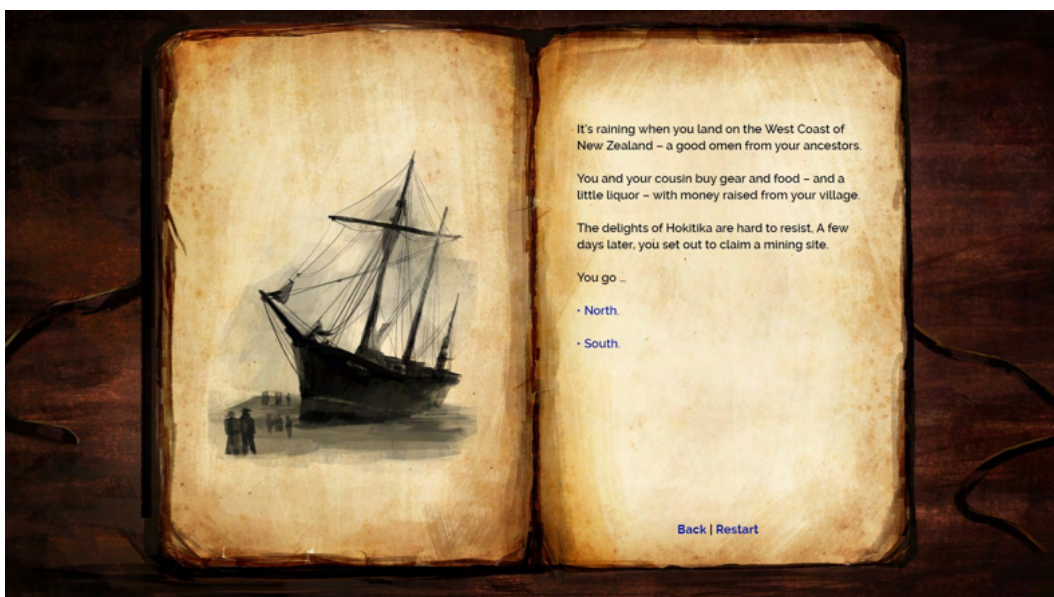
Figure 3.2: Golden Threads

3. **Grey plague**

   In year 2020 a mysterious disease has broken out. It is suspected to be a mutation of tuberculosis, a disease eliminated years ago. The player needs to save everyone from this disease, since they have the power to see people's internal organs. The game contains many information about biology. It is a visual novel with illustrations and interactive narrative[35].

Figure 3.3: Grey Plague

4. **Code romantic**

   Code Romantic is a computer science puzzle game wrapped in a post-apocalyptic love story. It contains code lessons of C# and programming concepts, based on the AP Computer Science exam and the curriculum of a college-level Computer Science I course. The Human defense department needs player's help in a last try to save the world. The brightest students should learn how to hack the brains of the machines attacking humanity. The player follows the story of Mina Lovelance, as she tries to follow successfully her mother's footsteps, while also not embarrass herself in front of her childhood crush, Leon[36].
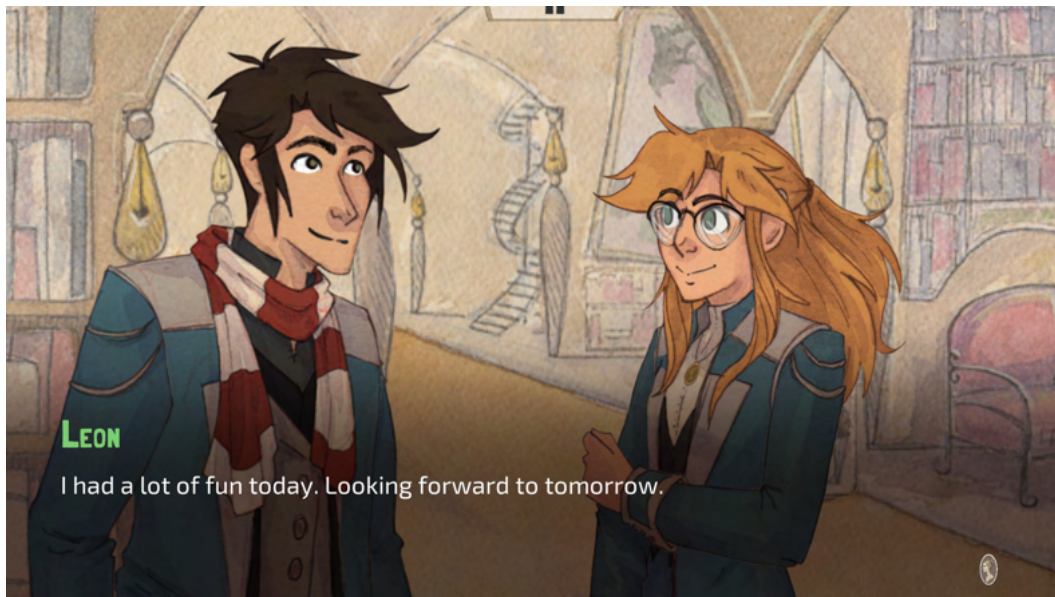
Figure 3.4: Code Romantic

3.2   How is this project different

This project is different from the above since it focuses on social issues and the struggles of the different stages in a person's life. No game is presenting the problems of different ages as its main theme. The game aims to provoke player's emotional intelligence by encouraging them to relate with each character. Also it is more of an anthology of small stories than just one continuing narrative, with many characters to empathize and get to know. This makes it possible to include many different struggles, backgrounds, hopes and dreams, and help the player relate with more than one story.

Also, the story, art and soundtrack used are fully original, attracting the attention of the player.

Chapter 4

Game design

4.1   Project description

"Sky of Lost Dreams" is a visual novel with original story, art and soundtrack. When all the stars disappear above a small town, the player is asked to become a night traveller and travel through each person's dream to make their biggest wish come true. After fulfilling a wish, a star returns to the sky, until all of them will light up the night again.

4.2   Game world

The story is placed in a little town near the sea. Each house has a character with a broken wish. The player is able to visit each character's dream and help him conquer his fears. Therefore, the game world is divided in the real world, containing the events happening in the small town and the dream world of each character where almost everything is possible.

4.2.1   The real world

The events of the story take place in a small town near the sea with stone buildings. There is a small port welcoming travelers on wooden boats. The streets are light up by old lamps and fireflies lead the way to the people in need. The stars in the night sky represent broken wishes and therefore disappear. Each star returns only when the wish of a person finally comes true!

Figure 4.1: The little town

4.2.2   The dream world

Every chapter contains a different dream, taking place in different world, reflecting the unique worries of each character. Achieving good ending in a person's dream makes a wish come true.

Figure 4.2: The rotten spaceship shattered in an unknown place

1. **Introduction chapter: Colors**

   This is more of an idea than a world. It is a space full of colors representing the experiences of the life ahead.

2. **Chapter 1: Shadows**

   A peculiar place with lost souls stuck between life and death. A spirit is holding the

gates between this world and the reality. The souls that need to escape should convince the spirit to let them go, presenting integrity and pure braveness.

3. **Chapter 2: The guardians of thunder**

   A place in the skies were travelers can reach with wooden boats floating among the clouds. Cloudy, mythical creatures protect the Thunder and the Sun sleeps behind a huge marble gate, getting out to rise every morning.

4. **Chapter 3: Flowers**

   The character's garden of emotion. There are talking trees and flowers helping and leading the way.

5. **Chapter 4: Voices**

   A room full of application forms and voices arguing.

6. **Chapter 5: A cup of coffee**

   In the beginning the world seems pixelled and every move seems preset. If the character escapes, they reach a colorful place with mountains and a calm sea.

7. **Chapter 6: The article**

   A strange place that is full of newspaper headlines, papers, abandoned new ideas and a distant paper house.

8. **Chapter 7: The staircase**

   A huge marble staircase representing every step of parenthood.

9. **Chapter 8: The mirror**

   A copy of the man's bedroom. In the mirror he reflects to his 10-year-old self.

10. **Chapter 9: Memories**

    A shiny path in the dark where the floating pictures keep the most beautiful memories of the old man's life.

4.3 Characters

Each person in the game is depicted as a shadow in order to be more relatable to each player, having also some characteristics to distinguish them from the others.

4.3.1   Introduction chapter: Colors

1. **Newborn child**

   The child is a newborn that is dreaming the colors of life.

4.3.2   Chapter 1: Shadows

1. **Boy**

   A 4-year-old boy that has a fear of shadows. His best friend is his favourite toy, the alien. He loves airplanes and the space and wants to become an astronaut one day.

2. **Alien**

   Boy's best friend. He is usually the hero but in the dream he is terrified and unable to take action.

3. **Spirit**

   The boy's biggest fear representing the shadows in his room. The spirit keeps the gate between life and death. It appears when the message of an old sign in an unknown planet is answered.

4.3.3   Chapter 2: The guardians of thunder

1. **Girl**

   The 8-year-old girl is a refugee trying to find a new home in the small town. She travels in a boat among others. Although, every one else has lost their hope to reach the shore the girl does not give up. In her dream, she is trying to find the sun, in order to convince him light up the sky again and defeat the storm.

2. **Teddy bear**

   Teddy bear is the girl's best friend and favourite toy. It is trying to help her not to lose hope in the difficult journey of finding the sun.

3. **Guardians of thunder**

   Guardians of thunder are mythical cloudy creatures protecting the skies from travelers and defending the storm.

4. **Sun**

   The sun sleeps behind a huge gate and communicates through inscriptions with the travellers, representing hope. The sun should be convinced to return to the sky and defeat the storm.

4.3.4 Chapter 3: Flowers

1. **Boy**

   A 12-year-old boy is in love with his friend, Lilly. In his dream he travels through the garden of his emotions in order to figure out his feelings and talks to her.

2. **Lilly**

   A 12-year-old girl in the same class with the boy. She is his love interest. The girl has long beautiful hair and moves with a wheelchair full of flowers.

3. **Trees**

   Trees are the boy's feelings talking to him in his dream.

4.3.5 Chapter 4: Voices

1. **Girl**

   An 18-year-old girl has to fill her university application. She tries to choose between a Physics, an Engineering or an Art university. In her dream, she has conversations with her inner voices, telling her the advantages and disadvantages of each option.

Figure 4.3: The girl in a room full of applications

4.3.6   Chapter 5: A cup of coffee

1. **Girl**

   A 25-year-old who works in an office is trying to escape from her routine. She realises how her life is not fulfilling and has to change it.

2. **Screen**

   Screen represents the routine in girl's life. She gives instructions on how to repeat the same things each day.

4.3.7   Chapter 6: The article

1. **Man**

   A 30-year-old man is a junior reporter. He is trying to convince his boss to trust him write his own article. Until now, he is only an assistant and can not produce his own work. The dream represents his fear of presenting his boss a new idea of an article the next day.

2. **Figure**

   The figure in the man's dream represents his boss at work.

4.3.8   Chapter 7: The staircase

1. **Parents**

   Being parents of a newborn, they have to face the fear of their child's future.

