JIBE

Educational cyberbullying game for youngsters with learning disabilities

Joep Wijnands

Study programme:
Creative Media & Game Technologies
Saxion University of Applied Sciences

Student administration number:
423047

Company coach:
Ines Schell - Kiehl
Research department of Social work Saxion

Graduation coach:
Henri Bruel

Second reader:
Hester van der Ent

SAXION
University
of Applied
Sciences

Abstract

Social media is becoming more and more important and thus, online and offline bullying as well as violence between children and teenagers can be observed as an effect of the growing influence of the online communities . 1 As Jacobs (2015) states, "worldwide, between 20% and 40% of adolescents are the victim of cyberbullying"2. In the Netherlands specifically "this percentage lies around 20%".2

Because bullying is such a current problem, the matter has been receiving attention from the government as well as the industry itself.1

Social norms are a pivotal force in terms of bullying and youth violence. Social norms is the perceived truth about how people are supposed to act or look. These norms "allow individuals to justify bullying simply because a peer is not part of the same group."3

Social media is often used to depict an altered state of life. As Haziq (2019) quotes from Ervin Goffman's book The Presentation of Self in Everyday Life (1959): "We are constantly trying to set ourselves in the best light that is favorable to us"4 . This reflects perfectly to today's times, where everyone uses Instagram, Facebook or similar platforms – sharing their perfect lives. Exactly this perfected presentation of one's self alters social norms and expectations people have from others and themselves, which leads to a facilitation of violence, especially in forms of (cyber)bullying. For bullies, it is easy to spot who falls outside of the norm that is constantly presented to them.

Henceforth, the client wishes to create a product, in the form of a game, that spreads awareness and even prevents bullying in both – online and offline spaces. According to the client, there is only limited evidence regarding the impact on social norms caused by certain online content and polarizing information. So, with the limited research that is done, own data sources have to be found in order to help with the improvement against (cyber)bullying.1

The game to be created is supposed to resonate with learning disabled teenagers. This is because these teenagers do not always know how to get control over their emotions and are more prone to being a victim of bullying.5

This can lead to different types of copying behaviour, but also leads to depression and other mental disorders, in the worst case.6

In general, bullying is very complex. While the bully nowadays is often predicted as the bad guy it will be necessary to establish a different kind of perspective around the bully and the bullied. Oftentimes, teeangers arent aware that they are bullying someone, whereas others may not notice they are being bullied.

It is necessary to develop a tool for teachers, social work and other authorities that sheds light upon all sides of (cyber)bullying and how it impacts the life of the bully and the bullied. Furthermore, it is supposed to show how to prevent bullying and how to put a stop to it.

Preface

There is a lot of information about bullying and how to prevent it. There is not a lot of information about the complexity of bullying and cyberbullying. Especially for kids with mental disabilities (learning disabilities), the complexity isn't clear. With a game for these youngsters the client wants to create more awareness and a call to action to act when these situations occur in their lives. This game can be used for educational purposes by teachers and parents as well.

During the project we will be working together with different people. The project is initiated by Ines Schell-Kiehl, Timothy Kariotis, and Jeroen Linsen; the clients of the project.
Ines Schell-Kiehl is a teacher of social work at Saxion. She is also working on research about bullying and especially cyberbullying. Ines started to research about cyberbullying and children with a learning disability. She is the catalyst for the "bullying game" project.

Timothy Kariotis is a Ph.D. engineering graduate at the University of Melbourne. He has studied ethics and technology. He has done a lot of research on social work. He is very invested in the research part of the project.

Jeroen Linsen is a teacher at Saxion. He is a consultant for the project and focuses mostly on data and data gathering for the game.

The clients and the group will keep in contact via email. When there are project updates we will inform the clients via email. When there is a reason to show something we will set up a meeting with the clients via Teams.
The tutor during this project is Hester van der Ent. Hester is a teacher at Saxion. She will help and consult the project group and answer any questions the project group has or when there are any problems.

Hester would like to be very involved with the progress of the project. The team will have a progress meeting with Hester once a week. We will inform Hester on the work we have done and what is the goal for the coming week.

The students in this group project are, Max Bischoff, Selima Heister, Annemieke Muis, Shauntae Jones, Erika Batarunaite, Kevin Sens, Luuk oude Vrielink, Charlotte Hoff and Joep Wijnands. All students are Creative media and Game technologies students except for Charlotte, she is a Creative business student.

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Concepts

UI

UI stands for "user interface". The user interface design is the process designers use to build interfaces in computerized devices, where they focus on the looks or style. The main goal is aiming on a design that users think is easy to use and pleasurable. UI design refers to the graphical user interface (GUI) and other forms -e.g., voice-controlled interfaces. (interaction-design.org, 2020)

UX

Ux stands for "user experience". The user experience design is the process design teams use to create products that provide meaningful and relevant experiences to the users. This involves the design of the entire process of acquiring and integrating the product, aspects of design, branding, usability and functions.
(interaction-design.org, 2020)

"No product is an island. A product is more than the product. It is a cohesive, integrated set of experiences. Think through all of the stages of a product or service – from initial intentions through final reflections, from first usage to help, service, and maintenance. Make them all work together seamlessly."
(Don Norman, inventor of the term "User Experience")

LD

"LD stands for learning disabilities. Learning disabilities, or learning disorders, are an umbrella term for a wide variety of learning problems. A learning disability is not a problem with intelligence or motivation. Kids with learning disabilities aren't lazy or dumb. In fact, most are just as smart as everyone else. Their brains are simply wired differently. This difference affects how they receive and process information."
(Kemp, Smith, and Segal, Ph.D., 2019)

1. Introduction

1.1 Reason

The graduation research will be conducted for the University of Melbourne and Saxion University of Applied Research. They are searching for new ways to create awareness against the complexity of bullying and cyberbullying from and against mental disabled youngsters. These youngsters live with learning disabilities (LD), and study at special schools. The client wants to know what causes bullying and which strategies could be used to mitigate the behaviour. There is limited evidence as to how different online content, especially global versus local misinformation, and polarizing information impacts these norms and their associated role in youth violence. The client wants to know how to reach these youngsters and the best way to approach them. The client wants to have a game that creates more awareness about bullying and cyber-bullying for mental disabled youngsters. This game should be web-based and include the connection towards social media and cyberbullying. With the found information and research we want to create a game that will inform the youngsters and teachers the effects of bullying and cyberbullying in their own lives. The game is proposed to be played by the target-group that are the youngsters with learning disabilities. For further goals the client wants to look how it can be used in an educational way for these youngsters.

1.2 Preliminary problem definition

The client is looking for new ways to create a clearer view of the complexity around bullying and cyber-bullying. They want to create a game to create more awareness and a call to action for the youngsters with mental disabilities. The client wants to know what causes bullying and which strategies could be used to mitigate the behaviour. There is limited evidence as to how different online content, especially global versus local misinformation, and polarizing information impacts these norms and their associated role in youth violence. There are a lot of different aspects that could cause bullying. With the limited research that is done, we need to find our own data sources that help with the improvement against cyber bullying.

These youngsters are the target of some bullies and don't know how to react or behave in this situation. This is because these youngsters with mental disabilities do not always know how to get control over their emotions. This can lead to different types of copying behaviour, but also leads in worst cases to depressions. Bullying is very complex, and the bully is always the bad guy nowadays. There is a need for different types of perspective around the bully and the bullied. Bullies could live in a very complex situation that they can't handle and their reactions to that certain situation could be bullying others to forget their own pain or situation. Therefore, the bully could also be the bullied.

Research has proven that these mental challenged youngsters are bullying others as well. They don't see the consequences of their actions and therefore we need to come with an educational way of teaching them what the effects of their behaviour could be doing to the kids they are bullying. Helping them and others to prevent and overcome bullying.

With this game we want to show the damage that could be done to these youngsters by bullying or being bullied. Make a clearer view of just a little joke, and bullying. In some cases, the bully doesn't even know he or she is the bully, because they don't understand the effect of their actions. These actions could lead to serious cases of a variety of fears and depressions, or even worse.

The client wants a game that they can use with the youngsters with LD. With this game they want to create more awareness about the complex situation of bullying. Teaching them how to prevent bullying and online bullying in the future.

There is limited evidence as to how different online content, especially global versus local misinformation, and polarizing information impacts these norms and their associated role in youth violence. There are a lot of different aspects that could cause bullying. With this project i will search for different approaches to find the cause of bullying and create more awareness about bullying to prevent it in the future. Bullying and cyberbullying causes big effects on the youngsters' lives, and needs to stop.

With the prototype that the client wants, the client can observe the bullying complexity with the target audience. They can see how the target audience will act in different situations of this problem. The prototype will help the client with their research about this topic, but it won't solve the problem at first sight. This prototype will provide new knowledge and give a greater insight for the future possibilities to solve this problem.

The client wants to get data from this prototype of an online bullying game, to use it for their own research and approach methods. The first problem that occurs in this research is an approachable game for the youngsters with LD. The prototype will have researched topics that help the target audience to understand the complexity of bullying. With the results that will be gathered, the client can go through with their research to a solution for this problem.

The client wants to test a prototype with social work students and give a presentation (mid-point) to test engagement in the process. It should be low viability for stakeholders, but this depends on the skill of the people working on the game.

1.3 Problem definition (Same as preliminary problem definition)
The client is looking for new ways to create a clearer view of the complexity around bullying and cyber-bullying. They want to create a game to create more awareness and a call to action for the youngsters with mental disabilities. The client wants to know what causes bullying and which strategies could be used to mitigate the behaviour. There is limited evidence as to how different online content, especially global versus local misinformation, and polarizing information impacts these norms and their associated role in youth violence. There are a lot of different aspects that could cause bullying. With the limited research that is done, we need to find our own data sources that help with the improvement against cyber bullying.

1.4 Demarcation
During this graduation research the main focus is on the design aspect of the game. This implies that the game design and ideas will be created by the research that is provided during this process. The research will apply the elements that should be in the game to create a more understandable environment for the youngsters with LD. Technical aspects and content will not be included in this graduation report. But the technical aspects will be taken into account for this report.

1.5 Issue
There is limited evidence as to how different online content, especially global versus local misinformation, and polarizing information impacts these norms and their associated role in youth violence. There are a lot of different aspects that could cause bullying. A lot of information about bullying and cyberbullying is targeting all people. For this specific target audience, the evidence is even more limited.

1.6 Goal

The main goal of this research is to create a prototype of a game that includes the complexity of cyber-bullying. The game should be playable for the youngsters with LD and will help them in the future if these youngsters encounter these situations. Making sure there is a reason for bullying and don't point out that the bully is always the bad person in the situation.

1.7 Main- and subquestions

Main question:

Which requirements should a storytelling game for youngsters with (LD) consist of, to create more awareness and a call to action against bullying and cyberbullying?

Sub questions:
- What is Bullying?
- What are the cognitive abilities of mentally disabled youngsters with learning disabilities?
- What game design methods can be used for these youngsters with learning disabilities?
- What is a good approach for children with LD?
- What are the games that these youngsters with LD play?
- What are the criteria to create a perfect form of storytelling for these youngsters?

1.8 Research method

To create a good prototype, research needs to be done at first. This research will give answers to different aspects of the situation and game. This research is needed to map out the target audience, and the elements that the game should consist of. The provided information and results should be measured. That has to be researched as well.

1.8.1 Deskresearch

Deskresearch is a research that is executed at your desk / working space. On the internet there will be searched for different kinds of information about certain topics. The information that is provided will be checked if it is reliable and not fake news. During the deskresearch there will be searched for answers on the sub questions stated above. The sources of the found information can be found under the topic "Sources".

1.8.2 Interviews

Interviews with social workers, parents of youngsters with LD and teachers in special schools, will provide information and insights of these youngsters with LD. Speaking with these people will help in the research to get in touch with these youngsters. The youngsters themselves are harder to interview. An interview can be overwhelming and have to be guided very clearly by people with knowledge(teachers, parents and social-workers). During the COVID-19 crisis the interviews will be mostly online or in a Corona proof setting.

1.8.3 Surveys
During this research surveys can give clearer information about the aspect of bullying. How do people look towards bullying and cyber-bullying? These surveys can be used as a wild goose technique to gather the information needed. This will be validated by the deskresearch that is done.

1.8.4 Prototyping / user tests
To get the best possible outcome of the game, there need be a lot of prototyping and testing with the target audience. If the tests can't be done with the target audience because of ethical circumstances or due the Corona virus, the tests will be done online with the target audience or the social-workers and teachers of these youngsters with LD.

1.8.4.2 Think aloud method
The target audience will do the think aloud method during their test sessions. We want to know how the target audience behaves and react to certain topics of the game. The results will be compared with the deskresearch, and will be checked if the expectations will be fulfilled.

1.8.4.3 Testing surveys
After the tests the target audience will fill in a survey about the game. This survey will give insights of the pro's and cons of the project. The information that is gathered will be processed in the prototype for further testing.

1.9 Reliability and validity
Despite the specific target audience, the target audience is very broad. There are a lot of different types of the causes of LD which leads to different approaches for the game. Some of these youngsters aren't able to read or write. To clarify these specific youngsters we think are the main target audience, surveys and interviews will get that information we need.

The surveys will give the information about their behaviour online. What are their techniques with nowadays technology and the internet? With this information we can create a game that is understandable and acquires their thinking method.

Interviews with social workers will give an insight in their daily behaviour. This information will come in handy with developing the game for these youngsters. Doing interviews with different social workers will give different approaches that will be checked with the information gathered from the desk research.

With the playtests and the think aloud method, the youngsters and social workers give their honest opinion on the game that is needed to get the best results. This method will give different kinds of information and insights that the designers of the group will look into. This to generate new ideas that will fulfill the wishes and needs of the client.

2. Target Audience

The game will be created for the youngsters with LD in the age range of 15 to 18 years old. With this specific target audience must be taken into account that the mental age of these youngsters is 2 years younger. To connect with the youngsters with LD is difficult because of the situation with the COVID-19 pandemic, but also with their way of life. These youngsters could become overwhelmed because of this situation and have to be guided very carefully in this process. For that very reason it is decided that there will be two different target audiences. The youngsters with LD and the social workers who are working with these youngsters. These social workers can predict and define the way of thinking of the youngsters with LD. It will be a reliable and valid target audience, that helps thinking during the process that the game / prototype will go through. Based on ethical circumstances and the new privacy policy rules, the persona's are created anonymously. The information in the persona's come from a real social worker and a youngster with LD. But the name and picture aren't from them.
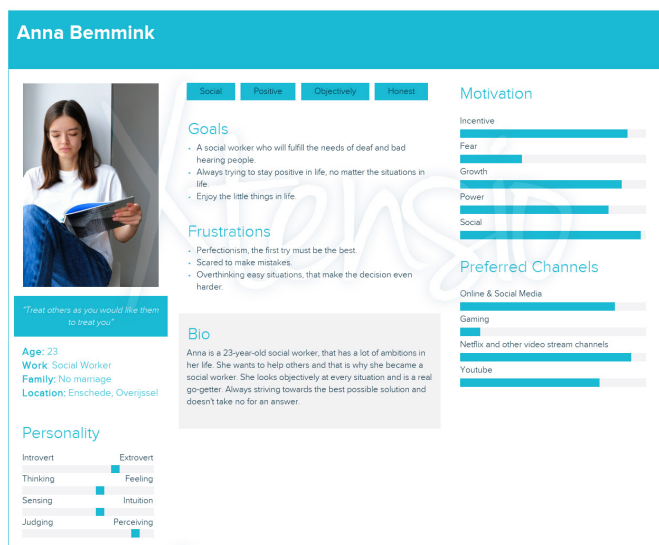
appendix 1: persona 1 : Anna Bemmink (Wijnands, 2020)
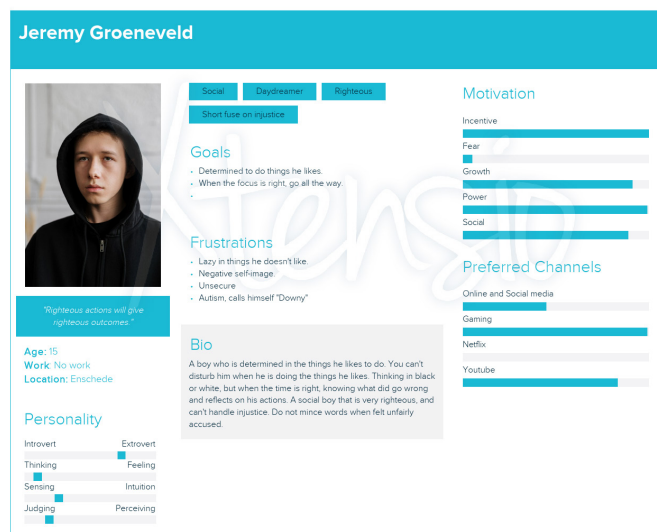
Appendix 2: persona 2 : Jeremy Groeneveld (Wijnands, 2020)

These persona's will give a clearer insight on how the two different target audiences will react during different circumstances. During the creation process of the game these persona's will help with the way that the target audience is looking towards the product, instead of your own vision and view.

3. Theoretical framework

3.1. Sub question 1-A: What different types of bullying are there?

Bullying will show up the most times among the school aged children. It is behaviour that is unwanted or aggressive for the person who is being bullied. It is a repeated behaviour that involves perceived or real power. Kids who are getting bullied and the kids who are bullying may have serious, lasting problems.

There are several different effects of bullying that can occur by the victims. Kids who are getting bullied are more likely to have depression and anxiety. Some of the signs that occur with these effects are increased feelings of loneliness and sadness, different eating patterns, losing interest in things they used to enjoy and changing sleeping patterns. It could occur that these issues will persist during adulthood as well. Another effect that can occur during the bullying is health complaints. The bullied will feel mentally and physically miserable. That will stay a longer period even when the bullying is over. What is also likely to happen when someone is being bullied, is that the grades in school will get lower. A decreased academic achievement and school participation. These kids are more likely to miss, skip or drop out of school.

There are a lot of different types of bullying and bullies. According to researchers that study bullying has discovered that there is much more to bullying than the eye meets. They have discovered that there are six different types of bullying excluding bullying about race or religion.

- Physical Bullying
- Verbal Bullying
- Sexual Bullying
- Prejudicial Bullying
- Relational Aggression
- Cyber Bullying

Wang, Iannotti, Nansel. (2009)

Physical bullying:
This is the most common form of bullying. This form of bullying is the easiest to recognize for others. In this form of bullying the bully is tending to be bigger, stronger and more aggressive than the bullied. If you ask people the definition of bullying, this would be the first thoughts of most of the asked attendees. This form of bullying is according to the researchers the form of bullying that gets the most attention in school.

Verbal bullying:
Verbal bullying is also one of the most common forms of bullying. The bully wants to gain power over the victim using words, name-calling and statements about the bullied. The way the victim looks, walks or behaves, is most likely the reason why they are targeted by the bully. According to the research this form of bullying should be taken very seriously, because this form of bullying can leave deep emotional scars on the victim.

Relational aggression:
This form of bullying is harder to recognize for parents or teachers. The bully is very sneaky and insidious with the approach of the victim. It could be referred to as emotional bullying. It is a type of social manipulation where the bullies and the bullied hurt and sabotage their social standing. They spread rumors, manipulate situations and exclude the victim from the group. It is most common in middle school but also occurs in the workplace with grown ups.

Cyber bullying:
It is called cyberbullying when youngsters use the internet, smartphones or other technology, to harass, threaten or embarrass a targeted person. When there are adults involved with this form of bullying, it is called cyber-harassment or cyber-stalking. Cyberbullying is an easy way for bullies to insult and harass others where they don't have the courage to face-to-face. They feel anonymous and detached from the situation because of the technology that is in between them and the victim. Bullies can get to their victim every and anytime they want.

Sexual bullying:

When a person is sexually targeted by repeated, harmful and humiliating actions, we speak about sexual bullying. The victims get unwanted attention with crude comments, vulgar gestures, sexual propositioning and pornographical materials. In the worst case scenario this even could even lead to sexual assault on the victim. Sexting is also a form of sexual bullying. When someone sends a photo from him or herself to their lover, the lover could spread these pictures when they break up. At that moment the person who sended the photo can be targeted by other people. Making fun of their body, give crude names and make some disgusting comments.

Prejudicial bullying:

The prejudicial bullying form is based on prejudices from two different people. This form of bullying can encompass all different forms of bullying based on, sexuality, race of religion. Youngsters and kids are most likely to target someone who is different than they are and trying to single them out.

For more insights we went towards Lingen (Germany) to talk with social workers who are working with children with LD. We asked them several questions about the game and also some questions about what they see in their working life. (chapter 5 of this essay: Results.)

Everybody has a different style, personality, goals and behaviours. That is the same for the bullies. Some of the bullies can be categorized, and some will neatly fit into them. Some of the bullies even fall into several categories, where others just create their own.

Bully-victims:

These bullies have been bullied before in their life. At this moment the bully bullies others to regain their sense of power and control.

Popular-bullies:

These bullies have a big ego and are really confident. They most likely have a group of followers and they think they rule the school. Other kids in school accept this form of bullying in the most cases, because they want to be accepted rather than being bullied.

Relational-bullies:

Most of these bullies are some-what popular in school. These youngsters decide who is popular and who isn't. The most common weapon of these bullies are: excluding, ostracizing and isolating the victim.

Serial-bullies:

This form of bullying is also mostly common in the popular groups at school. These bullies act systematic, controlled and calculated. The authorities like parents, teachers and administrators could have no idea of the capability of a serial-bully. They appear to be very charismatic and charming towards authority figures. They act cold and tend to inflict emotional pain. They usually manipulate their victim and attend to be their friend (fake-friend).

Group-bullies:

The group bullies have a different mentality when they are packed together with the group. Individually they attend to be very different and can even be friends with the bullied. Most-likely for the group bullies is that they copy the behaviour of the leader of the group.

Indifferent-bullies:

This group of bullies are often the most dangerous of all sorts of bullies. Luckily this form of bullying doesn't appear that much. These youngsters are mostly unable to feel empathy. They get a good feeling over watching others suffer. Most of them have psychological problems that need to be addressed by a professional. The standard procedure of anti bullying doesn't seem to change their bully behaviour.

3.1 Sub question 1-B : Which forms of bullying occur the most?

Research has shown that children with ADHD (attention deficit or hyperactivity disorder), are likely getting more bullied than other children. Somewhat they are more likely to bully their peers than others (Twyman et al.,2010; Unnever & Cornell, 2003; Weiner & Mak, 2009).

In a study of eight to seventeen year-olds, they found out that children with ASD(autism spectrum disorder), are at an increased risk of getting bullied (Twyman et al., 2010).

Youngsters who suffer from epilepsy are more likely to be bullied by peers, as are the youngsters with medical conditions like cerebral palsy, muscular dystrophy and spina bifida. Most of the times they get called names that are related towards their disability (Dawkins, 1996). Youngsters with paralysis of one side of their body (hemiplegia), are more likely to have fewer friends and getting more bullied (Yude, Goodman, & McConachie, 1998). Youngsters that are suffering from diabetes and being dependent on insulin, could be especially vulnerable to peer bullying (Storch et al., 2004). It is stated that there is a greater risk for children with LD to be bullied. Researchers found out that children with LD are more likely to bully their peers than other children (Twyman et al., 2010).

3.2 Sub question 2 : What are the cognitive abilities of mentally disabled youngsters with learning disabilities?

Since the first of august 2003 are the special schools divided in four different clusters. These clusters are reliable on the Wet op de Expertisecentra (WEC) of the Netherlands.
CBS | sociaaleconomische trends, (oktober 2014)

Cluster 1: Blind, partially sighted children

These schools are mentioned for visual disabled children or blind and partially sighted children with a mental disability.