2. **Child**

   The child in the parents' dream is their newborn's future living the different experiences and difficulties of his life ahead.

4.3.9   Chapter 8: The mirror

1. **Man**

   A 62-year-old man is nervous since the next day is his last one at work. He wonders if he achieved what he was dreaming of in his life until that point and how he affected and inspired his loved ones. The dream he is having, is a conscious dream, representing an inner conversation.

2. **Boy**

   The boy in the mirror is the man's 10-year-old self. They discuss the matters that trouble the man, helping him become less nervous about his retirement.

4.3.10 Chapter 9: Memories

1. **Man**

   An 80-year-old man is sharing old memories with a shiny figure reminiscing the past. He is afraid of eventually being alone. He has two children and loves them very much.

2. **Shiny Figure**

   The figure represents the player who is willing to accompany the man in his journey of remembering the past. The goal is to help the man feel less lonely.

4.4 Story

One clear night all the stars disappear. Each star represents a broken wish. The player is asked to be a Night Traveler. He has to travel through each person's dream in the little town and help them make it come true. The game ends when every star is returned to the night sky and therefore, every wish is fulfilled.

The story follows ten characters, each character in a different age, with different worries and challenges according to their age and past. The goal is to contain every significant step of a man's life and the main worry of each age and reflect them in their dreams. From infant to adult, each character must face his worries to continue in his life leaving his biggest fear behind and achieving his goals. The story contains ten chapters (one introduction chapter and nine more), one for each character in the game.

4.4.1 Introduction chapter: Colors

A newborn baby is sleeping.

1. **Dream**

   Vivid colors fill the room, since we do not know if babies do actually dream. They represent the colors of the life ahead, happy or sad. An instruction box pops up to explain the gameplay and the player's role.

4.4.2   Chapter 1: Shadows

A 4-year-old boy is sleeping.

1. **Dream**

   The boy and his friend, the alien are travelling through space with their wooden airplane. The plane is shattered in an unknown place with peculiar figures and funny houses. A spirit appears when called by the boy and an interactive conversation begins. The player has to make the right choices in order to help the boy and the alien leave the place and be untouched.

2. **Reality**

   The boy wakes up, happy that he conquered his fear, the shadow. The boy's parents give to him a present, the same wooden airplane he was travelling in his dream.

4.4.3   Chapter 2: The guardians of thunder

The camera moves somewhere far in the sea.

1. **Dream**

   A girl and a teddy bear are travelling in a wooden boat among the clouds, looking for the sun. Guardians, dreamy cloud creatures get in their way. The player must help the girl and the teddy bear face the Guardians and convince the sun to rise again.

2. **Reality**

   The girl wakes up in a refugee boat that finally reaches the shore.

4.4.4   Chapter 3: Flowers

A 12-year-old boy is sleeping.

1. **Dream**

   The boy is lost in the garden of his emotions. The trees talk to him and help him understand why he is there. The player has to help him express his feelings to the girl in his dream.

2. **Reality**

   The boy talks with the girl in the school bus stop, and they plan to watch an episode of their favorite series together. He picks a flower to give it to her later.

4.4.5   Chapter 4: Voices

An 18-year-old girl is sleeping.

1. **Dream**

   The girl is in an empty room. Sheets of papers, application forms for universities, fall and fill the room, then stop. The girl starts hearing voices of three different opinions about the university she should choose (Physics, Engineering, or Art), arguing. The player is asked to help her make a choice.

2. **Reality**

   The girl sends the application to the chosen university.

4.4.6   Chapter 5: A cup of coffee

A 25-year-old girl is sleeping in the office.

1. **Dream**

   The girl is stuck in a pixel-ed room with a screen giving her directions of her next move. The screen asks her to follow her daily routine. The player should help the girl escape her routine and find the courage to search for new opportunities.

2. **Reality**

   The girl leaves the office, and she smiles to the sunrise since she finally achieved to escape her routine.

4.4.7   Chapter 6: The article

A 30-year-old man is sleeping.

1. **Dream**

   The man is walking on headlines of newspapers to reach a figure. He is trying to convince the figure to listen his idea about a new article he wants to write. The player should help him make his voice heard by his boss.

2. **Reality**

   The man finally manages to show an article he wrote to his boss.

4.4.8   Chapter 7: The staircase

Two parents sleep next to their newborn child.

1. **Dream**

   The parents reach a staircase representing their child's life among the years. The player is asked to help them face the challenges of being a parent in the different stages of their child's life.

2. **Reality**

   The parents look at their child and hug each other.

4.4.9   Chapter 8: The mirror

A 62-year-old man is sleeping. The next day is his last day at work.

1. **Dream**

   The man is getting ready in front of the mirror when he suddenly sees his 10-year-old self looking back at him. They start a conversation about the man's life. The player is a witness of a conscious dream and an inner conversation, after which the man is finally ready to face his last day at work.

2. **Reality**

   The man smiles at the mirror while wearing his coat and leaves, ready to face his final day at work.

4.4.10   Chapter 9: Memories

An 80-year-old man is sleeping.

1. **Dream**

   The man and a shiny figure are walking in a path with pictures flying around. Each picture contains a man's memory. They discuss the past. The player has to help the man feel less lonely.

2. **Reality**

   The man gets a visit from his children on his birthday, realizing he will never be alone.

4.4.11   Epilogue

Every star is returned to the sky since every wish is fulfilled. The player achieved to finish the game successfully.

4.4.12   Theme

The game can be either happy or sad and somewhat nostalgic, but it always gives a sense of fulfillment in the end of each chapter. It is about understanding one's struggles and helping them face their biggest fears. Since each character is in a different age, with different problems and goals, the player starts to empathize with the different ages and experiences. The goal is to help and understand rather than win a chapter.

4.5   Story's progression

In the beginning the main story is presented to the player. After that, there is an introduction chapter where the game mechanics and the goal are explained. Then, there are the nine chapters of the story where the player can interact by choosing different ways to continue. Finally, the game ends with an epilogue.

4.6   Gameplay

4.6.1   Goal

The goal of the game is to achieve a good ending in each chapter and therefore, return every star to the sky. The ending of each chapter depends on the choices the player made throughout the story.

4.6.2   User skills

The player should be able to empathize with each character and understand their needs in order to choose the correct choices and fulfill the character's purpose. The different plots are chosen by tapping on the screen.
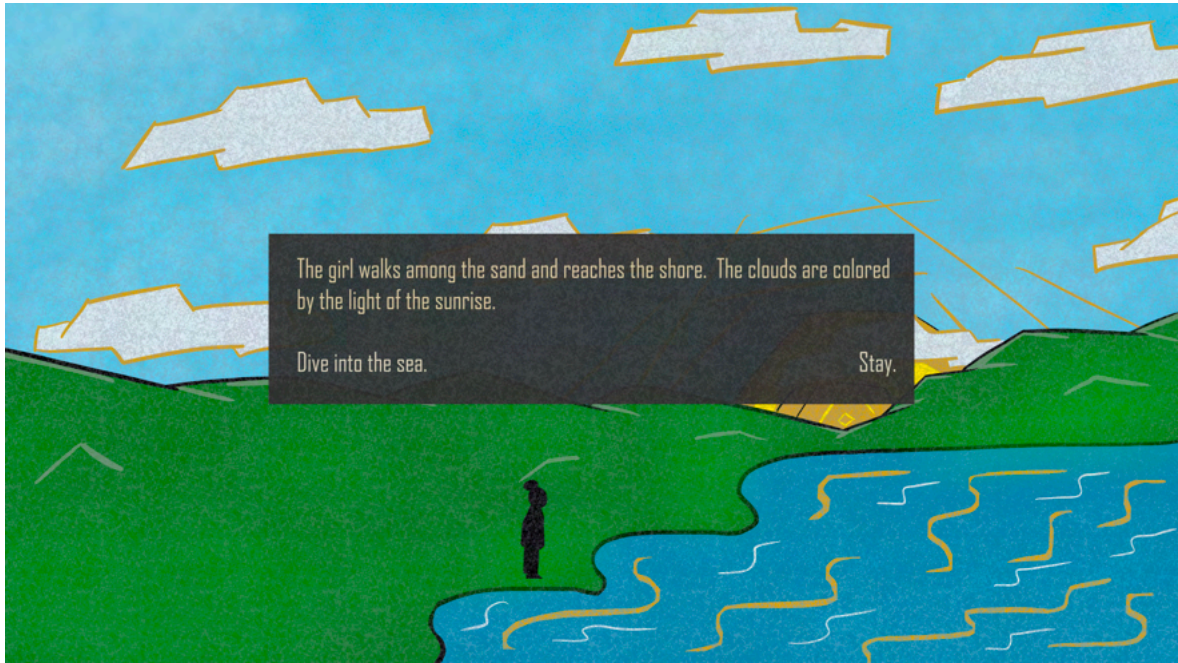
Figure 4.4: Enter Caption

4.6.3   Game mechanics

The game contains nine levels. Each level may have multiple storylines and more than one ending. Therefore the mechanic consists of multiple-choice decision points, where the player selects the direction of the plot. The story is presented in large storyboxes and the scenes are depicted with hand-drawn backgrounds and small animations. The experience of the player is close to that of reading a comic book.

4.6.4   Settings

The player has access to a setting's menu (through main menu or pause menu) containing the following options:

1. A volume slider.

2. A brightness slider.

3. Fullscreen option.

4. A drop-down with different resolution options.

5. A drop-down with different quality options.

4.6.5   Progression, challenge and losing

In order to progress to the story, the player will be asked to choose how to continue the story of each chapter having two or three different choices. A wrong answer may end with the player losing the chapter. Different answers affect the ending of the story. Stories may have (1) multiple endings where the player wins, (2) endings where the player may lose or win according to the choices made or (3) the same ending but different ways of reaching it.

There is no change on the difficulty level. Some stories may contain more interaction than others, but the gameplay is based more to the story than the interaction.

A wrong choice or combination of choices of the story's direction may end up with loosing the chapter and having to restart that story again.

4.6.6   Art style

The art style is original and hand-drawn. Each character is presented as a shadow with some distinguish features in order to be relatable with any player. The backgrounds are colorful and the color palette of each chapter aims to reflect the character's feelings.

The art-style is 2d and artistic with cartoon characteristics. The animations are simple and static, imitating the experience of reading a comic book. Some small movements are added when needed.
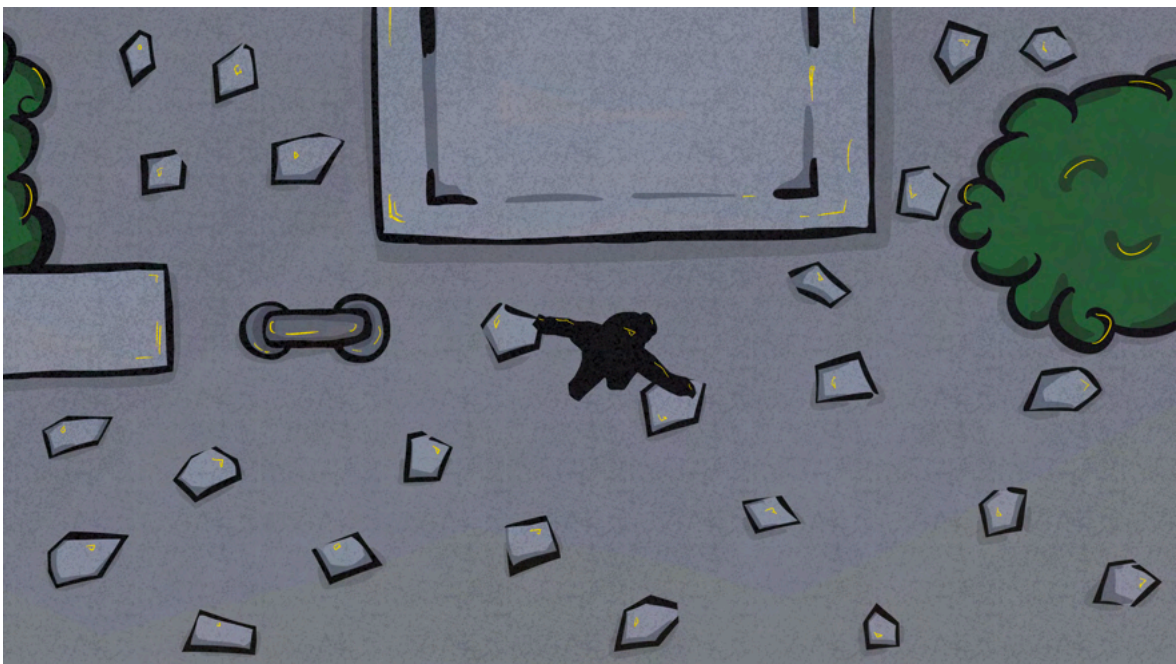
Figure 4.5: Enter Caption

4.6.7   Music and sounds

The music is also original (recorded by Panagiotis Papaefthymiou) and quite moody, following carefully each character and their worries and challenges. Every track is very simple in order to add to the story and emphasize on the narration. There are no sounds added. In this way, the game feels more like an interactive book than a classic video game.

4.6.8   Technical description

The game will be available for PCs with Windows, MacOS and Linux, and has no special requirements.

4.6.9   Demographics

The game can be played by anyone from 7-years-old children to adults.

4.7   Implementation

4.7.1   Implementation process

In order to achieve designing an educational storytelling game successfully, the following process [37] was used:

1. **Story planning**

   The main story idea was planned and the script was written.

2. **Pre-production**

   The concept art and the 2D sprites for the animation were created.

3. **Production**

   First, the main menu and settings menu was created, along with the main scripts for the UI elements used in the game. Then, the scenes of the game were created, one for the story, one for each chapter and one for the epilogue of the game. After that the sounds and some final animation clips were added.

4. **Post-production**

   The final project was tested on all the possible scenarios and any fixes needed were

added.

5. **Distribution**

   The game created was presented as a final product of the project.

4.7.2   Tools

The game was implemented using Unity Engine and was implemented with the following process:

1. The menus' options (main menu, pause menu, settings menu) were mostly programmed by simple scripts.

Figure 4.6: Main Menu

2. Everything else was achieved by using UI elements.

3. Large panels present the story and the choices and UI buttons are used for the interaction.

The script was written using Writer Duet, in order to use the existing formula of scriptwriting.

The concept art was created using Procreate for the illustrations and Adobe Photoshop for color correction and layering.

The animation was implemented using mostly sprites through Unity 2D Animator. When rigging was needed, Spine 2D was used.

The music was created using FL Studio.

Figure 4.7: Quit button dialogue pop-up

Chapter 5

Game's script

This chapter includes the visual novel's script. The script contains ten chapters (the introduction and nine more). Each chapter follows the story of a different character, as mentioned before.

5.1   Elements of a complete script

In order to achieve a completed story-line for each chapter and throughout the game, the script had to feature the following elements[38]:

1. **Character**

   Each different story-line should have a relatable protagonist with his own problems, needs, dreams and goals.

2. **Want and need**

   These are the elements that define the protagonist. Without them the story would be boring and without a purpose.

3. **Plot**

   Plot includes the events and actions defining the rest of each hero's journey.

4. **Structure**

   Structure defines when the events of the plot will occur, in order to have continuance to the story and create a unified whole. In other words, structure defines the timing, giving a beginning, a middle and an end to each story.

5. **Conflict and resolution**

   Plot creates tension, which keeps the player interested in the events featured. Introducing conflict and tension to each story drives the protagonists develop their characters and reach resolution in the end.

5.2   The format of the script

Since the narrative is interactive, the script contains all the possible arcs of the plot. The sentences written in italic represent the choices the player has in the game enumerated. Each arc continues after the corresponding number of the chosen sentence.

The script was written using WriterDuet, a script-writing tool, in order to maintain the standard format used for any similar production.

The basics of script formatting [39] are the following:

1. The font size used is 12-point Courier.

2. There is 1.5 inch margin on the left of the page.

3. There is 1 inch margin on the right of the page.

4. There is 1 inch on the of the top and bottom of the page.

5. Each page must have approximately 55 lines.

6. The dialogue block starts 2.5 inches from the left side of the page.

7. Character names should have uppercase letters and start 3.7 inches from the left side of the page.

8. Page numbers are in the top right corner with a 0.5 inch margin from the top of the page.

9. The first page should not be numbered.

10. Each number is followed by a period.

This basics are used in order to be able to calculate the production cost of a project. One page is corresponding to one minute on screen.

5.3   The game script

The following pages include the game script in the format analysed above.

Sky of Lost Dreams

written by

Dimitra Papaefthymiou

papaefthymiou.dimitra@gmail.com

STORY

EXT. THE CITY - NIGHT

The lights are on and shining. Some light comes from the open
windows. Wind is blowing through the empty streets.

                    STORY BOX
          The night when dreams were lost

INT. INSIDE A ROOM BEHIND THE WINDOW - NIGHT

A boy is looking out of a window as the stars are slowly
disappearing from the sky. We can only see the back of his
head. He sighs and the curtain near him is blown by a strange
wind that goes through the window.

                    STORY BOX
          the stars went out.

EXT. OUTSIDE THE WINDOW - NIGHT

The boy is watching the sky and the city is becoming darker
and darker.

                    STORY BOX
          With no more hope left to the town

EXT. SKY - NIGHT

                    STORY BOX
          Someone has to stand up against the
          Fear, returning each broken wish...
          each lost purpose... It has
          happened before and it will happen
          again, but as soon as the Night
          comes, dreams get fulfilled and the
          stars return, lighting up the
          darkness.

*Skip the last scene and see the map of the city. A house is
shining.*

                    INSTRUCTION BOX
          Tap continue.
          If continue is tapped a box opens:
                    (MORE)

                    INSTRUCTION BOX (CONT'D)
          Introduction: Colors
          Click continue

INTRODUCTION CHAPTER: COLORS

INT. NEWBORN'S BEDROOM - NIGHT

An newborn is laying in a crib in the bedroom filled with
toys. The child can be seen sleeping peacefully.

Suddenly colors fill the atmosphere until nothing else is
seen.

                    STORY BOX
          Since nobody knows if babies do
          actually dream... Let's assume for
          a moment that they dream about all
          the beautiful colors of life...
          happy or sad... just to be prepared
          for what is coming...

                    INSTRUCTION BOX
          Your goal, night traveler, is to
          travel through each person's dream
          in this little town, and help them
          make it come true! Kind of... and
          yes... return each lost star to the
          sky... So, here is your first one!

The colors slowly disappear leaving nothing... the little
town map pops up. A star appears to return in the night sky
starting from the home where the baby is sleeping. The player
can see all the small houses, the sea below and the lights
this time lead to another home with another small wish.

                    INSTRUCTION BOX (CONT'D)
          Tap continue.
          If continue is tapped a box opens:
          Chapter 1: Shadows
          Click continue

CHAPTER 1: SHADOWS

INT. CHILD'S BEDROOM - NIGHT

A four-year-old boy is sleeping. The room is filled with toys
(cubes, toy cars, a spaceship, an astronaut) and a little
alien toy stands out next to the bed.

EXT. OUTER SPACE (THE SURFACE OF AN UNKNOWN PLANET) - NIGHT

A wooden plane is shattered on the surface of a planet. The
boy steps out with his friend, the alien, all alone on a
planet with strange figures wandering around and funny houses
in the background. They look around. A sign seems to stand
out amidst the fog. On the obsolete sign a message is
written:

"Here you can find all the answers... Only if you are brave
enough."

The boy and the alien seem worried.

>   BOY
>   Yes!

The boy whispers and the alien looks at the kid, frightened
by the answer.

>   ALIEN
>   Are you sure?

Unfortunately, the answer is given and the spirit of the sign
reveals itself. Somehow beautiful and dreamy but also
terrifying, it approaches the little boy.

>   SPIRIT
>   So, what is your question little
>   human?

Its voice resonates in the emptiness of the street. The
shadows hide and the fog starts moving slowly.

>   BOY
>   *1) How... How do we get back home?*
>   *2) What is this place?*

>   SPIRIT
>   1) The real question is how you
>   arrived here in the first place.
>   You arrogant humans! You thought
>   you could conquer the universe!
>   (MORE)

                    SPIRIT (CONT'D)
          Who do you think are the pathetic
          shadows wandering around? A
          friendship with an alien will not
          save your soul, little human! The
          question is what are you willing to
          sacrifice?
          2) Ha ha ha! Oh, I will let you
          have a guess, little human! Life,
          Death, or what lies in between? The
          last one is the scariest of all and
          the one that is closer to the
          truth! You see, your fellow
          captains are still trying to find
          their way out! That's right! The
          pathetic shadows creeping around!
          So, little funny thing, are you
          pure enough to be left untouched?

                    BOY
          1) Are we... d... dead?
          2) I will give you anything to get
          out! ANYTHING! I AM BRAVE!

1,2) The alien looks petrified and can not really talk.

                    ALIEN
          1,2) D... Death... L... Life...
          The... s... shadows...

                    SPIRIT
          1) You are definitely close to
          death... Look around you!
          2) You still haven't heard what I
          am asking... How can you be so
          sure?

                    BOY
          1) No! We have to go back! There
          must be a way! We can't die here!
          2) How do we get out of here!

                    SPIRIT
          Well... Only one of you can get
          out! The choice is yours.

                    ALIEN
          We... we don't have to do this!
          There must be another way!

     Three choices appear:

     3) Turn around to fight the alien.

4) Turn around to fight the monster.

5) Sacrifice.

Endings:

3) The boy turns against the alien, but before he attacks the spirit becomes enormous and starts laughing.

>   SPIRIT
>   You would attack your own friend.
>   Is this bravery for you? You little
>   creature, YOU SHALL STAY HERE
>   FOREVER TO THINK ABOUT YOUR OWN
>   MISTAKES! Humans say that children
>   have the purest hearts... What a
>   shame!

The spirit becomes bigger and surrounds the little boy.