Cluster 2: Deaf, hard of hearing children

Cluster 2 exists out of schools for deaf, hard hearing children and youngsters with severe speech difficulties. Also deaf and hard hearing youngsters with a visual disability are included in this cluster, just as deaf and hard hearing youngsters with a mental disability.

Cluster 3: handicapped and long-term sick children

These schools are for children with physical and mental disabilities. These schools are also for long term sick children with a physical handicap, just as youngsters with the Down's syndrome.

Cluster 4: children with disorders and behavioral problems

This cluster exists of schools for long term sick children with psychiatric disorders or children with serious behavioral problems. Also schools associated with pedology (pediatric) institutes belong to this cluster. As does education for children in judicial juvenile institutions.

The youngsters in special schools will go on to secondary special education when they reach the age of twelve. There they can stay until they reach the age of twenty.

It could be a sign of learning disorder when children try hard and still struggle with specific skills over time. The child has a learning disorder when the child has difficulty in one or more sections of Learning, even when the intelligence of the child isn't affected. "The reason for children's poor academic performance is that they have significant difficulties in listening, speaking, reading, writing, calculating, thinking and other aspects of learning ability, social interaction, and behavioral adjustment" (Bora, 2015)

Some of the symptoms of learning disorders are
- Difficulty telling right from left
- Reversing letters, words, or numbers, after first or second grade
- Difficulties recognizing patterns or sorting items by size or shape
- Difficulty understanding and following instructions or staying organized
- Difficulty remembering what was just said or what was just read
- Lacking coordination when moving around
- Difficulty doing tasks with the hands, like writing, cutting, or drawing
- Difficulty understanding the concept of time

Examples of learning disorders include
- Dyslexia – difficulty with reading
- Dyscalculia – difficulty with math
- Dysgraphia – difficulty with writing
(CDC, 2020)

3.3 Sub question 3: What game design methods can be used for these youngsters with learning disabilities?

For this specific group of youngsters it is really important that the game is very clear. Making it clear and very easy to use is mostly mistaken for childish. That is one of the important things to take into account. The game should be easy but not childish.

According to the social workers from Lingen (Germany), who work with children with LD the game must consist of very clear and easy language. The youngsters with LD in Lingen can't read very well or can't read at all. They recommended that the game should include voice messages or voice overs to let the kids interact with the game. They also stated that the character must look very human and that metacom symbols could be a good reference.

Eight Metacoms (google, 2020)

When making a game for children with LD it is important to keep a few factors in mind. It is for example important to keep the language you use easy to understand. Learning to read can already be a discouraging task for a child with LD (Charlton, Williams & McLaughlin, 2005). The game also needs guided activity and discovery methods to learn something. Using the curiosity of the child with LD is a primary motivating factor to playing a serious game (Sik-Lanyi et al., 2017, p. 325). Charlton et al. (2005, p25) tells that the element of fun can also help with the motivation. While playing the game, the child learns new skills.

According to research from Shaban & Pearson (2019, p.3) using a game to learn can also have a negative impact on different factors; cognitive load and academic performance. Gamification has a positive impact on learning anxiety. To not overload the player's cognitive, the game should avoid complex tasks. This is very important for children with LD. Children with LD also have a limited working memory capacity. The brain has trouble holding and manipulating information for short moments of time. Therefore, the game should have an appropriate design strategy to minimize the load on the users working memory, but also to help them use their memory effectively. A strategy also helps find a level of cognitive load for each user. Guidelines to design a game for children with LD should be based on the concepts of human-centred design and cognitive load theories. This framework (right) incorporates a set of guidelines based on the concept of HCI (usability, user-centred design and user experiences), working memory and the cognitive load theories. The framework consists of an Analysis, design, development and evaluation.

Study shows that using serious games with very diverse characteristics and mechanics like exploring, keeping score, a story or multiple scenarios can all be used as bullying prevention. This also includes games that focus on showing situations and their outcomes depending on the reaction of the people involved (Calvo-Morata et al., 2020, p. 958).
(Executed by : Charlotte Hoff, creative business student, Saxion University of Applied Sciences)

3.4 Sub question 4: What is a good approach for children with LD?
According to Drs.Karen Dijkstra (remedial educationalist) it is very important to look at the talents and qualities of these children with LD. It is very normal to look at the problems and the labels that these youngsters have. With her own company "Talent & Groei" she coaches children with LD and searches together with them towards their qualities. With these techniques she applies methods that are based on possibilities instead of impossibilities. With her approach she tries to give these youngsters a positive outlook of their abilities.
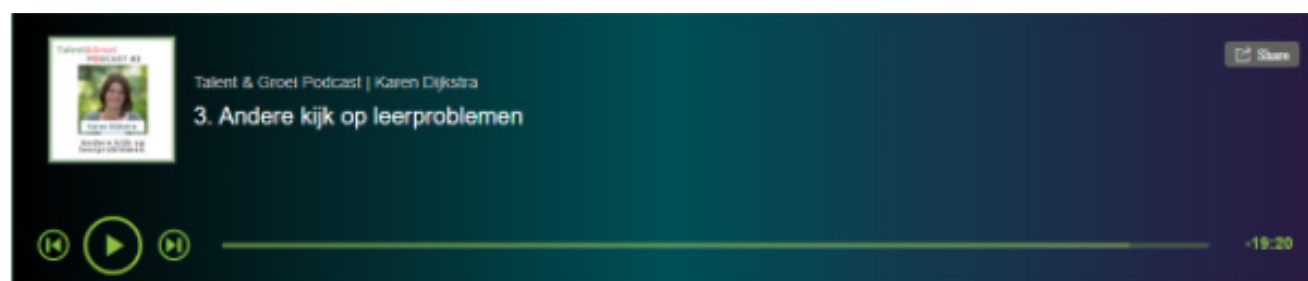
https://karendijkstra.podbean.com 3.andere kijk op leeproblemen.
(hulpvoorkinderenmetleerproblemen.nl/podcast,2020)
https://www.kernvisiemethode.nl/coaches-kernvisie-methode/karen-dijkstra?accepted

ODD (Oppositional Defiant Disorder)
Children with odd are very disturbing and perform resisting behaviour towards authority figures. When they refuse to do anything they are getting angry and fierce. Their cheeky behaviour gets them in trouble in school and at home. Despite the "cheeky mouth" are these children mostly unhappy and don't know how to react on questions and requests from others

CD (Conduct disorder)
Youngsters with CD exhibit behaviour where they mostly use violence like fighting, threatening and lying. They don't listen to the rules and become very angry if they get frustrated. For the surroundings it is very hard to interact with someone who suffers from CD, because most of the time they express aggressive behaviour. Therapy could offer help for the youngsters and their parents.

Kids and youngsters with LD have relative to kids and youngsters without LD, more effort to keep up with the educational level. When the youngsters with LD and their surroundings notice problems. It is possible to get help, where they look to the causation of these circumstances. Together they search for a solution to get the youngsters on the right track again.
Mentaal beter : Gedrag en leerproblemen(mentaalbeter.nl, 2020)

During the interview about the first concept of the game with the social workers of Lingen, we asked different questions about these youngsters with LD. In the following part, the answers of the social workers in Lingen. The results of the survey can be found in chapter 5 of this essay: Results.

3.5 Sub question 5: What are the criteria to create a perfect form of storytelling for these youngsters?

Using storytelling in a game is a lot different from books and film. The story you tell is interactive and has challenges. When making a story for a game, you need to think about factors such as the synthesis between the story and gameplay and how to maintain a good pace in the progression of the story. There is the more traditional way of storytelling, leading the reader or player through a story, whilst they learn more and more, and there is interactive storytelling, where the player is highly interactive and 'chooses' their story (Lebowitz & Klug, 2011, pp. 8).
Interactive storytelling was a way to include children and adults with a learning disability in storytelling activities (Grove, 2012, pp. 40-42). The method used for these activities is the call and response method. Response and repetition are used for developing social communication.
A game is a form of digital storytelling. With digital storytelling there are seven elements important: point of view, dramatic question, emotional content, economy, pacing, the gift of voice, and soundtrack (Sylvester & Greenidge, 2009, p. 292).
Firstly, the story comes close to the player by expressing personal experiences through a first-person point of view. By setting up a conflict from the beginning, the viewer will hold attention till the story is over. The story should evoke emotion, for example loneliness, confidence or vulnerability. The soundtrack of the game should enhance and create an emotional response. A very essential element for the effectiveness of digital storytelling is the narration of the story (Sylvester & Greenidge, 2009, p. 292).

Using the hero's journey is a great way to write a digital story for an educational game. During the hero's journey, the hero listens to a call, ventures into an unknown nondaily world where he carries out the purpose by calling on an assistant and antagonist and finally the hero returns to the known world with a reward.

Designing a game for children with LD asks for a few certain key elements (Wartena et al., 2013). One of the important key issues is using learned information in another situation, named transfer. For children with LD it is crucial to be spot on regarding tone of voice, and design and content. Use authenticity and realism.

Also, an important issue is the bond between user and the virtual character. This can be achieved by video cases, showing real characters in a way an actual facetime call would appear.

The user needs to feel empowered by putting emphasis on the value of the user's capabilities and trust in the competence to give advice. The user is the advisee and not the adviser. Instead of telling the person what to do or not to do, the user is hailed for help. When the advice is given, there also needs to be feedback and a way to redeem their choice (Wartena et al., 2013).

3.6 Sub question 6: What are the games that these youngsters with LD play?

Talking with the social workers in Lingen they gave us the following answers on what kind of games these youngsters with LD play. According to them they play: Fortnite, Fifa, Call of Duty, Grand Theft Auto, Minecraft and are active in chat rooms. These games aren't actually different from the games that other kids play.

S.NO	Popular Video Games Of 2020	Platforms
1	Call Of Duty Warzone	PC, Xbox One, PS4
2	Minecraft	Mobile, Xbox One, PS4, Windows, PS3, Xbox 360, macOS, Linux
3	Animal Crossing: New Horizon	Nintendo Switch
4	Grand Theft Auto 5	PC, PS4, Xbox One, PS3, Xbox 360
5	League Of Legends	Windows, macOS
6	The Last Of Us Part 2	PS4
7	Ghost Of Tsushima	PS4
8	Final Fantasy VII Remake	PS4
9	Streets Of Rage 4	PS4, Xbox One, Windows, Nintendo Switch
10	Doom Eternal	PS4, Xbox One, Google Stadia, Windows, Nintendo Switch

List of popular video games 2020 (fossbytes.com, 2020)

According to the list that "Fossbytes" created, 3 of the most popular games are played by the youngsters with LD.

According to the social workers in Lingen, the more the game is complicated, the borders between reality and fiction are getting blurry. Some of these youngsters will dress up like the characters from the games and start to behave like them.

When I spoke with Ines about the copying behaviour of these children. She also concluded that we need to be very careful in what content we show them. If we show them graphical examples of bullying they can copy that action and behaviour and that is not what you want with this product.

4. Conceptualization

4.1 Brainstorms

4.1.1 Why brainstorms?
Before we can start creating a game, it must be clear that we as a group know what we are making. To get to this point we did brainstorm sessions to declare our concept. These ideas were generated after the first contact with the clients (Ines Schell-Kiehl, Timothy Kariotis and Jeroen Linsen). Due to the COVID-19 pandemic we did these brainstorms online with Discord. These brainstorms help to get creative about the concept and helps us to get a broader view of what is possible for in the game. At first in the brainstorms the team gets all answers in a document or mind-map. Writing down all the answers that come up in your mind called diverging. After you have collected all the ideas and concepts in documents or mind-maps, the team goes to the next phase: converging. In this phase of the brainstorm the team decides which ideas are usable for the concept and project. You limit your ideas and pick the best you can think of with the group. If the group can't get down to less good ideas, the team can decide to vote for each idea. The idea needs to get a specific amount of votes, to pass to the next round. Each voting round you can vote for 1 or 2 ideas less. After these sessions, the team gets a clearer view of what ideas they can work with. From that moment they need to think about the ideas and concepts. Which one would work best and fulfill the clients needs?