>   INSTRUCTION BOX
>   You lost! You were unable to
>   conquer the boy's worst fear! But
>   do not give up... The boy needs
>   you!

4) The boy runs towards the spirit screaming!

>   SPIRIT
>   How dare you!

The spirit becomes bigger and surrounds the boy.

>   SPIRIT (CONT'D)
>   Arrogant little creature! You
>   really thought you could attack the
>   one that keeps the gate between
>   death and life? You shall join your
>   little friends and follow them
>   around in a continuing search for
>   the way out... You seem a little
>   pale... Hahaha!

The boy starts fading away.

>   BOY
>   No! Let me go! I should...

Nothing is left but a little shadow, too weak to speak.

                        INSTRUCTION BOX
              You lost! You were unable to
              conquer the boy's worst fear! But
              do not give up... The boy needs
              you!

5) The boy carefully approaches the spirit. The spirit
becomes bigger and bigger and slowly surrounds the boy.

                        SPIRIT
              What will it be then, little human!

                        BOY
              So t... take me... Let my friend
              go, as you promised.

The boy takes off his jacket and ties it around his neck like
a cape. Then takes a deep breath and waits.

                        SPIRIT
              Congratulations, my boy! Seems like
              there might be a chance for humans
              after all. You shall continue your
              journey and remain brave and
              wonderful as you are now. Growing
              up, people tend to lose their
              colors. It takes courage to be your
              own hero sometimes. It also takes
              courage to save your hero if
              needed.

The spirit nods to the alien and becomes smaller. The boy
turns around and sees that the plane is ready to go. He bows
to the spirit, takes the alien's hand and heads to the
spaceship.

                        INSTRUCTION BOX
              Seems like you found the boy's
              biggest fear and helped him conquer
              it... The shadow!

The next day, the boy wakes up and sees a present in the
middle of the room waiting for him. He runs towards the
present and opens it. His parents approach the door happily.

                        PARENTS
              Do you like it?

                        BOY
              It's the best! Thanks mum... dad...

The boy lifts his little toy plane. The same plane in which
he was travelling in his dream the previous night.

He takes the alien and puts on his "cape". Then starts
running around the room playing.

>   INSTRUCTION BOX
>   Congratulations! The first star can
>   return to the sky, since the boy
>   found his courage! But most of the
>   stars still remain unseen...

The city map appears, the first star returns to the sky! The
star flies over the houses and finds its place in the night
sky.

>   END OF CHAPTER 1

Three fireflies fly from the boy's home to the street light
near the sea which lights up.

>   INSTRUCTION BOX (CONT'D)
>   Tap continue.
>   If continue is tapped a box opens:
>   Chapter 2: The Guardians of Thunder
>   Click continue

CHAPTER 2: THE GUARDIANS OF THUNDER

EXT. THE PORT - NIGHT

The sea is calm and silent. The camera is flying above the
waves and goes far into the ocean, then it gets dark.

EXT. SKY - NIGHT

A small wooden boat is moving slowly across the skies among
the clouds.

A little girl and a teddy bear are sitting in the boat and
look worried.

>   GIRL
>   I can't see the sun.

>   TEDDY BEAR
>   The sun was lost long ago, my dear.

The wind blows harder and harder.

>   GIRL
>   We won't make it! We need the sun!

Guardians (dreamy cloud creatures) start showing up in the
clouds, holding wooden sticks. They run against the small
boat, attacking harder and harder by bending the wind.

                    GIRL (CONT'D)
          STOP I need to go Home!

One of the Guardians comes closer and his deep blue eyes turn
black.

                    GUARDIAN
          There is no Home for you here,
          little girl. You should leave. The
          wind will continue to blow, the sun
          will never rise again. The people
          here will not accept you. And the
          sea... The sea is hungry today.

The Guardians got ready to attack.

                    GIRL
          1) Please, I need to find the sun.
          I promised my mother I would.
          2) I guess we have no choice,
          teddy.
          3) Leave, or we will attack.

1) The Guardians start moving closer. The teddy bear comes
protectively in front of the girl. The First Guardian
approaches.

                    GUARDIAN
          Didn't you hear what I said, little
          girl. There is no Home for you
          here.

                    TEDDY BEAR
          We are not leaving until we find
          the sun!

                    GUARDIAN
          Your choice then. Attack!

The Guardians start attacking the boat. The boat is shattered
in the skies while the girl and the teddy bear fall in the
clouds.

                    TEDDY BEAR
          GO! I will slow them down.

                    GIRL
          NO! I can't lose you, too. Please!

                         TEDDY BEAR
               GO!

Two options appear:

4) Leave.

5) Stay.

Endings:

4) The Guardians attack and the teddy bear faces them.

The girl runs among the clouds as fast as she can and reaches
a peculiar door. The door is locked. The shape changes and a
question appears.

                         DOOR
               You are disturbing my sleep! What
               is it that you are seeking?

                         GIRL
               I... I need to go Home... It's too
               dark and the wind won't let us
               reach the shore. I... I 've heard
               stories.

                         DOOR
               So you are another traveler... I
               see...

                         GIRL
               It's not just me.

                         DOOR
               It is never just one person, is it?
               I will try to convince the Night to
               become lighter today. The Hate in
               the place you are reaching is
               unimaginable. It turned the night
               darker, the wind stronger. However,
               there are little sparks of hope. I
               can see them in your eyes. Why are
               you alone, little girl?

                         GIRL
               I... Everybody else has given up.
               There was no help. We are stuck in
               the middle of the sea.

                         DOOR
              I respect your will to survive. I
              also respect their will to let go.
              But, that will not happen today. I
              will help you. You may go back.

The door opens and the sun appears, rising slowly and
defeating the darkness. The Guardians, who until then had
come really close to the girl, run away and disappear in the
clouds.

The girl runs towards where the boat was to find her friend,
the teddy bear. When she reaches the spot where they were
before, she finds her friend laying down. She stops and stays
still. She does not want to approach and have to face her
biggest fear.

                         GIRL
              My friend... Are you okay? I... I
              am here.

The teddy bear does not move. She approaches slowly and
kneels down to hug him.

                         GIRL (CONT'D)
              The sun... the sun rises again...
              Please, get up... We need to go...
              please... we have to go... I'm not
              leaving you here...

She holds him tight and starts crying. The sunrise lights up
the skies slowly.

                         INSTRUCTION BOX
              It seems like you managed to help
              the girl reach the sun. Although a
              terrible loss has taken place for
              the girl, sometimes you cannot
              prevent the worst from happening.
              Hopefully, the journey for her does
              not end there. So, lets see what
              you have achieved, fellow
              traveler...

EXT. REFUGEE BOAT - MORNING

The girl wakes up in a refugee boat filled with people.
Everyone is scared and everything seems uncertain. The little
girl looks around... the little teddy bear she was holding is
not there anymore. She sheds tears and lifts her head softly,
looking at the clouds and hoping to see her friend. Nothing.
She looks away as far as she can. Little lights starts
welcoming them.

                         GIRL
                 Lights... LIGTHS!

                         PEOPLE
                 LIGHTS! Lights... we did it.

They start hugging each other.

The boat reaches the shore. And somewhere deep in the sea...
the teddy bear is laying, happy that it played its part and
accompanied the girl on her most important journey... her
search for a safe home.

The city map reappears. This time a little boat rests on the
shore. A star returns to the sky.

5) The Guardians attack. The little girl resists along with
the teddy bear holding their ground. The guardians start
bending the wind with their wooden sticks. The wind blows
away the girl and the teddy bear. They fall hard in the
clouds.

The teddy bear stops moving.

                         GIRL
                 My friend! My friend, wake up...
                 they're coming...

Another Guardian blows wind towards the girl.

                         GIRL (CONT'D)
                 NO! Please...

She is blown away again.

                         INSTRUCTION BOX
                 You lost, night traveler. Sometimes
                 you have to let go in order to
                 reach your goal. Now go back and
                 try again. Maybe this time you will
                 make it to the sun.

2) The little girl and the teddy bear start to move back. The
sky darkens and the wind blows harder.

                         INSTRUCTION BOX (CONT'D)
                 You lost, night traveler. The girl
                 lost her hope. You may try again!

3) The girl and the teddy bear leave the boat and attack the
guardians. The guardians blow the boat away. The pieces hit
the girl and the teddy bear. They fall down.

                              GIRL
                    Wait! Please!

The guardians blow wind again. The girl and the teddy bear
are thrown away.

                         INSTRUCTION BOX
                    You lost, night traveler! You shall
                    try again without attacking the
                    guardians.

                                        END OF CHAPTER 2

EXT. CITY MAP - NIGHT

Three fireflies leave the shore and fly to the next house
with the next dream.

                         INSTRUCTION BOX
                    Tap continue.
                    If continue is tapped a box opens:
                    Chapter 3: Flowers
                    Click continue

CHAPTER 3: FLOWERS

INT. BOY'S BEDROOM - NIGHT

A 12-year-old boy is sleeping in his bed. Comic books are
scattered on the floor. A skateboard and a bike are in the
room. There are a pc and speakers on the desk and many books
around.

EXT. GARDEN - SUNSET

The boy walks in a huge garden filled with flowers and trees.

                              BOY
                    1) Where... where am I?
                    2) Is anyone here? Hello!

1) The trees move slightly and look at the boy.

                              TREES
                    The garden of your emotions. You
                    seem very confused. Are you
                    searching for someone?

> BOY
> *3) What? What emotions?*
> *4) I... I am not sure...*

3) The trees move slightly again.

> TREES
> Your feelings... The feelings you
> hide deep inside.

> BOY
> I don't understand...

4)

> TREES
> A girl passed by a little while
> ago. She had gorgeous long hair
> and...

> BOY
> the most beautiful smile... But it
> can't be...

2)

> TREES
> Hello little boy!

> BOY
> Are... are you talking to me?

> TREES
> Do you see anyone else around?

> BOY
> Am I losing it?

> TREES
> Relax boy! You are in the garden of
> your emotions... You are here to
> face your true feelings.

> BOY
> What?

2,3,4)

The boy looks away for a moment...

> BOY (CONT'D)
> What? Is that... Lily?

The little girl was moving away in her wheelchair.

                    BOY (CONT'D)
          Lily... LILY wait!

Lily stops and turns around.

                    LILY
          Are you here, too?

                    BOY
          Yes... apparently! So... we are
          both here then!

The boy seems nervous. He looks at the trees but nothing
moved.

                    BOY (CONT'D)
          Funny...

                    LILY
          What?

                    BOY
          Nothing... I thought... hmmm...
          nothing haha... How... How are you,
          then?

                    LILY
          Good! We talked after school
          though, didn't we? Why are you
          being so weird?

                    BOY
          I... I am fine! Do you want to go
          for a walk? You know... since we
          are both here...

                    LILY
          Sure, I guess. It's beautiful.

                    BOY
          Yes it is!

The two of them set off. They reach a place where they could
stop for a while.

                    LILY
          So... Do you want to sit down?

                    BOY
          Ahhh... Yeah, sure.

The boy sits on a rock.

                    BOY (CONT'D)
          5) You look beautiful tonight... I
          mean generally speaking... You
          always do... I mean...
          6) Truth is I wanted to tell you
          something yesterday...

5)

                    LILY
          Thanks, you're cute too!

                    BOY
          Am I?

                    LILY
          Yes haha...

                    BOY
          Uhm... Thanks!

The boy turns around and picks a flower. He gives it to Lily.

                    LILY
          Oh... it's lovely! Thanks...

                    BOY
          Do you... would you like to hang
          out more? Like... more than friends
          maybe... I do not know... maybe
          it's a bad idea...

                    LILY
          Yes, okay!

                    BOY
          Oh... Okay then.

Lily comes closer to the boy and takes his hand... They both
laugh and stay there watching the view.

6)

                    LILY
          Oh... okay.

                    BOY
          Well, I think I like you and...

                    LILY
          I like you too!

                    BOY
          Oh... Really?

                    LILY
          Yes, really...

They laugh.

                    BOY
          So, this was easier than I
          expected. Uhm... So... can I hold
          your hand?

                    LILY
          Sure! Okay...

The boy reaches for Lily's hand and they sit there watching
the view.

5,6)

                    INSTRUCTION BOX
          Congratulations, my dear traveler.
          You have helped the boy shape his
          feelings.

EXT. SCHOOL BUS STATION - MORNING

Lily reaches the stop.

                    BOY
          Hi! Uhm... How are you?

                    LILY
          Good! I was watching this series
          you told me about...

                    BOY
          It's a good show, isn't it?

                    LILY
          Yesss... Great show!

                    BOY
          So... Would you like to... uhmm...
          watch the next episode with me?

                    LILY
          Sure! Is seven o' clock fine?

                    BOY
          Yes, great. I mean... It's fine.

The school bus reaches the bus stop. The boy grabs a flower next to the stop and put it in his bag.

                                                END OF CHAPTER 3

EXT. CITY MAP - NIGHT

Three fireflies leave the last house and fly to the next house with the next dream.

                    INSTRUCTION BOX
          Tap continue.
          If continue is tapped a box opens:
          Chapter 4: Voices
          Click continue

CHAPTER 4: VOICES

INT. GIRL'S ROOM - NIGHT

A girl around 18 is sleeping in her bed. Books and papers fill the room. There is a laptop, a pair of headphones and a smartphone on the desk. The wall is covered with posters.

INT. EMPTY ROOM - NIGHT

                         GIRL
               Hello? Hello?

Sheets of paper start to fall and fill the room. The girl starts panicking.

                      GIRL (CONT'D)
               What's happening? Help! Stop! STOP!

The sheets of paper freeze and fall down. She tries to read them. Every piece of paper is an application form for a different university. The girl starts to hear voices talking.

                        VOICE 1
               Physics... Physics is good... You
               used to like physics when you were
               younger... Astronomy... Remember?

                        VOICE 2
               But no career prospects. You will
               go there, study hard, and may end
               up being a teacher. How about
               Engineering?

                    GIRL
1) Uhm... I don't think I like...
2) Hmmm I guess engineering is more
stable...

                    VOICE 2
1) It's a good university. It
offers stability. What more can you
ask for?
2) Exactly!

                    VOICE 3
1,2)How about Art? You have been
drawing and painting since forever.

                    GIRL
3) That's nice...
4) I don't know If I can manage
uncertainty in my life.

                    VOICE 2
3) And offers a completely
uncertain future. Do you want to
depend on your parents your whole
life? I'm telling you! Engineering!
4) Yes! You need something steady
to begin with... The rest can come
after a good degree. Engineering...

                    VOICE 1
3,4)Physics!

                    VOICE 3
What about your dream?

                    GIRL
5) I don't want to depend on my
parents my whole life... I need
something steady for now... Maybe
later...
6) Maybe it's time for me to be
brave enough and choose what I
love...

                    VOICE 3
5) What if there is no later? You
are signing up for a boring life
here... You always liked something
more meaningful...
6) Yes! Do something you care
about! Do something meaningful!

                    VOICE 2
          5,6) Excuse me... Isn't Engineering
          meaningful? You can fix pretty much
          anything! People would never have
          progressed without it...

                    VOICE 1
          What? Physics did the hard work
          here! Are you kidding me?

                    GIRL
          I don't know... I've always
          preferred theoretical science to be
          honest... There is more
          imagination...

                    VOICE 2
          Imagination won't help you pay the
          bills, though.

                    VOICE 3
          I think we all know what you want
          deep down... The question is are
          you brave enough to choose it?

                    VOICE 2
          It's not bravery here. It's common
          sense.

                    GIRL
          I... I... Everybody stop!

                    VOICE 1
          Just... Just have in mind...
          Physics is in the middle... It
          represents the best of both worlds.
          Imagination and something more
          secure...

                    GIRL
          But... If I am not going to study
          my first choice... Why would I sign
          up for something that isn't even
          THAT steady?

She looks at three applications on the top.

7) Choose Physics.

8) Choose Engineering.

9) Choose Art.

7) She picks the application for a Physics University.

                    GIRL (CONT'D)
          I guess I will go with my childhood
          dream... Who knows? Maybe I will
          end up working on a space
          station... haha!

8) She picks the application for an Engineering University.

                    GIRL (CONT'D)
          Hmmm... I guess I need something
          steady for now. Just to start... I
          mean... Isn't there game
          development as a course or
          something? Maybe I could use my art
          there...

9) She picks the application for a University of Fine Arts.

                    GIRL (CONT'D)
          I tried very hard to be who I am. I
          think I owe it to myself... to try
          leading the life I've always
          dreamed about!

7,8,9)

                    INSTRUCTION BOX
          So, night traveler... You helped
          the girl take a big decision. Hope
          you chose wisely.

INT. ROOM - MORNING

The girl wakes up and opens her laptop. She takes a deep
breath and sends the application.

                    GIRL
          Aaand... sent!

                                        END OF CHAPTER 4

EXT. CITY MAP - NIGHT

Three fireflies leave the last house and fly to the next
house with the next dream.

                    INSTRUCTION BOX
          Tap continue.
          If continue is tapped a box opens:
          Chapter 5: A cup of coffee
          Click continue

CHAPTER 5: A CUP OF COFFEE

INT. OFFICE - NIGHT

A 25-year-old is sleeping with her head on top of her laptop on the desk. Paperwork and notes everywhere. The rest of the office is empty.

INT. PIXELED ROOM - UNCERTAIN HOUR

The girl walks across a pixeled room.

                    GIRL
          It can't be...

There is a screen in the room.

                    SCREEN
          Welcome to your everyday routine my
          dear... Coffee?

A pixeled cup of coffee appears in the desk.

                    SCREEN (CONT'D)
          No breakfast! I know! And then rush
          to work... Although, now you are
          already at the office...

                    GIRL
          Wait... What?

                    SCREEN
          It is true... that is your routine!
          And after that, lunch!

A pixeled lunch appears on the desk.

                    GIRL
          Hey stop! I need to get out!

                    SCREEN
          You will get out after your
          dinner... And then start all over
          again!

A smiley face comes up on the screen.

                    GIRL
          What? No... No... I do more than
          that...

                    SCREEN
          You're right... Sorry... How could
          I forget? You put on your suit and
          leave... And the next day another
          suit... Seven suits for seven
          days...

Seven pixeled suits appear in the chair.

                    GIRL
          That's not... Is this my life?

                    SCREEN
          Of course, my dear! A good life! A
          smart life! An easy life!

                    GIRL
          What have I done? I need to get out
          of here!

                    SCREEN
          Well put on the suit, then!

                    GIRL
          NO!

                    SCREEN
          Put on the suit, my dear! Then you
          can go...

1) *Put on the suit.*

2) *Smash the screen.*

3) *Leave.*

1) The girl reaches and puts on the first suit.

                    SCREEN (CONT'D)
          Well, good! You look nice! Same
          routine as always!

                    GIRL
          Okay so now I can leave... Wait...
          Why can't I go?

                    SCREEN
          Now you go to the desk...
          Everything is here now. Everything
          is close.

                    GIRL
          No! LET ME OUT!

                         SCREEN
                I am sorry but this is your
                routine.

                         INSTRUCTION BOX
                You lost, my friend! You did not
                help the girl escape her routine.
                You may try again!

2) The girl runs towards the screen and smashes it!

                         SCREEN
                Wait... You cannot! NO!

The screen makes a strange noise and then breaks. The world
around the girl starts to break, too.

                         GIRL
                No, this cannot be happening...
                HELP!

The floor corrupts and the girl falls into the void.

                         INSTRUCTION BOX
                You lost! Attacking the screen and
                the world the girl built around her
                is not a solution. The girl has to
                find ways to get out of her routine
                without destroying her whole life
                and starting over.

3) The girl tries to escape through the door but the door
does not open.

                         SCREEN
                I told you! You already are where
                you are supposed to be!

The girl then turns towards the coffee.

                         SCREEN (CONT'D)
                No! Put on the suit first! The
                suit!

The girl takes the cup and pours the coffee to the ground.

                         SCREEN (CONT'D)
                Wait! What are you doing.

The place where the coffee is spilled becomes colored. The
girl moves to that place and she falls in a colorful world.

                         SCREEN (CONT'D)
                NO! How could you?

The girls walks among the sand and reaches the shore. The clouds are colored by the light of the sunrise.

3) Dive into the sea.

4) Stay.

3) She takes a deep breath and dives into the sea.

>   INSTRUCTION BOX
>   Congratulations! You managed to
>   give the girl courage to break her
>   routine and start a new life full
>   of possibilities.

INT. OFFICE - SUNRISE

The girl wakes up and realizes she is still in the office. She takes off her tie, leaves it in the office and storms out. The weather is beautiful that day. She smiles into the sky. It 's the sunrise.

4) The girl sits on the shore.

>   INSTRUCTION BOX
>   You lost. You managed to break the
>   routine but remained unwilling to
>   move forward. Life takes courage to
>   change things. Try again.

>   END OF CHAPTER 5

EXT. CITY MAP - NIGHT

Three fireflies leave the last house and fly to the next house with the next dream.

>   *INSTRUCTION BOX*
>   *Tap continue.*
>   *If continue is tapped a box opens:*
>   *Chapter 6: The article*
>   *Click continue*

CHAPTER 6: THE ARTICLE

INT. BEDROOM - NIGHT

A 30 year-old man is sleeping in his bed. There is a desk
full of paperwork, newspapers everywhere and a laptop that is
still open.

EXT. ROOM OF HEADLINES - DAY

The man walks on headlines of different newspapers. He sees a
figure very far away.

                    MAN
          Hey! HEY!

The figure continues walking further and further.

                    MAN (CONT'D)
          Boss! I have an idea... I...

The man starts running, but does not seem to be able to catch
up with the figure. The letters start falling and he falls
down with them.

A sea of papers lies beneath the headlines.

EXT. SEA OF PAPERS - DAY

The man floats on the surface of the sea.