4.1.2 Mindmap
With the first contact the client stated some important points of interests that should be taken into account. "don't make the bully the bad guy"(Ines Schell-Kiehl,2020). It is stated clearly that the game consists of two different perspectives."The game should make you aware about the consequences of your actions"(Ines Schell-Kiehl,2020). Feedback is one of the importances of the game. After the conversation with the client, the team gathered for a brainstorm session. In this brainstorm session everybody spit out their ideas of what should be implemented in the game.

Because of this session, the team came up with a mind-map about the things we should implement in the game. The ideas that are written down, aren't specific functions or additions to the game. These ideas are very wide formulated, so there is room for improvement and additions. With the mind-map, ideas were talked about and it gave a visual view to the points of interest in the game.

(in the appendix, there is a better version of this mind-map).

Appendix 4: mindmap(Wijnands, 2020)

4.1.3 Concept ideas

A Game like "Papers, Please" (might involve too much reading)

The player is the supervisor of the internet

He gets confronted with a situation where someone has reported a post as bullying

He has to sort out mean comments, harassment, stalking and all other sorts of cyberbullying and give the right punishment

deleting the post, time out, banning, involving the authorities, reporting a crime, etc.

"Distanced" bystander effect

Not good/wrong like the papers please game, instead we want a bit more dynamic approach.

Good feedback loop to know if you're doing the right thing

As a bystander, learn how to intervene with things

Players see a user do something, you can hack them to see their past activity. Advertise hacking in a good way, it's hacking for a good cause. Just call it differently: "view activity log".

It's hard for them to recognize when something is cyberbullying.

Let the "hacker" communicate with the bully.

Combine perspectives from making bullies bullied. Bystander can get bullied too.

Maybe set it up as cases, multiple people involved. Hacker needs to intervene. The best possible outcome is that there is no more bullying on the internet. You can help in multiple ways, and each way will help you gain points. You can try to get a highscore. Different choices can result in different outcomes.

Emily Is Away game Idea Description:

The game takes place in the player's room where they spend most of their time sitting behind the computer surfing through various social media platforms. You decide to sign up on this new social media platform and prompted to give some personal information in order to create your account. You're able to text, react to posts, upload content etc.

- **Strengths** ->
    - Clearly displays cyberbullying (via different social media platforms)
    - Multiple scenarios and options
- **Weaknesses** ->
    - A short game / experience
- **Opportunities** ->
    - Encourages and teaches users how to use the internet in a safe way
    - Replayability
- **Threats** ->
    - A lot of things going on (multiple notifications, apps etc.)
    - Depending on choices in game, the goal of the game might not be clear or could be misunderstood that could lead to different outcomes
        + E.g. Players could be more wary and feel more discouraged about using the internet

Bystander Effect Game: You are a bystander, who witnesses bullying on a daily basis. The game starts in a bullying situation. There the players can choose to intervene with the situation or not. Depending on what they do, the situation evolves from there.

- Intervening: showing consequences on that, what can be done to stop it etc
- Looking away: consequences regarding bullying -> bullying getting worse, them getting affected as well but always give the opportunity to start intervening as well.

With these game ideas that the group gathered, it was taken into account that the learning goals of each member of the group will be fulfilled. With these ideas the client will be informed about the idea behind it. The capability of the group will also involve the chosen concept, according to the knowledge and experiences the group process could provide.

4.1.4 Final concept

According to a meeting with the client, the concept that is chosen is "Papers please like game". With the combined knowledge and experience of the group, this game would be the most achievable solution for the client and the group. The client was very excited about the concept and saw a lot of possibilities and opportunities in this concept.
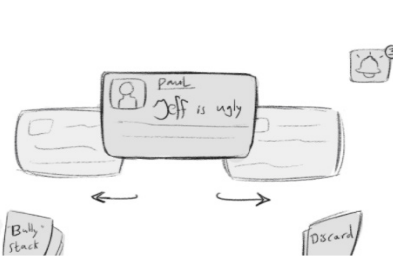
The other two concepts had too many treats that we had to eliminate them. The storytelling would be so big that a functional and working prototype was not feasible in this amount of time. With the combined knowledge of the group, and the learning goals of the other team-members with the conce pt that is chosen, would provide all the elements that everybody wanted to learn. With the combination of the online and offline world, it will be secure that if both worlds are too big, the online game will be fully functional for a prototype.

The player takes the role of a character who is the owner of a website. Their job is to keep their website free from cyberbullying. Every day, the player logs into his computer that is located on his desk. There, their AI assistant "Buddy" confronts them with messages that it flagged as suspicious and could be a case of cyberbullying. Here, the player gets to decide whether or not these posts or messages are cyberbullying and thus worth intervening with them and giving the player of the game a different perspective on cyberbullying. Learning that actions the player's make, have consequences on the bullies and the bullied. Recognizing and taking actions against the bullies in this game, can encourage the player to take actions in real life.

4.1.5 Concept drawings (Muis, 2020)

MockUp of the Desk (Main Screen)   MockUp of the Card Wheel   MockUp of the "Bully Stack"

4.2 Wireframe - online space

After the group decided the concept, the start of the wireframe could be created. Starting with a paper wireframe. This gives a better insight of what buttons to use, and where to place several items in the 2d web space for the game. In the paper wireframe don't use colors of actual designs. Create it for placement of objects and functionality purposes. With Shauntae Jones (group member) I took the responsibility for the wireframe. We choose for the online wireframe creator Balsamiq. Balsamiq is a wireframe creator where you can work with multiple people in one document. We looked for other possibilities, but they cost much more money, or weren't capable of working with multiple people in the same document.
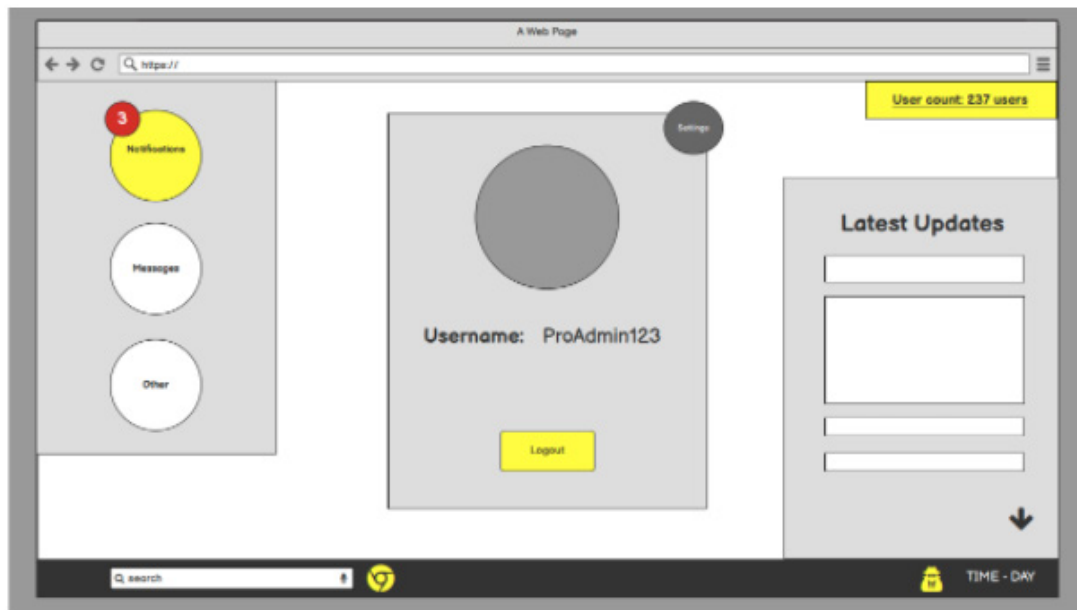
Wireframe lay-out 1.0(Jones, Wijnands, 2020)

With Balsamiq we could create a wireframe that is interactive. This is a good way to approach the target audience. The wireframe is tested by the social workers in Lingen. In the image above (appendix 11), the highlighted parts are clickable. To start with the game the player can click on the notifications button. If the player clicks on the notifications button, the player will get to the next page. There the player will see the cards that are reported. At that moment the player can decide based on what they read, what their following action is. "Investigate" or "Discard". If the player chooses to investigate the card, the card will appear in the bully stack. The player must first review all the cards in the cartwheel before the player can investigate. The player also can discard a card, and it will be deleted from the stack.

We created an interactive wireframe for the client and the target audience. With the feedback we get from this interactive wireframe, we as a group can decide how the approach is going to be. The wireframe is the base of the 2d online space in the game. The first feedback from the client and target audience will appear in the wireframe, before other stages will be changed.

4.2.1 Full wireframe
With Balsamiq the wireframe can be approached online and offline. If the wireframe is exported from online to offline, the wireframe will become a PDF file. This PDF file is an interactive PDF that the user can click through.
The PDF file is an external appendix called : "WireFrame design - Jibe.pdf".

4.3 Game design document (GDD)

Within this graduation project, the team is divided in three different groups. "Engineers (Kevin Sens, Luuk oude Vrielink)","Artists (Annemieke Muis, Max Bischoff, Erika Batarunaite)" and "Designers (Selima Heister, Charlotte Hoff, Joep Wijnands)". The Engineers will create the game in the working environment of Unity. They choose to work with Unity, because of the knowledge they have got in the lessons of their study. With the design document that the designers created, gives a clear insight of what needs to be implemented in the game. In the GDD is a clear given explanation of each feature and game/feedback loop.

External appendix: Game Design Documents (Heister, Wijnands 2020)

The full versions of the GDD is in the external appendix: "GDD _ Features _ Jibe.dox" & ""GameLoop _ FeedbackLoop _ Jibe.docx"

4.4 Storytelling of the offline world

During the process and development of the game, as a group we decided to create an online combined with an offline world. During the process and the research that was gathered, the backstory of the character could be created. This backstory must have to do something with bullying according to the message, the client wants to deliver towards the target audience.

Storytelling is an important part in a game. If the game doesn't have a catchy story, the game will lose its power over time. The mechanics could be awesome, but without a good story or storyline the game is pointless. The storytelling of the game should consist of easy and clear language for the youngster with LD. That means that the storytelling cannot exist of difficult or swear words. The backstory of the player is essential in the additions that are created for the game.

For the full Storytelling Design document, look external appendix ("Storytelling DD _ Jibe.dox")

5. Results

5.1 Questionnaire - What is bullying(rename) regarding sub question 1-B: Which forms of bullying occur the most?

With the first survey about cyber bullying, everybody was asked to fill in their experiences with bullying. This was to get a clearer view and maybe some new forms or insights about cyber bullying. 60 people had filled in this survey. Most of them are students of the CMGT course. These students are online very active and could help us give a clear statement on the question: How do you describe cyberbullying? Most of the attendees replied to this question with "Harassment through the social media forms."