                    MAN
          No... Not this time.

1) The man dives deeper.

2) The man starts swimming as fast as he can.

1) The man dives deeper and reaches the bottom of the sea.
There are papers of new ideas sunk and waiting to be saved by
someone brave enough. He catches the papers and reaches the
surface.

                    MAN (CONT'D)
          Hey! I have an idea!

He moves the pack of papers above the surface of the sea. And
the sea starts to disappear.

He can now walk on what was the seabed. He reaches a small paper house. The figure is inside.

                    MAN (CONT'D)
          Sir, I have some ideas about the
          article.

                    FIGURE
          We talked about this. You are a
          junior. You are supposed to help
          your supervisor. If I need new
          ideas, I will let you know.

                    MAN
          But sir...

                    FIGURE
          Do not push your luck, boy.

                    MAN
          3) I am sorry. I will leave. Thank
          you for your time.
          4) Okay, sorry. Just... take a
          look. Whenever you have time. Thank
          you for meeting up with me.
          5) But, it is good. It is what we
          were talking about. Just... Just
          take a look. It is not finished yet
          but the main idea is clear.

3) The man leaves and sinks slowly to the ground.

                    INSTRUCTION BOX
          You lost, night traveler. You never
          managed to help the hero present
          what he has to say. He will never
          be able to show his potential
          without speaking up.

4)

                    FIGURE
          I will have a look. But do not
          expect much out of this.

                    MAN
          6) Thank you, sir. I really
          appreciate it.
          7) It is good, sir. It is what we
          were talking about.

                    FIGURE
          6) Alright... I will have a look,
          now.
                    (MORE)

                    FIGURE (CONT'D)
          Just because you are so polite.
          Take a seat!
          7) Yes. I can see that. Okay,
          kid... I will let you know.

5,6) The boss looks at the paper.

                    FIGURE (CONT'D)
          Hmmm... Nice perspective. I guess I
          could let you finish this one and
          put it among the others on the
          editorial page. Nice job!

                    MAN
          Thank you... Thank you, sir.

                    INSTRUCTION BOX
          Very good, night traveler. You
          managed to help the man convince
          his boss to have faith in his work.

INT. OFFICE - MORNING

                    MAN
          Sir! I know you told me not to...
          But I brought some new perspectives
          on what we were talking about
          yesterday.

                    BOSS
          You are stubborn, but I appreciate
          your extra work. Let me have a
          look.

7) The man walks out of the office and his world starts
fading.

                    INSTRUCTION BOX
          You were so close, night traveler.
          Politeness sometimes helps to speed
          the things up. You may try again.

2) The man starts swimming as fast as he can.

                    MAN
          Hey! HELP!

He realizes that there is no end in the sea. He panics.

                    MAN (CONT'D)
          I cannot stay here forever. What is
          going on?

                        INSTRUCTION BOX
              You lost, my friend. The man never
              managed to take a risk in order to
              find his own voice. You may try
              again.

                                        END OF CHAPTER 6

EXT. CITY MAP - NIGHT

Three fireflies leave the last house and fly to the next
house with the next dream.

                        INSTRUCTION BOX
              Tap continue.
              If continue is tapped a box opens:
              Chapter 7: The staircase
              Click continue

CHAPTER 7: THE STAIRCASE

INT. PARENTS' BEDROOM - NIGHT

Two parents are sleeping in their bed. There is a small crib
next to the bed with a baby inside. There are some toys
around the room and a bookcase.

EXT. ORNATE MARBLE STAIRCASE - NIGHT

The parents are holding their child in their arms and see a
huge staircase in front of them reaching the stars.

1) Walk up the stairs.

2) Wait.

1) The parents start moving up the stairs holding their child
carefully between them.

The child slowly grows up with each step.

The parents see all the firsts in their child's life.

After two or three steps the child starts to walk up the
stairs on their own holding the parents' hand. After a while
the child starts to walk on their own.

The child tries to let go of the parents' hands.

3) Do not let the child let go of their hand.

4) Let the child let go of their hand.

3) The child takes a step away from their parents and looks
at them.

> CHILD
> I am ready... You have to let me
> live my own life now.

> PARENTS
> It's stormy and cloudy out there.
> You'd better stay for a little
> while.

> CHILD
> How am I supposed to be my own
> person if you won't let me face
> the storm?

> PARENTS
> There is still time for that.

The child sits down and watches the higher steps as they
slowly disappear.

> INSTRUCTION BOX
> You lost night traveler. Parents
> should let their child face the
> storms of the outside world to be
> independent. You may try again.

4) The parents let go of the child's hand. The child looks
back scared but excited.

> CHILD
> So... I guess I am going up now.

> PARENTS
> We will be right behind you.

The child feels safe and finds the courage to keep walking up
the stairs. The parents follow protectively one step behind
at a time, then two etc.

Going up, shadows start to appear. The child gets scared and
turns to their parents.

5) Fight the shadows along with the child.

6) Let the child fight them on their own.

5) The parents move up close to their child and all three of them fight the shadows until they are gone.

> CHILD
> I guess, I wasn't that ready...

> PARENTS
> It's okay to need help. One day,
> you'll be able to fight them on
> your own.

The child smiles and starts moving up the stairs again, grown up now. The parents still follow at a reasonable distance.

The child meets another person on the way and comes to the parents to let them meet each other.

7) Like the person.

8) Dislike the person.

7)

> PARENTS (CONT'D)
> You two, take care of each other.

> CHILD
> We will.

The child with their partner move up the stairs on their own. The parents look from far away and still follow some times. Just to stay close, watching them fighting their shadows together successfully.

> INSTRUCTION BOX
> Congratulations, my friend! You
> managed to help the new parents
> face their worries and see their
> wonderful life ahead.

INT. PARENTS' BEDROOM - MORNING

The parents look their baby sleeping in the crib and hug each other. They are happy.

8)

> PARENTS
> Nice to meet you. Let us talk,
> though.

The parents take their child two steps down.

                    CHILD
          What are you doing?

                    PARENTS
          This partner is not the right one
          for you, my dear...

                    CHILD
          Don't you trust me?

                    PARENTS
          We do trust that you'll understand
          what we are saying. In the long
          term it won't work out.

The partner waits and after a bit starts moving up the stairs
alone. The child stays behind watching the partner from
downstairs. The stairs start disappearing.

                    INSTRUCTION BOX
          You failed, night traveler! The
          parents should be supportive of
          their children and trust them in
          their decisions. You may try again.

6) The parents let the child fight on their own. The child
starts losing the battle and returns to the parents. The
child stays there unmoving.

                    INSTRUCTION BOX (CONT'D)
          You lost, my friend! The child
          needed some help in order to fight
          against his worries. You may try
          again.

2) The parents wait without taking any step, holding their
child close to them. The staircase and the whole place
corrupts at once leaving nothing but them waiting.

                    INSTRUCTION BOX (CONT'D)
          You lost, night traveler. Parents
          should be brave enough to let their
          child grow. You'd better try again.

                                        END OF CHAPTER 7

EXT. CITY MAP - NIGHT

Three fireflies leave the last house and fly to the next
house with the next dream.

INSTRUCTION BOX
Tap continue.
If continue is tapped a box opens:
Chapter 8: The mirror
Click continue

CHAPTER 8: THE MIRROR

INT. BEDROOM - NIGHT

A 62-year-old man is sleeping in his bed next to his partner.
The place has many family pictures.

INT. ROOM IN FRONT OF A MIRROR - MORNING

The man is preparing for his last day at work.

                    MAN
          Last day... Last day at work. Not
          sure I'm ready for that yet.

The man takes deep breaths and watches himself in the mirror.
He suddenly freaks out.

                    MAN (CONT'D)
          What? It can't be...

A child appears in the mirror. He seems to be 10 years old.

                    MAN (CONT'D)
          Are you...

                    CHILD
          You? Yes... but younger
          obviously... haha

                    MAN
          How? Am I dreaming?

                    CHILD
          I think you are but that's not the
          point here. You must be dreaming of
          me for a reason.

                    MAN
          What reason?

                    CHILD
          You tell me!

                    MAN
          Ugh... I don't know... I guess I am
          nervous about tomorrow. You see...
          It's my last day at work. I don't
          know if I am ready for this, to be
          honest.

                    CHILD
          Last day at work? My god you are
          old!

                    MAN
          Yes... I am haha... 62 years old.

                    CHILD
          I'm ten!

                    MAN
          I can see that.

                    CHILD
          So, how you feel?

                    MAN
          Nervous. Old. Insecure. I don't
          know if I did what I was supposed
          to do. And what to do next...

                    CHILD
          I mean... you can do whatever you
          want from now on. I have a
          question, though. What job did we
          pick in the end?

                    MAN
          Oh right! Haha, it's funny I
          assumed you knew what I was talking
          about. I am a teacher.

                    CHILD
          Really? That's what I thought I
          would choose.

                    MAN
          Well we did choose that.

                    CHILD
          Did you like your job?

                    MAN
1) I did! I had a great time... No
regrets in that part...
2) It was okay.

                    CHILD
1) I thought so!
2) Different from what we expected
huh?

                    MAN
1) But, you know what... I don't
think that career matters that
much. It is what you leave behind.
I had a full life you know. I
loved, I failed, I tried again, I
even succeeded a few times. I have
an amazing wife... And good
children. And I wouldn't change a
thing.
2) Yes it was... But, I found my
way out. You know... your job does
not define your whole life. I took
some pottery classes and gave some
products to friends. I guess now I
am retiring I can work on my stuff
more. And I have met an amazing
person to accompany me in this
journey.

                    CHILD
1) I never thought I'd be a
parent...
2) Do we have children?

                    MAN
1) Well, when you meet the right
person you will change your mind.
And if I went back I would choose
it all over again. It is the best
decision of my life.
2) No... No children. We travelled
a lot before we settled down here.
Then I got a steady job at the
local school and she opened a small
place in the neighborhood for food
and stuff. It is really beautiful.

                    CHILD
1,2) You seem complete. I don't get
why you are being so nervous.

                    MAN
          Am I? I don't know. I guess it's a
          new chapter for me.

                    CHILD
          You can handle it!

                    MAN
          I mean... yes... It's not like I
          have any other choice.

                    CHILD
          What's troubling you so much?

                    MAN
          *3) I don't know... I am not sure if
          I had the right impact on my
          students.*
          *4) I always feel I have more to
          give... I want to give more back to
          the world.*

                    CHILD
          3) I am pretty sure you did.
          4) You have so many more years to
          do things and open new chapters.
          This is not the end.

                    MAN
          3,4) I guess you're right. Well,
          time to wake up and go to that last
          day of work... Thanks for the talk!
          It really helped. Thank god you can
          have conscious dreams sometimes
          haha.

                    CHILD
          I know, right? Good luck, then.

                    MAN
          It is not goodbye, though... I will
          see you around...

                    CHILD
          For another chat... see you then!

The man leaves the mirror and his child self disappears.

                    INSTRUCTION BOX
          You were a witness of a conscious
          dream, fellow traveler. A companion
          to an inner conversation. Not many
          choices here.
                    (MORE)

                    INSTRUCTION BOX (CONT'D)
          The man seems less worried now. So
          you may move to the next one.

INT. BEDROOM - MORNING

The man puts his coat and smiles at the mirror. Then leaves
for his last day at work.

                                        END OF CHAPTER 8

EXT. CITY MAP - NIGHT

Three fireflies leave the last house and fly to the next
house with the next dream.

                         INSTRUCTION BOX
          Tap continue.
          If continue is tapped a box opens:
          Chapter 9: Memories
          Click continue

CHAPTER 9: MEMORIES

INT. BEDROOM - NIGHT

A 80-year-old man sleeps in his bed. There are not many
things inside the room. Some pictures are on the wall keeping
the memories.

INT. DARK ROOM - NIGHT

The man walks in a dark room walking through a shining path.

Pictures with memories are floating in the place. He stops in
front of one of the pictures. A mythical figure approaches
him.

                         FIGURE
          Oh, I see... I knew this one would
          draw your attention.

                         MAN
          I remember this one.
          1) My brother and I had many
          beautiful memories there. Climbing
          on the rocks... Chasing each other.
          My mother was furious when she
          found out. Well, I would be too!
          2) My sister playing the piano...
                         (MORE)

                    MAN (CONT'D)
          She wasn't good... haha... Who knew
          she would be a pianist in the end.
          You can spot me in the background
          watching.

The man continued to walk past the pictures and stopped to a
next one.

     1)

                    MAN (CONT'D)
          Here... Here I got my first job.
          You know I was never a good
          student. So I left school to get a
          job. It all turned out well,
          though... Later I opened my own
          place... Wait, I will show you...
          Huh... There it is! What do you
          think?

                    FIGURE
          Well it's beautiful!

                    MAN
          Yes, I guess it is. You know... I
          met my wife there... She came one
          morning to have a cup of coffee.
          Stormy day. She forgot her umbrella
          so I offered her mine... I got home
          wet and cold... I even got sick the
          next day... But it was worth it!
          Quite cinematic, I know! Then you
          know how it goes... we ended up
          with two wonderful kids... and
          everything was magic.

     2)

                    MAN (CONT'D)
          Ah, here is my graduation day. I
          became a doctor you see. And I
          loved it! No time for personal life
          though.

                    FIGURE
          It must have been pretty lonely.

                    MAN
          Not really... My work was my life.
          Later though, I met my partner in
          life. And we adopted two wonderful
          kids! I was never alone after
          that...

1,2)

                    MAN (CONT'D)
          Here we are all together.

                    FIGURE
          What's wrong... What is it?

                    MAN
          I miss her... I wish she could see
          them grow up like I did... But
          that's life, I guess... If I had a
          second chance, I would choose her
          again... Be with her again. I love
          her with all my heart. And being
          able to love someone that much is
          the best thing that can happen to
          you.

                    FIGURE
          You seem complete... That is nice.

                    MAN
          Yes... I lived my life to the
          fullest. Here... Their graduation
          day. They are twins you know... and
          they graduated together... We ran
          from one ceremony to the other that
          day. It really was a great day!
          Then they got jobs, found
          partners...

                    FIGURE
          You feel lonely... Don't you?

                    MAN
          It's normal... It's okay to be
          lonely... I just... I don't want to
          be forgotten.

                    FIGURE
          It's a normal fear, yes.

                    MAN
          3) They moved to other countries to
          make a life for themselves. I am
          supportive of that. I just... I
          miss them so much.
          4) Fortunately they are close to
          me. I mean... I always encouraged
          them to live abroad if they
          wanted... But they stayed here,
          close by...
                    (MORE)

                  MAN (CONT'D)
And if I'm being honest, I really
like the fact that they did.

                  FIGURE
3) They love you, though... I don't
think you have anything to worry
about...
4) One more reason not to be
afraid.

                  MAN
3) Yes they do!
4) Yes, I think you're right.

3,4) The man continues walking through the path with the
shiny figure following him.

                  INSTRUCTION BOX
You were witness to the man's
worries, fellow traveler. You
accompanied him in a lonely dream
full of memories. Sometimes the
only thing you can do is listen to
someone's story... Yes... You were
the shiny figure.

INT. LIVING ROOM - DAY

The old man is sitting in his chair watching TV. The doorbell
rings. The man goes and opens the door.

                  MAN
Oh... You didn't have to!

                  PEOPLE
Of course we did... Happy birthday
dad! Look who's here... Your
granddaughter!

                  MAN
Hi, little one...

                          END OF CHAPTER 9

ENDING SCENE

EXT. CITY MAP – NIGHT

Three fireflies leave the shore and fly to the stars. The
last star returns to the sky. All the stars shine again.

>   INSTRUCTION BOX
>   So, my friend... You managed to
>   help every person in this city to
>   make their wish come true. Every
>   star has returned to the skies.
>   Thank you... And do not go far
>   away... We might need you again.
>   In the end, all we have is each
>   other.

                                        THE END

Chapter 6

Conclusion

In this chapter, the synopsis of this thesis is included.

6.1   Results and summary

In this thesis, the educational value of digital storytelling was analysed and the development of an interactive visual novel was achieved.

The game presents some of the main struggles of each age and different social issues, and asks the player to empathise with each character and understand their needs.

While it addresses some of the most important problems of the different stages in someone's life, there are still many things to be discussed on that matter, if aiming to have a more completed version of it.

6.2   Future improvements

Some possible future improvements of the visual novel created could be the following:

1. Add more characters in order to be able to include more different age problems and social issues.

2. Extend some of the existing stories.

3. Add more detailed art.

4. Add more animation clips.

79

Bibliography

[1] Frank Van Gils. Potential applications of digital storytelling in education. In *3rd twente student conference on IT*, volume 7. Citeseer, 2005.

[2] Daniela Spanjaard, Francine Garlin, and Hossain Mohammed. Tell me a story! blending digital storytelling into marketing higher education for student engagement. *Journal of Marketing Education*, 45(2):167–182, May 2022.

[3] Bloom's taxonomy. `https://www.toppr.com/bytes/blooms-revised-taxonomy/`. 28/9/2023.

[4] Ece420 game architecture and development course. `https://eclass.uth.gr/courses/E-CE_U_203/`. 28/9/2023.

[5] Pelin Yuksel, Bernard Robin, and Sara McNeil. Educational uses of digital storytelling all around the world. In *Society for Information Technology & Teacher Education International Conference*, pages 1264–1271. Association for the Advancement of Computing in Education (AACE), 2011.

[6] James R Skouge and Kavita Rao. Digital storytelling in teacher education: Creating transformations through narrative. *Educational Perspectives*, 42:54–60, 2009.

[7] Bernard Robin. The educational uses of digital storytelling. In *Society for information technology & teacher education international conference*, pages 709–716. Association for the Advancement of Computing in Education (AACE), 2006.

[8] Kevser Hava. Exploring the role of digital storytelling in student motivation and satisfaction in EFL education. *Computer Assisted Language Learning*, 34(7):958–978, August 2019.

[9] Jason Ohler. The world of digital storytelling. *Educational leadership*, 63(4):44–47, 2006.

[10] Hilary McLellan. Digital storytelling in higher education. *Journal of Computing in Higher Education*, 19:65–79, 2007.

[11] Ayşenur AVCI and Yusuf KASIMİ. A bibliometric analysis of digital storytelling in language education. *The Literacy Trek*, 9(1):88–104, June 2023.

[12] Farzad Parsayi and Ali Soyoof. Video games: The interface between language learning and storytelling. *International Journal of Pedagogies & Learning*, 13(2):103–118, 2018.

[13] Sheng Kuan Chung. Art education technology: Digital storytelling. *Art Education*, 60(2):17–22, March 2007.

[14] Sheng-Kuan Chung. Digital storytelling in integrated arts education. *The International Journal of Arts Education*, 4(1):33–50, 2006.

[15] Melek Merve Yilmaz and Ayperi Siğirtmaç. A material for education process and the teacher: the use of digital storytelling in preschool science education. *Research in Science and Technological Education*, 41(1):61–88, November 2020.

[16] Varvara Garneli, Michail Giannakos, and Konstantinos Chorianopoulos. Serious games as a malleable learning medium: The effects of narrative, gameplay, and making on students' performance and attitudes. *British Journal of Educational Technology*, 48(3):842–859, April 2016.

[17] Eric Tyndale and Franklin Ramsoomair. Keys to successful interactive storytelling: A study of the booming" choose-your-own-adventure" video game industry. *Journal of Educational Technology*, 13(3):28–34, 2016.

[18] Dendi Pratama, Winny Gunarti Widya Wardani, and Taufiq Akbar. Building contextual perception through background illustrations in visual novel with historical theme. *Journal of Arts and Humanities*, 7(10):53–64, 2018.

[19] DADAN NUGRAHA, FASLI JALAL, and SOFIA HARTANTI. Development of digital media based on visual novel (pros-vn) to improve prosocial behavior in early childhood. *Journal of Theoretical and Applied Information Technology*, 101(14), 2023.

[20] Hyunji Kwon. Graphic novels: Exploring visual culture and multimodal literacy in preservice art teacher education. *Art Education*, 73(2):33–42, February 2020.

[21] Muslat A Bin Rubaia'an. Visual novels in maxillofacial surgery education: A hidden gem. *Cureus*, August 2023.

[22] Matthias Gensheimer, Florian Huber, and Georg Hagel. Gamification in software engineering education through visual novels. In *Proceedings of the 4th European Conference on Software Engineering Education*, pages 1–5, 2020.

[23] Kuo-Wei Kyle Lai and Hao-Jan Howard Chen. A comparative study on the effects of a VR and PC visual novel game on vocabulary learning. *Computer Assisted Language Learning*, 36(3):312–345, June 2021.

[24] Janelynn Camingue, Elin Carstensdottir, and Edward F. Melcer. What is a visual novel? *Proceedings of the ACM on Human-Computer Interaction*, 5(CHI PLAY):1–18, October 2021.

[25] What is a visual novel video game? `https://www.makeuseof.com/what-is-visual-novel-video-game/`. 28/9/2023.

[26] Visual novels wiki. `https://en.wikipedia.org/wiki/Visual_novel`. 28/9/2023.

[27] Janelynn Camingue, Edward F Melcer, and Elin Carstensdottir. A (visual) novel route to learning: a taxonomy of teaching strategies in visual novels. In *Proceedings of the 15th International Conference on the Foundations of Digital Games*, pages 1–13, 2020.

[28] Hestiasari Rante, Achmad Basuki, et al. The role of paper prototyping in designing visual novel game as learning media for children. In *2019 5th International Conference on Education and Technology (ICET)*, pages 24–28. IEEE, 2019.

[29] Niña Ana Marie Jocelyn Sales, Nathaniel Villanueva, Matthew Robert Evangelista, Joshua Luigi Emmanuel Cestina, and Jhona Camba. The development of a visual novel role-playing game [vn rpg] as an open educational resource [oer] for philippine literature educators administering the "noli me tangere" module. In *2021 IEEE 13th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management (HNICEM)*, pages 1–5. IEEE, 2021.