From these 60 attendees 14 people experienced cyberbullying themselves. These people had to fill in what form of cyberbullying they had experienced themselves. Multiple answers could be given in this question.
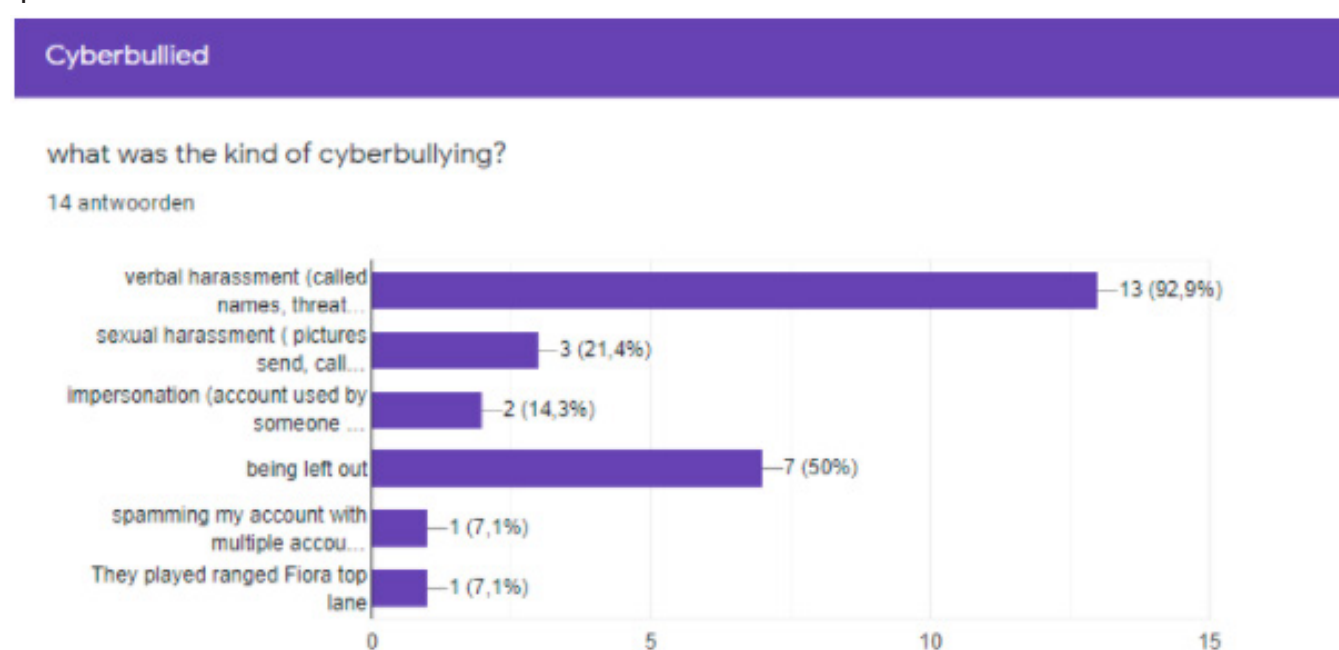
Appendix 5: Survey about cyberbullying (Hoff, Wijnands, 2020)

Most of the people that experienced cyberbullying were verbal harrast online. Not all of the answers that were given through this form, are valid or reliable. These answers are filtered out of the research. The results that came in, gave a clear view of what people think of cyberbullying and how they described it.

The most attendees had experienced seeing someone else getting cyber bullied. Of the 57 people that had filled this out, 46 people had seen verbal harassment online. This keeps that this form of cyberbullying is being recognized by most of the people. According to the deskresearch this form of bullying appeared the most in the online world.

This survey also gave a clear insight in how others react in these situations. Many people didn't do anything about cyber bullying. 31 people took an action to help the bullied person. 22 people "Reported the bully", and 9 people "called out the bully by commenting".

how did you act?

57 antwoorden

I didn't do anything — 30 (52,6%)
— 9 (15,8%)
I reported the bully — 22 (38,6%)
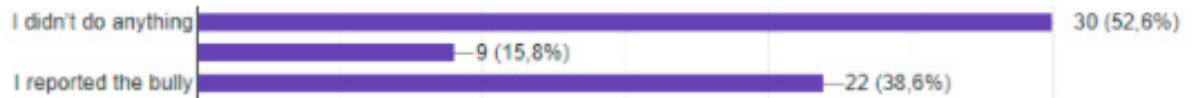
Appendix 5: Survey about cyberbullying (Hoff, Wijnands, 2020)

From the 60 attendees there were 4 people with a learning disability, one with a physical disability and one with ADD (Attention Deficit Disorder).

5.2 Interview social workers Lingen

With the first concept of the game, information was needed to get the best results for the game. By the client (Ines Schell-Kiehl) the social workers in Lingen were recommended. They are willing to help us and give clearer insights in the target audience.

Which types of bullying do you as a social worker see the most with the target audience?

- Cyber-Mobbing
    - mostly via smartphones
    - mostly WhatsApp
        + voice messages and images (because most of them can't read)
        + ganging up to prey on others (sometimes physically)
        + parents are upset that their kids are targeted
    - much less real-life bullying (also due to the intervention of teachers)

(referred to in chapter 3.1: **What is bullying?**)

What helps to calm these children down, when they get the feeling of being overwhelmed?

- Music (there is no specific genre)
- Social Media
- In class, they can leave the room to calm down

Can these children differentiate between emotions like anger and sadness, or do they have problems with that?

- Only autistics have problems reading emotions
- Generally, they are very sensitive
- The topic "Emotions" is being targeted in class
- Are more likely to talk about the bullying they experience compared to regular students
- Teachers can be a replacement for a family

(referred to in chapter 3.4: **What is a good approach for these children?)**

appendix 3: interview / questionnaire Lingen (Heister, Bischoff, Wijnands, 2020)

5.3 Playtest 1: JuuuuPort scouts.

5.3.1 Think out loud method

During this playtest we had the scouts from JuuuuPort. We got in touch with the mentors that guide youngsters with LD. Some of the mentors have LD themselves and others didn't. With this playtest we want to measure if the message that we want to learn and tell them, is transferred. If the game looks good, and how fun it is for them to play. After the playtest we asked them if they had learned something from the game. We explained that the game was in development and that their opinion and tips will be taken into account with the future progress of the game.

Playtest-source: https://luukoudevrielink.nl/web-build/
Tutorial / explanation:
https://drive.google.com/file/d/1Wgl7zNTloasbWYI3JwPWdImViRdWK11b/view?usp=sharing

During the playtest the target audience was asked to think out loud when they are playing the game. The think out loud method gives an insight at the moment that they like or dislike different aspects of the game. You hear their reactions and with the team we noted everything down. The most important feedback we got is listed below.

1. What you could maybe do: hover effect that a subtext is there what they are doing.
2. Instead emojis: suggest messages. So that you can better imagine what it means. It's hard to tell what means what.
3. Can you clarify this via a mode? So simplified mode, one with text and one with voice, for example.
4. When writing messages, I would have liked to have written a message myself.
5. Would have liked to have had more answer options.
6. The history log was not intuitive. If you could have put both on one page instead of "Reports" and "Logs".
7. I would prefer to call out after a chat, as one has the option to go public again if private did not work. (So not blocking the option to call out after chat).
8. The comments are always on the picture. Maybe you should be able to see more of the picture.
9. Resolution screen? What does he do? It is not easy to read and does not exist in the tutorial.

The feedback is valuable for the game and its process. The most feedback that we got will be implemented and processed in the next play test session that is planned for January 20th 2021.

appendix 7: Think out loud results Playtest 1 (Wijnands, 2020)

5.3.2 Questionnaire playtest JuuuuPort

Questionnaire: https://forms.gle/ACtapFLtr4jjGURH7

After the attendees of the playtest played the game, they were asked to fill in a questionnaire about the game. The results show the overall opinion of the attendees.

From the 12 attendees that played the prototype, 10 people filled out the questionnaire.

To measure the likability of the player on the game, we asked the question: "How much fun did you have while playing the game?" They could give a grading from 1 till 10 (1 no fun, 10 much fun) The average score on this was an 8.4 out of 10.

"How hard was the game?" is to measure the difficulty of the game for the target audience. Grading from 1 till 10 to measure it.(1 very hard, 10 very easy). This had an average of 7.2 that is equal to neutral/easy on the difficulty of the game.

The measuring of the players skill, can be measured by the amount of green cards in the resolution screen at the end of the game. "On how many cards did you achieve the green score at the result screen?" is to measure this state. The average score on this was 5.6 cards, rounded 6 cards. That score is equal to a neutral state.

"How much fun was it to divide the cards in the bully and non-bully stacks?" To measure the fun of the dividing element of the game scaled from 1 till 5 (1 not fun at all, 5 fun to do). The average score is 4 out of 5 that is equal to the state that the target audience had fun dividing the cards.

The actions that the players can take during the game to come to the solution and actions that they make, we asked them how much fun they thought these actions were. These questions are scaled from 1 to 5 to measure the fun. 1 is not fun at all, 5 is very fun.

"Overall, how much fun was it to call out the bully while investigating the cards?" that scored an average of 4.3 (equal to fun/very fun.)

"Overall, how much fun was it to chat with the bully while investigating the cards?" This scored a little higher with a 4.5 (equal fun to very fun.)

"Overall, how much fun was it to check the history of the bully while investigating the cards?" With a score of 4.2 (equal fun to very fun.)
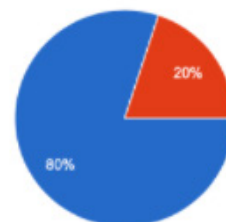
All the attendees of the playtest would recommend this game to their friends to play it. And 80% of the people that have played the playtest already would play it again.

appendix 8: Questionnaire results Playtest 1 (Hoff, 2020)

5.4 Playtest 2: JuuuuPort scouts.

Within the terms of the graduation semester, there was no possibility for us to do the second playtest with the JuuuuPort scouts. This test will be taken later than the deadline for the graduation report. The first playtest with the scouts went very well, and they gave a lot of great feedback that we included in the game. With the implemented feedback from the scouts and the importation of the offline world, we hope the subjects that were not clear, are clear now. That the lesson we want to give the player is received by the scouts. The prototype is ready for use with the implemented feedback from the first test session. In appendix 8 you can find the procedure of how the playtest will be executed.

Second prototype:
https://luukoudevrielink.nl/web-build/

6. Conclusion and discussion

During this project I did research towards the question:"Which requirements should a storytelling game for youngsters with (LD) consist of, to create more awareness and a call to action against bullying and cyberbullying?" A prototype has been developed for this, to test it on the target audience with the think out loud method and questionnaire.

6.1 Conclusion

> Sub question :1 What is Bullying?

Research has shown that the most common form of cyberbullying is harassment. The results of the questionnaire that give answers about the different types of bullying, conclude that most people encountered harassment when they got cyberbullied. This also states that harassment is the most easy to recognize when talking about cyberbullying.

> Sub question 2: What are the cognitive abilities of mentally disabled youngsters with learning disabilities?

Due to the research that is found about the different clusters can be derived that this game is developed for people of cluster 4 (children with disorders and behavioral problems). This concludes that if the game needs to be playable in the other 3 clusters, there must be new research and new design methods to achieve this goal.

> Sub question 3: What game design methods can be used for these youngsters with learning disabilities?

The game test results show that the design method that is applied on the game, works with the target audience. These results show that the information that is given by emoticons were clear. They did understand what the different actions do. The target audience stated that the game was not difficult to understand. The longer they played the easier the game gets.

The resolution screen of the game wasn't clear and understandable for the attendees of the playtest. To get a better resolution screen the game must consist of the feedback that will be shown to the player. What went wrong and what can the player do to score better. Giving the player access to this feedback, the player can see and improve their game experience.
The results from the questionnaire of the game test show that 88% of the attendees learned a bit or a lot from the game. This concludes that the content of the game is clear and the internal message of the game has been transferred. Making usage of clear languages and no pressure during the game with tasks and time limits, gives them confidence during the game.

Sub question 4: What is a good approach for children with LD?

With the results from the questionnaire with the social workers from Lingen, it can be stated that the target audience is very sensitive. These youngsters are more likely to talk about bullying compared to other students. People like teachers that are really close with these children, can be a replacement for family. According towards the research, it can be concluded that the children need to focus on their possibilities instead of impossibilities.

Sub question 5: What are the games that these youngsters with LD play?

According to the social workers in Lingen, the more the game is complicated, the borders between reality and fiction are getting blurry. Some of these youngsters will dress up like the characters from the games and start to behave like them. What can be stated is that the games that these youngsters play aren't that different from youngsters without LD.

Sub question 6: What are the criteria to create a perfect form of storytelling for these youngsters?

This can be concluded when adding the "offline world" to the second playtest, to test if this makes the game more difficult. The hypothesis says that the added interaction and storyline will also make the game more enjoyable to play. The results and conclusion of this subquestion will be presented during the end presentation.

The main question of this research was: Which requirements should a storytelling game for youngsters with (LD) consist of, to create more awareness and a call to action against bullying and cyberbullying?

Final conclusion

To create a good storytelling game for kids with LD, the game must consist of easy language, clear design and not too complicated. Making good choices in the use of color to recognize right from wrong. If the player receives good feedback, the player will be triggered to challenge themselves to achieve better scores. There needs to be a good balance between fiction and reality, to prevent copying behaviour. If the player can change the outcome of the situation by their own choice, it can be derived that the game will be more fun for them to play. This game/prototype will be a good opportunity for these youngsters to recognize cyberbullying according to the results that most of them had learned during the playtest.

6.2 Recommendations

Concluding to this research that is done for the subject, the client (Ines schell-Kiel) should proceed with the user / playtests that are created by this research. With the results that come out of the tests, the client can look forward to optimising and upgrading the prototype. With the different outcomes of the second playtest, the client should introduce their project/prototype to possible investors. These investors can help with the finalizing of the first demo that could be demonstrated towards possible future companies for a collaboration.

With these collaborations the demo could be upgraded towards different target audiences, expanding the age of the target audience to address the complexity of cyber bullying at a broader group of users. There is a lot of different information gathered due this graduation semester, about the different possibilities and approaches for the game. Known for fact, that the special schools are divided in different clusters. Expanding this game to all the different clusters will include all the people suffering from mental or physical disabilities that have to conquer or see cyberbullying. Concluding that the game now is made for cluster four (children with disorders and behavioral problems). Making the game available for multiple disabilities, will request new research processes. What will be the do's and don't for different target audiences depends on the targeted disability? The game must exist of different versions that will be playable for multiple target audiences, and could be integrated in school projects on special schools. The educational purpose of the game is already introduced in a special school in Enschede (Het Reliëf). Due to the corona virus and the lockdown the school couldn't participate in the testing phase, but are willing to help in the future with the process and expansion of the game.

7. Discussion

During the project I realised that we actually missed some people in the group with certain knowledge. These people were the social workers that could provide us with the right information about the target audience. Because of the "Social Work study" of Saxion, don't make use of the Smart Solutions Semester, no Social Work students were assigned to this project. With eight people from the "CMGT" study and one of the"Creative business" studies, I felt responsible for this research about the target audience. I wanted to get the best possible result for my graduation project, but had to do a lot of research about the topics that have nothing to do with the study that I am graduating on. These research parts were sometimes bigger than I expected. With this situation I went to Ines, and talked about this situation together. We both came to the same conclusion and were searching for possibilities in the short amount of time left. Unfortunately we didn't get the change to work with the social workers from the study due the lack of time and the pandemic. For some of the information that I gathered about the target audience, I went to friends of mine. They work with the target audience, and could provide me with advice and steps that needed to be taken into account. One of them was willing to help with the creation of the persona's.

8. Reflection

I felt really comfortable in the beginning phase of this graduation semester, the concepting phase, because of the knowledge that I gained during my minor. I provided my other team members with different techniques for brainstorm sessions. During these sessions, I felt responsible to keep meetings focussed and well-structured. This is done by steering the conversation in the right direction and cutting the knot when needed. Additionally, I tried to prevent people from getting distracted. This is also one of my weak points because I tend to lose focus of the bigger picture when I try to do so. An additional learning opportunity for me is that I need to learn that not everybody has the same communication skills and interests as I do.

The client provided me with clear information about the project in the graduation semester. Therefore, the process of writing the implementation plan and creating the main- and sub-questions went fluently. Because of these sub-questions, it became easier to add certain elements to the game design document. With the knowledge gained by creating the game design document, a fully interactive wireframe could be created. After the wireframe was created I worked on several interviews to test with the target audience. I am satisfied with the working process that helped a lot in the design process of the game.

I could not contribute a lot within the production/development phase of my graduation due to the lack of knowledge within the field of game development. But with my creativity and good communication about what is feasible and what is not, I could fulfill my role as a designer. The products and different tasks that I have created/fulfilled are from a professional level of skill which results in all of my work ending up in the final prototype. One of the main tasks that I have worked on during this phase is the storytelling aspect of the game. During this challenge, I had to take all aspects of serious/educational gaming into account to make sure that the story would work for the selected target audience. This helped me to gain knowledge that I can apply in more things than only games in the future. Within the period of the graduation semester and the Covid-19 lockdown, this is only based on research instead of practical findings.

I started my study as a concept creator and a Designer for 2D media projects. Though, during my study, I have learned that I can excel most by taking a leading role within teams.
Throughout the different projects, I have gained knowledge of all the different aspects of the CMGT courses. This knowledge allows me to accurately estimate the amount of time that needs to be spent on a certain task. Because of that, I can easily identify what is feasible and where opportunities are to be found. This helps to motivate me and my other team members to work towards the best possible result.

During my internship, I learned that a safe environment for work is "key" to get the best out of your coworkers. By a safe working environment, I mean honesty and comfort among the team members. This stimulates a bond in which people are understanding and willing to help each other under different circumstances. Additionally, it stimulates reliable and valid feedback that is needed for good reflection.

When I want to take the next step to become a professional project manager, I should work on my research and planning capabilities. There are parts within these areas that are less interesting to me, which can result in me postponing them. During my time in projects, I have learned that these parts are important as well. Additionally, I can improve my planning by scheduling safe margins for tasks that could turn out to take longer than expected, taking into account that the safe margin is acceptable and realistic. This offers peace and comfort for me as a perfectionist which I can also radiate towards others because there is leeway within the planning. My research capabilities can be improved by clarifying the question behind the question. To achieve this, I should use a solid research method that provides the needed grip and structure throughout the research process.

I'm not specialized in a specific competence of a CMGT student. Instead, I am a combination of all of them. I take all elements of a project into account when planning, brainstorming, concepting, etcetera. Trying to put the right people in the right spot and focusing on the strengths of my team members. In my communication skills, there is a strong sense of empathy that helps me to see the opportunities and possibilities. By working on all of the twelve competences during my study and graduation, I can conclude that I see myself as an organizer. Not only designing and concepting, but also leading teams and groups. I always want to create a nice work environment and keep the focus on the end goal. For five and half years I have been creating projects for KNT & CMGT, now I am ready to create my own.

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10. Appendix

appendix 1: persona 1: Social worker

Anna Bemmink

"Treat others as you would like them to treat you"

Age: 23
Work: Social Worker
Family: No marriage
Location: Enschede, Overijssel

Personality

Introvert	Extrovert
Thinking	Feeling
Sensing	Intuition
Judging	Perceiving

Social | Positive | Objectively | Honest

Goals

- A social worker who will fulfill the needs of deaf and bad hearing people.
- Always trying to stay positive in life, no matter the situations in life.
- Enjoy the little things in life.

Frustrations

- Perfectionism, the first try must be the best.
- Scared to make mistakes.
- Overthinking easy situations, that make the decision even harder.

Bio

Anna is a 23-year-old social worker, that has a lot of ambitions in her life. She wants to help others and that is why she became a social worker. She looks objectively at every situation and is a real go-getter. Always striving towards the best possible solution and doesn't take no for an answer.

Motivation

Incentive

Fear

Growth

Power

Social

Preferred Channels

Online & Social Media

Gaming

Netflix and other video stream channels

Youtube

Appendix 2: Persona 2, youngster with LD

Jeremy Groeneveld

Social   Daydreamer   Righteous

Short fuse on injustice

"Righteous actions will give righteous outcomes."

Age: 15
Work: No work
Location: Enschede

Personality

Introvert	Extrovert
Thinking	Feeling
Sensing	Intuition
Judging	Perceiving

Goals

- Determined to do things he likes.
- When the focus is right, go all the way.
-

Frustrations

- Lazy in things he doesn't like.
- Negative self-image.
- Unsecure
- Autism, calls himself "Downy"

Bio

A boy who is determined in the things he likes to do. You can't disturb him when he is doing the things he likes. Thinking in black or white, but when the time is right, knowing what did go wrong and reflects on his actions. A social boy that is very righteous, and can't handle injustice. Do not mince words when felt unfairly accused.

Motivation

Incentive

Fear

Growth

Power

Social

Preferred Channels

Online and Social media

Gaming

Netflix

Youtube

appendix 3: GUI game
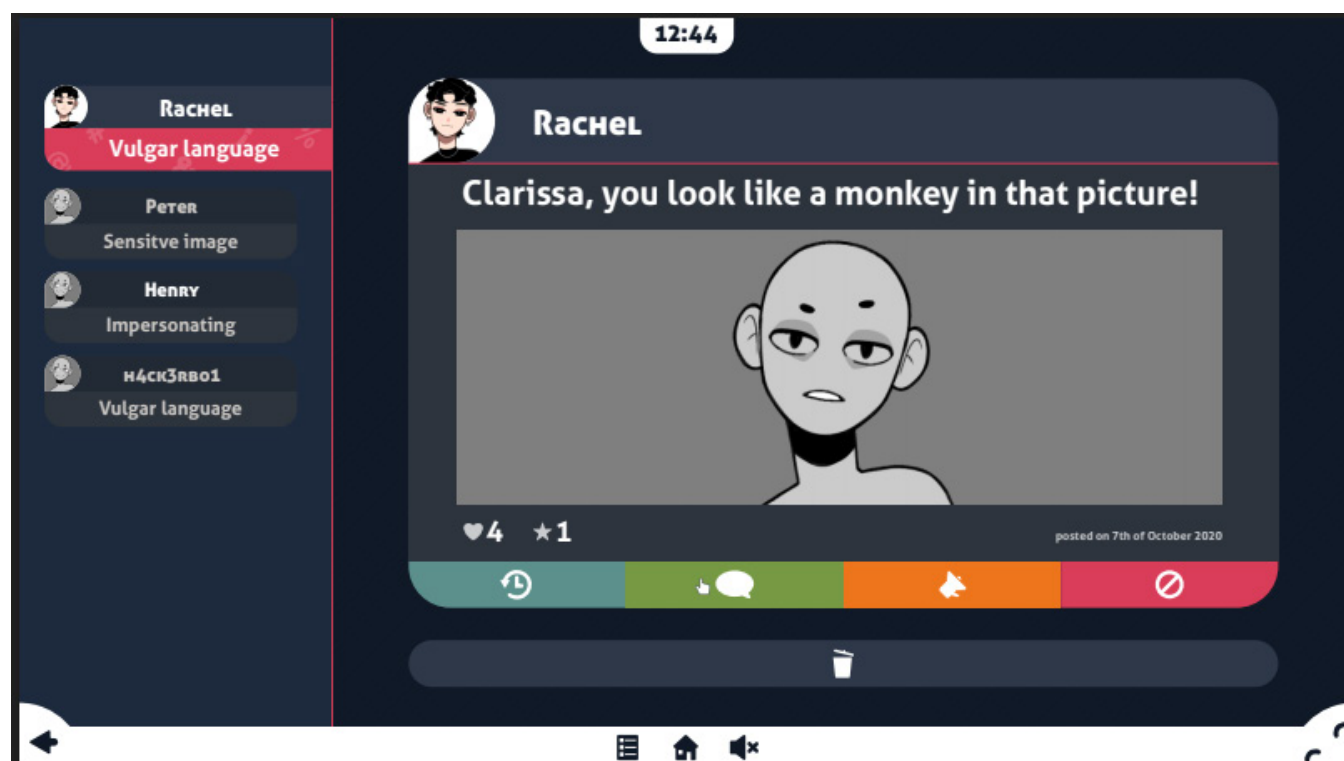
Appendix 4: mindmap

Appendix 5, survey about cyberbullying

Survey about cyberbullying

This is an anonymous survey about cyberbullying, being cyberbullied, and seeing cyberbullying happen.

How do you describe cyberbullying? *

Korte antwoordtekst

---

have you ever been cyberbullied?

○ Yes

○ No

Cyberbullied

Beschrijving (optioneel)

---

what was the kind of cyberbullying?

☐ verbal harassment (called names, threatened)

☐ sexual harassment (pictures send, called names, asked to do)

☐ impersonation (account used by someone else, account made about you)

☐ being left out

☐ Anders...

who cyberbullied you?