[30] Kristine Øygardslia, Charlotte Lærke Weitze, and Juhyung Shin. The educational potential of visual novel games: Principles for design. 2020.

[31] Top visual novel games taged educational. `https://itch.io/games/genre-visual-novel/tag-educational`. 2/10/2023.

[32] Attentat 1942 wiki. `https://en.wikipedia.org/wiki/Attentat_1942`. 2/10/2023.

[33] Attentat 1942 itch.io. `https://charlesgames.itch.io/attentat1942`. 2/10/2023.

[34] Golden threads itch.io. `https://allanxia.itch.io/golden-threads`. 2/10/2023.

[35] Grey plague itch.io. `https://zephyo.itch.io/grey-plague`. 2/10/2023.

[36] Code romantic itch.io. `https://prettysmart.itch.io/code-romantic`. 2/10/2023.

[37] Aslıhan Batur and Ünal Çakıroğlu. Implementing digital storytelling in statistics classrooms: Influences on aggregate reasoning. *Computers and Education*, 200:104810, July 2023.

[38] 5 elements of a great screenplay. `https://www.arcstudiopro.com/blog/great-screenplay-elements`. 28/9/2023.

[39] How to write a screenplay? `https://www.studiobinder.com/blog/how-to-write-a-screenplay/`. 28/9/2023.

APPENDICES

Appendix A

Concept Art

In this appendix, some of the concept art of the visual novel is presented. Everything was hand-drawn using Procreate. When color correction was needed, Adobe Photoshop was used.

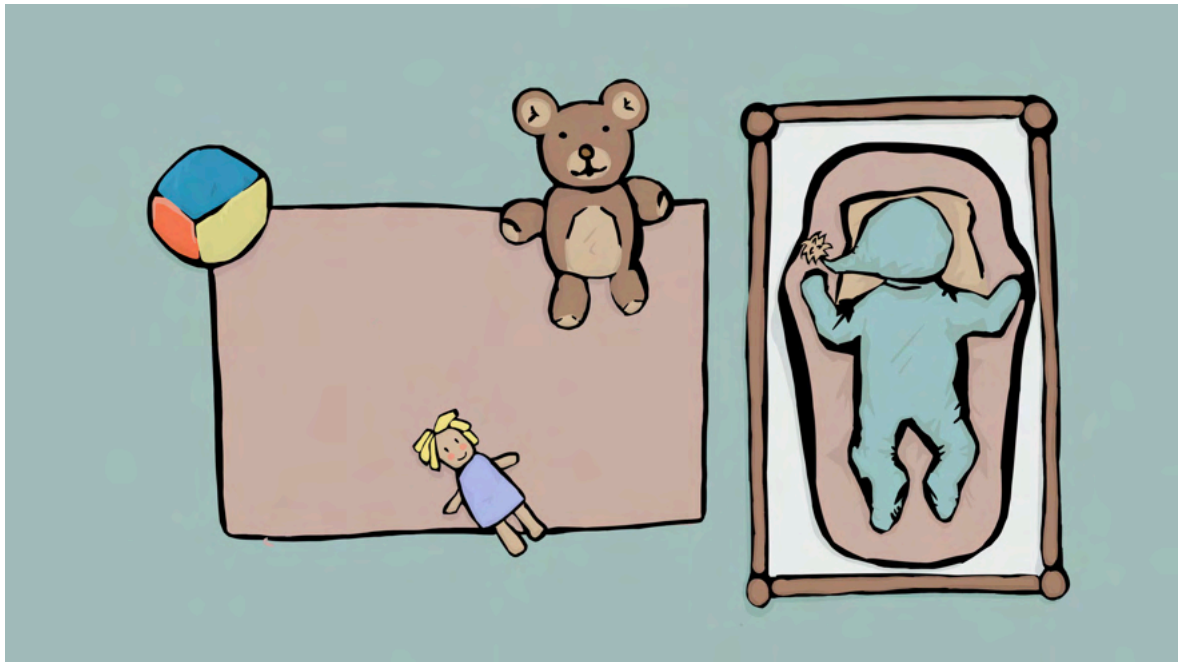
Figure A.1: Behind the curtain

Figure A.2: The newborn's bedroom

Figure A.3: Boy's bedroom in chapter 1

Figure A.4: The sign

Figure A.5: Travelling
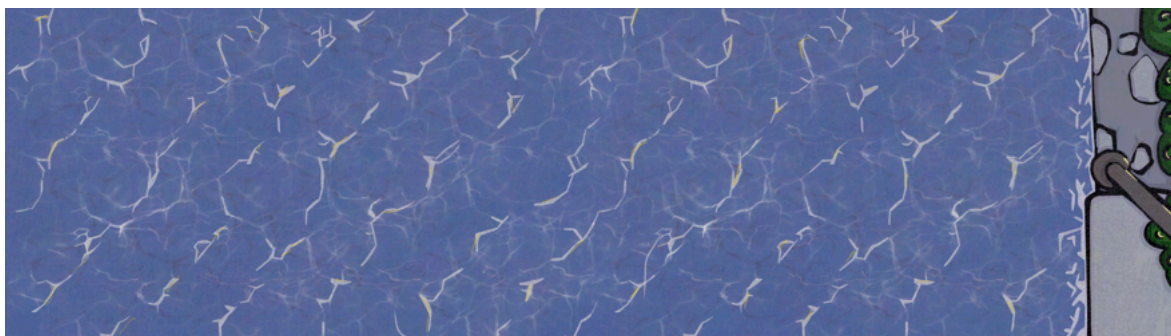
Figure A.6: The door

Figure A.7: The sunny sky
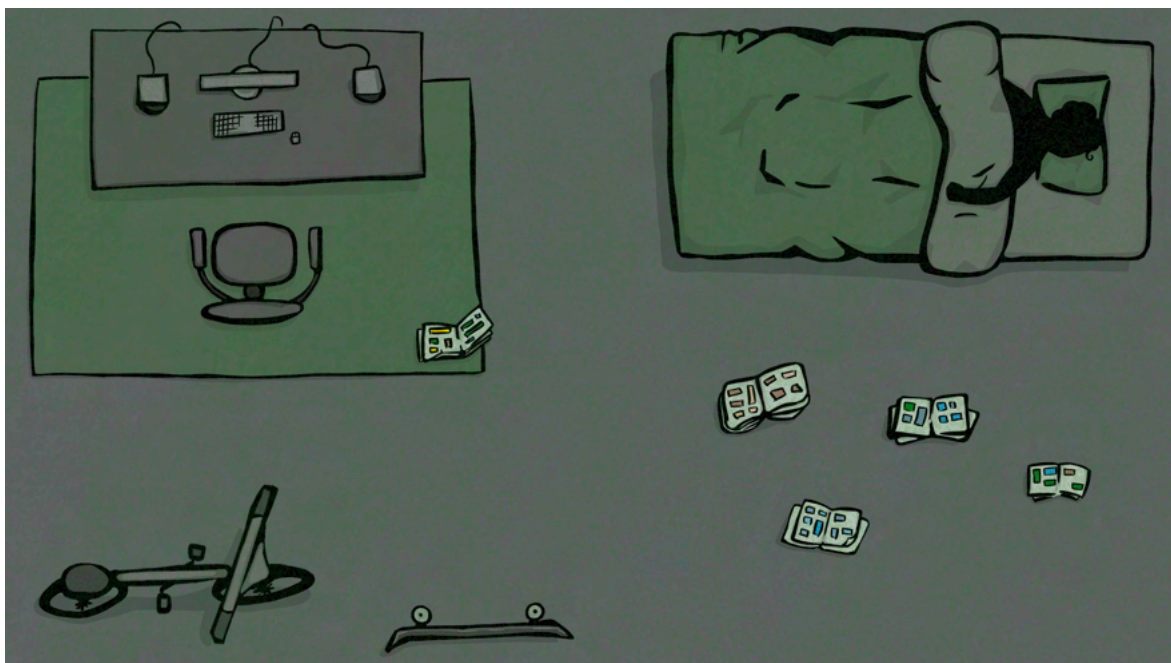
Figure A.8: The shore

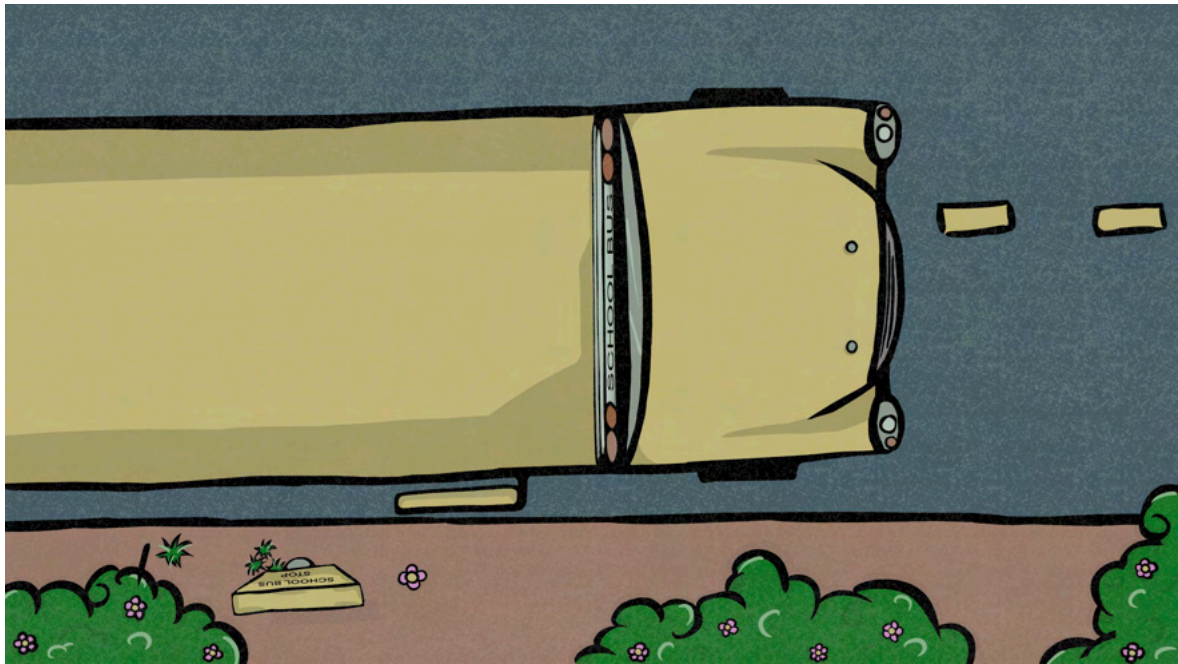Figure A.9: Kid's bedroom in chapter 3

Figure A.10: The school bus stop

Figure A.11: The garden of emotions

Figure A.12: The girl's room in chapter 4

Figure A.13: The office

Figure A.14: The beach

Figure A.15: The man's bedroom in chapter 6