- ☐ Someone anonymous
- ☐ Someone I vaguely know (people from school, work, etc)
- ☐ someone I know well (friend, family)
- ☐ Anders...

how did you act?

- ◯ I didn't do anything
- ◯ I called out the bully by commenting
- ◯ I reported the bully
- ◯ I talked to the bully personally (offline or online)
- ◯ I told authority (parents, teachers, etc)
- ◯ Anders...

have you ever seen someone else being cyberbullied?

- ◯ yes
- ◯ no

Bystander in Cyberbullying

Beschrijving (optioneel)

---

what kind of cyberbullying did you see?

- [ ] verbal harassment (called names, threatened)
- [ ] sexual harassment (pictures send, called names, asked to do)
- [ ] impersonation (account used by someone else, account made about you)
- [ ] being left out
- [ ] Anders...

---

how did you act?

- [ ] I didn't do anything
- [ ] I called out the bully by commenting
- [ ] I reported the bully
- [ ] I talked to the bully personally (offline or online)
- [ ] Anders...

---

have you ever cyberbullied anyone?

- ( ) yes
- ( ) no

Cyberbullying

Beschrijving (optioneel)

What kind of cyberbullying was this?

- [ ] verbal harassment (called names, threatened)

- [ ] sexual harassment (pictures send, called names, asked to do)

- [ ] impersonation (account used by someone else, account made about you)

- [ ] leaving someone out

- [ ] Anders...

Who did you cyberbully?

- [ ] Someone anonymous

- [ ] Someone I vaguely know (people from school, work, etc)

- [ ] someone I know well (friend, family)

- [ ] Anders...

How did the bullied react?

- [ ] they didn't do anything

- [ ] they called out by commenting

- [ ] They reported me

- [ ] They talked to me personally (offline or online)

- [ ] Anders...

Information

Some information about you.

write down your experience with cyberbullying

Tekst lang antwoord

Are you male or female? *

○ Female

○ Male

○ Prefer not to say

○ Anders…

What is your age? *

○ below 16

○ 16

○ 17

○ 18

○ 19

○ 20

○ above 20

Do you have ... *

○ a physical disability

○ a learning disability

○ none of the above

○ Anders...

Appendix 6: Interview with the social workers from Lingen

1. Was haltet ihr von der Farbgestaltung des Spiels?
What do you think of the color pallet of the game?
Important is that: Red = wrong; Green = right

2. Könnte das UI zu kompliziert für die Zielgruppe sein?
Do you think the UI is too complicated for the target group?
Characters look not human enough
Metacom symbols could be a good reference

3. Wie kann man am besten mit der Zielgruppe interagieren?
What is the best way to interact with the target audience?
The use of very clear and easy language

4. Welche Art von Mobbing beobachtet Ihr als Sozialarbeiter meistens bei der Zielgruppe?
Which types of bullying do you as a social worker see the most with the target audience?
- Cyber-Mobbing
- mostly via smartphones
- mostly WhatsApp
- voice messages and images (because most of them can't read)
- ganging up to prey on others (sometimes physically)
- parents are upset that their kids are targeted
- much less real-life bullying (also due to the intervention of teachers)

5. Was sind die kognitiven Fähigkeiten von Jugendlichen mit Lernschwächen?
What are the cognitive abilities of the youngsters with learning disabilities?
- heavily and multiple disabilities
- heavily motorically, physically and emotionally disabled
- The best ones can calculate up to 100.000
- The entry-level for the game should be as low as possible

6. Gibt es Brett-, Karten-, oder Computerspiele, die diese Kinder in ihrer Freizeit spielen?
Are there any board, card or computer games these children play in their free time?
- Fortnite
- Fifa
- Call of Duty
- GTA
- Minecraft
- Chat Rooms
- Borders between reality and fiction get blurry the more complicated the game is (some kids dress up like people from games and start behaving like them)

7. Können diese Kinder zwischen Emotionen wie Wut und Traurigkeit unterscheiden, oder haben sie Probleme damit?
Can these children differentiate between emotions like anger and sadness, or do they have problems with that?
- Only autistics have problems reading emotions
- Generally, they are very sensitive
- The topic "Emotions" is being targeted in class
- Are more likely to talk about the bullying they experience compared to regular students
- Teachers can be a replacement for a family
-

8. Wie viel Zeit verbringt die Zielgruppe auf Sozialen Medien?
How much time does this target audience spend on social media? (just if they know)
- At home, they spend around 3-5 hours on social media
- They use all the trendy apps other people use as well (Instagram, Facebook, TikTok, YouTube, etc.)
- There are some kids that have no contact with social media
- they aren't being targeted because bullies look for people which are more on eye-level

9. Wie gut können die Jugendlichen lesen? Können sie sich für längere Zeit auf das Lesen konzentrieren?
What kind of reading abilities do these kids have, are they capable to endure longer reading sessions?
- a lot of kids can't read at all
- a possibility for reading out to these kids

10. Was hilft den Kindern dabei sich zu beruhigen, wenn sie das Gefühl haben gestresst zu sein?
What helps to calm these children down, when they get the feeling of being overwhelmed?
- Music (there is no specific genre)
- Social Media
- In class, they can leave the room to calm down

Kevin L.
Tuesday
8-12-2020

Original answer of the tester (German)	Translated version (English)
Was versucht ihr mit dem Spiel zu erreichen? Ich kann es mir schon denken aber frag trotzdem mal	What are you trying to achieve with the game? I can already guess but still ask.
Was man vielleicht machen könnte: Hover effekt, dass ein Subtext da steht was die machen.	What you could maybe do: hover effect that a subtext is there what they are doing.
Resolutionscreen? Was macht er? Der ist nicht gut lesbar und auch im Tutorial nicht vorhanden.	Resolution screen? What does he do? It is not easy to read and does not exist in the tutorial.
Einige Dinge sind halt schwierig zu differenzieren: Ist es mobbing oder nicht? Weil einige dinge sind zwar gemein aber nicht wirklich mobbing.	Some things are just difficult to differentiate: is it bullying or not? Because some things are mean but not really bullying.
investigative work is super nice!	
Instead emojis: Nachrichten vorschlagen. Damit man sich was besser darunter vorstellen kann. Es ist schwer zu sagen, was was bedeutet.	Instead emojis: suggest messages. So that you can better imagine what it means. It's hard to tell what means what.
dramatic reading of the messages --> absolutely accurate (Writer note: a bit ironic perhaps?) Sehr authentische Gespräche	* dramatic reading of the messages *-> absolutely accurate (Writer note: a bit ironic perhaps?) Very authentic conversations.
Sehen was man falsch gemacht hat, der Lerneffekt besteht darin dass man sieht, was man falsch gemacht hat	Seeing what you did wrong, the learning effect is that you can see what you did wrong.
Artstyle gefällt mir sehr gut! Ziemlich verständlich. Alles sehr groß gehalten. Nachrichten sind im Vordergrund. Im Hintergrund passiert n bisschen, das ist hat was beruhigendes, macht den Hintergrund nicht so statisch.	I like Art style very much! Pretty understandable. Everything kept very large. News is in the foreground. Something happens in the background, there is something reassuring about that, doesn't make the background so static.
Punktesystem: Ist es einfach nur ein Highscore? Wozu dient er? (Nicht klar, dass es User sind.)	Points system: is it just a high score? What is it used for? (Not clear that they are users.)
Progression einbauen, um die Spieler feszuhalten: Assest Änderungen, dinge zu zeigen die den Spieler belohnen.	Build in progression to keep the player locked: Assest changes, showing things that reward the player.
dramatic reading of message (-->very amused by bully comment)	
Verwirrt: Wenn man mit dem Bösen smiley einmal geantwortet hat, ihn wieder ausblenden.	Confused: Once you have answered with the evil smiley, hide it again.
Die Antworten der User und des Players sind authentisch.	The answers of the users and the player are authentic.
Nicht klar, dass sich die Bilder auf die Posts beziehen. Grammatik überprüfen.	Not clear the images relate to the posts. Check grammar.
Animationen sind cool! Wirkt nicht x-beliebig sondern sehr liebevoll! Sehr nice!	Animations are cool! Doesn't seem arbitrary but very loving! Very nice!

Paula B.
Tuesday
8-12-2020

Original answer of the tester (German)	Translated version (English)
Very interesting and gigantic cursor!	
Die Idee ist richtig gut! Muss ich ja sagen. Gibt es in dem Spiel ein Ende, oder kann man das unendlich lange Spielen?	The idea is really good! I have to say yes. Is there an end to the game, or can you play it indefinitely?
Einen Post: "Loser Nummer gegeben" --> Logikfehler. Antworten passen nicht zusammen. -->	A post: "Loser number given" -> logic error. Answers don't match. ->
Wants to be part of the next playtest session.	

	Original answer of the tester (German)	Translated version (English)
Carolin B.		
Tuesday	Bully Stack Overview: Ist unklar was man da machen soll.	Bully Stack Overview: It is unclear what to do there.
8-12-2020	Gibt es eine Auflösung?	Is there a resolution?
	Mir ist nicht ganz klar was der Unterschied ist zwischen schicke der Person eine Nachricht oder Ermahne die Person. --> unterschied kommt nicht ganz klar raus dabei.	I'm not entirely sure what the difference is between sending the person a message or admonishing the person. -> difference does not come out very clearly.
	Gut: Das ist noch die Sperren funktion gibt - die Spielenden haben die Möglichkeit die sperrfunktionen auszuwählen.	Good: That is still the blocking function - the players have the possibility to select the blocking functions.
	Text to Emojis --> very good! Eine gute Sache die wir noch einbauen könnten.	Text to Emojis -> very good! A good thing that we could add.
	Schonmal ein guter Einblick. Die Fälle sind auch gut.	Already a good insight. The cases are good too.
	Wobei: So ein paar Fälle die sich nicht im bereich social media abspielen. Also dinge, die die Jugendliche Lebenswelt eher ansprechen.	Whereby: A few cases that don't happen in the area of social media. So things that appeal to young people.
Justin K.	Original answer of the tester (German)	Translated version (English)
Tuesday	Es lädt ganz langsam!	It loads very slowly!
8-12-2020	(Writer's note: müssen wir beobachten und ggf optimieren)	(Writer's note: we have to observe and optimize if necessary)
	Writer's note: seems to have trouble understanding the game at first. I think the game is not intuitive with people. A lot of options but little explanation. Could be because of the missing Tutorial. Player seems confused and overwhelmed, perhaps?	
	Resolution Screen ist nicht verständlich.	Resolution screen is not understandable.
	Abbot ist nicht klar genug hervorgehoben.	Abbot is not highlighted clearly enough.
	Player wusste nicht wo man ihn findet Gefällt ihm so langsam	Player did not know where to find him He likes it so slowly
	Das Spiel war ganz cool. War wie eine Art chat, oder anfrage wie bei JUUUPORt auch.	The game was really cool. Was like a kind of chat, or a request like JUUUPORt.
	Sehr sehr schön.	Very very nice.
	Gibt nichts zu meckern.	There is nothing to complain about.
	Schönes Spiel! Wirklich Was war schwer zu verstehen: Am Anfang schon schwer, gerne mehr Hilfe.	Nice game! Really what was difficult to understand: Difficult in the beginning, more help would be welcome.
	Aber wenn man einmal reinkommt dann gut.	But once you come in, it's fine.

	Original answer of the tester (German)	Translated version (English)
Christina		
Tuesday	Cursor ist super! Im Sinne des Zugangs und Barrierefreiheit ist das eigentlich gar nicht so schlecht!	Cursor is great! In terms of access and accessibility, that's actually not that bad!
8-12-2020	Nicht gleich verständlich was man im Card Wheel machen soll. (Kann auch am abwesenden Tutorial liegen)	Not immediately understandable what you should do in the card wheel. (Can also be due to the absent tutorial)
	Was soll ich jetzt machen?	What should I do now?
	Writer's note: Ein bisschen überfordert was man auf den verschiedenen Screens machen soll. Sehr viel los auf dem Bully Stack Overview, die Spieler sind überfordert.	Writer's note: A bit overwhelmed with what to do on the various screens. Very busy on the Bully Stack Overview, the players are overwhelmed.
	Der Resolutionscreen ist unverständlich!	The resolution screen is not clear
	Das ganze Game ist sehr unverständlich. Es ist schwierig zu verstehen was man machen soll.	The whole game is very complicated. It is difficult to understand what to do.
	Inhaltlich kann ich das unterscheiden aber zu alt für Videospiele.	In terms of content, I can tell the difference, but she is too old for video games.
	Frustriert. Versteht das Spiel nicht Richtig und findet die Emojis sind misleading. (Grün: Einverstanden mit den Mobbern, Rot: Gegen die Mobber)	Frustrated. Does not understand the game correctly and thinks the emojis are misleading. (Green: agree with the bullies, red: against the bullies)
	Aber für Förderkinder wohl sehr guter Lösungsansatz!	But for sponsored children this is probably a very good solution!
	Artstyle: Sehr gut! Farben sehr schön, Zeichnungen sehr gut.	Artstyle: Very good! Colors very nice, drawings very good.
	Man muss selber denken, einschätzen. Man kann das schnell in die Menge bringen. Ich finde es total gut. Ich Hatte ein paar Verständnisprobleme, aber ich glaube für Jugendlichen ist es sehr gut. Kann man das über einen Modus klären? Also vereinfachten Modus, einen mit Text und einen Sprachgesteuerten, zum Beispiel.	You have to think for yourself, assess. You can get that into the crowd quickly. I think it's really good. I had a few comprehension problems, but I think it's very good for teenagers. Can you clarify this via a mode? So simplified mode, one with text and one with voice, for example.
	Very interested in presenting the game!	
Ayla	Original answer of the tester (German)	Translated version (English)
Tuesday	Erstmal kurz reinfinden, aber jetzt wirds langsam verständlich! Es ist sehr gut, sehr leicht verständlich.	First find out for a moment, but now it is slowly becoming understandable! It's very good, very easy to understand.
8-12-2020	Vielleicht hab ich zu Kompliziert gedacht.	Maybe I was thinking too complicated.
	Konzept vom Spiel eigentlich ganz gut. Verständlich für jüngere Leute!	The concept of the game is actually quite good. Understandable for younger people!
	Beim Nachrichten schreiben, hätte ich gerne selbst eine Nachricht verfasst.	When writing messages, I would have liked to have written a message myself.
	Emojis waren leicht zu verstehen was die gemacht haben.	Emojis were easy to understand what they were doing.
	Writer's note: Seems very immersed	

	Original answer of the tester (German)	Translated version (English)
Calvin K.	Original answer of the tester (German)	Translated version (English)
Tuesday 8-12-2020	War alles normal. Das Spiel sah gut aus und optisch war es auch gut.	Everything was normal. The game looked good and the graphics looked good too.
	Hätte schon gerne mehr Antwortmöglichkeiten gehabt.	Would have liked to have had more answer options.
	Writer's note: Is a bit overwhelmed, doesn't know what to do. Needs a lot of Guidance.	
Dilara B.	Original answer of the tester (German)	Translated version (English)
Tuesday 8-12-2020	Ich hab "Ich bin Fett" als Flagge markiert. Aber eigentlich ist das ja kein Cybermobbing oder? Ist ja ein Anschlag gegen sich selber? Kann man sich selber Cybermobben? Ich schau mal mehr nach.	I marked "I'm fat" as a flag. But actually that's not cyberbullying, is it? Is it an attack against yourself? Can you cyberbully yourself? I'll look more.
	Ich weiß ich nicht was ich mit "Ich bin Fett"-Karte anfangen soll. (Needed help there to clarify things)	I don't know what to do with the "I'm fat" card. (Needed help there to clarify things)
	Hat die Catfish-Karte nicht richtig verstanden.	Did not understand the Catfish card correctly.
	Resolutionscreen ist nicht verständlich. Weiß nicht genau was die darstellen sollen. Erst nach Erklärung verständlich.	Resolution screen is not understandable. I don't know exactly what they should represent. Understandable only after explanation.
	The Ginger-Card: The first "friendly-reply option" is not friendly. Doesn't know if everyone understands this kind of human.	
	Writer's note: Seems very immersed and intrigued in the game. Is amused and intriguied by the questions. Very invested in making the right decision.	
	Bug: Text springt aus dem Bildschirm.	Bug: Text jumps out of the screen.
	Ich find das Spiel ganz gut! Ich denk dass es anderen Menschen helfen wird. Ich denke das diese kleine Simulation gut ist für Leute die sich nicht gut mit dem Thema auskennen! Man kann davon lernen.	I think the game is pretty good! I think it will help other people. I think this little simulation is good for people who are not very familiar with the subject! One can learn from it.
Henriyeta	Original answer of the tester (German)	Translated version (English)
Thursday 10-12-20	Seite war reingezoomt, obwohl der Browser auf 100% war.	Page was zoomed in even though the browser was at 100%.
	Unsicher ob sie im Spiel durch ist oder ob es nur ein Teil vom Spiel gespielt hat.	Unsure if she is through in the game or if she only played part of the game.
	Vielleicht ein direktes Feedback würde helfen zu begreifen wo man gerade innerhalb des Spiels ist.	Maybe direct feedback would help to understand where you are in the game.
	War relativ simpel. Texte waren leicht verständlich.	Was relatively simple. The text was easy to understand.
	Was ich nicht verstanden habe: History Log war nicht intuitiv. Hätte man beides auf eine Seite packen können anstatt auf "Reports" and "Logs"	What i didn't understand: The history log was not intuitive. If you could have put both on one page instead of "Reports" and "Logs".

|	Original answer of the tester (German)	Translated version (English)
Josefine R. Thursday 10-12-20	Am Anfang ist es relative verwirrend, aber letztendlich ist es noch ne Demo. Man weiß wenn man auf die zwei Augen klickt, weiß man auch was man machen muss.	In the beginning it is relatively confusing, but in the end it is still a demo. You know when you click on the two eyes, you also know what to do.
	Spieler die das öfter gespielt haben, kommen wohl besser klar.	Players who have played this more often get along better.
	Möchte lieber das Call-Out auch nach Chat, da man die Möglichkeit hat nochmal öffentlich ran zu gehen wenn Privat nicht ging.	I would prefer to call out after a chat, as one has the option to go public again if private did not work.
	Findet das Spiel interessant. Man muss sich fragen, wo fängt mobbing an und das ist sehr gut.	Finds the game interesting. You have to ask yourself where does bullying start and that is very good.
Fugmann **Benedikt**	Original answer of the tester (German)	Translated version (English)
Thursday 10-12-20	Es war relativ logisch vom Aufbau her. Es gab keine Probleme, dass ich irgendwas nicht verstanden hätte.	It was relatively logical in structure. There were no problems that I didn't understand anything.
	Bei mir hats n bisschen geruckelt und es kann einfach an meinem Internet liegen.	It was a bit jerky for me and it could simply be due to my internet
Jasmin W. Thursday 10-12-20	Original answer of the tester (German)	Translated version (English)
	Ich weiß nicht was ich klicken muss in der "BullyStackOverview".	I don't know what to click in the "BullyStackOverview".
	Also der Resolutionscreen: Die Zeit verstehe ich, ich verstehe diese Leiste nicht so ganz mit den Smileys nicht so ganz. Die drei Karten verstehe ich auch nicht, wofür steht was.	So the resolution screen: I understand the time, I don't quite understand this bar with the smileys. I don't understand the three cards either, what stands for what.
	Wenn ich im Card Wheel vorsortieren kann, und mir die danach eh anschauen kann, warum sollte ich vorsortieren und nicht alle einfach flaggen um mir sie genauer anzuschauen.	If I can pre-sort in the card wheel and then look at them anyway, why should I pre-sort and not just flag all of them to take a closer look at them.
	Ganz am Anfang wusste ich nicht was ich drücken soll. Ich war verwirrt von dieser Ersten Karte die da ist.	At the very beginning I didn't know what to push. I was confused by this first card that came out.
	Bei den Beiträgen fand ich es verwirrend dass die Kommentare oben waren. Die kommentare sind ja immer zu dem Bild. Vielleicht sollte man mehr vom Bild sehen können.	With the posts, I found it confusing that the comments were above. The comments are always on the picture. Maybe you should be able to see more of the picture.
	Optisch war es relativ cool.	Visually it was relatively cool.

Appendix 8: Results playtest JuuuPort Scouts questionnaire

On a scale of 1-10, how much fun did you have playing the game?
(to measure the likability of the player)
1. no fun to 10. a lot of fun

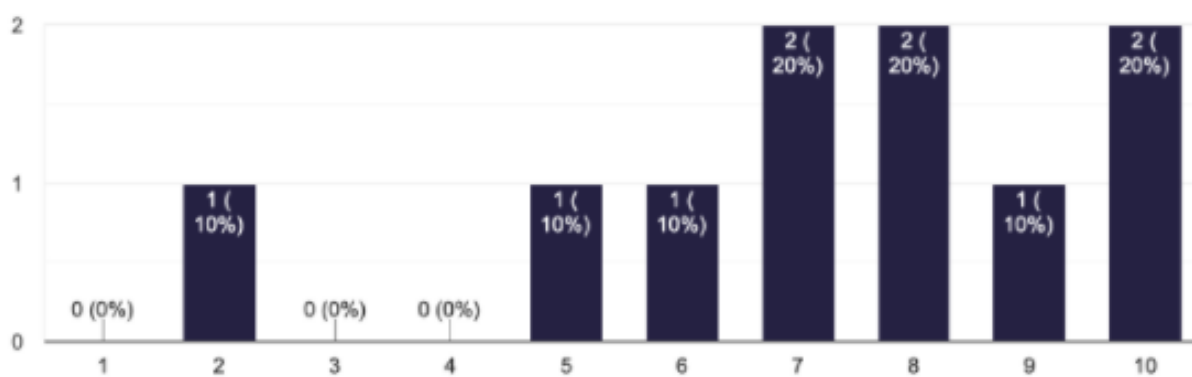Wie viel Spaß hattest du beim spielen?

10 antwoorden
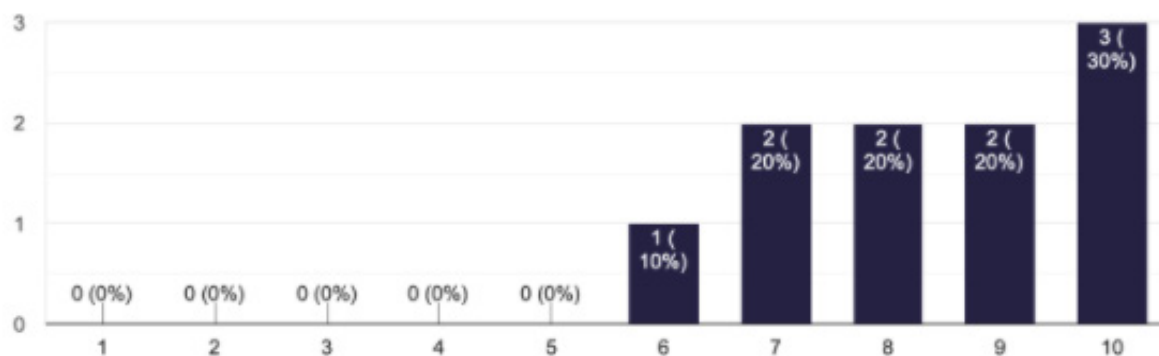
Average of 8.4

On a scale of 1-10, how hard was the game?
(to measure the difficulty of the game)
1. Very hard to 10. very easy

Wie schwer war das Spiel?

10 antwoorden

Average of 7.2 = neutral to easy

On how many cards did you achieve the green score at the result screen?
1, 2, 3, 4, 5 (scale or a-e)
(to measure the skill of the player by seeing how many cards they did good (green))

Wie viele grüne Karten hattest du am Ende auf der Punktetafel stehen?

8 antwoorden
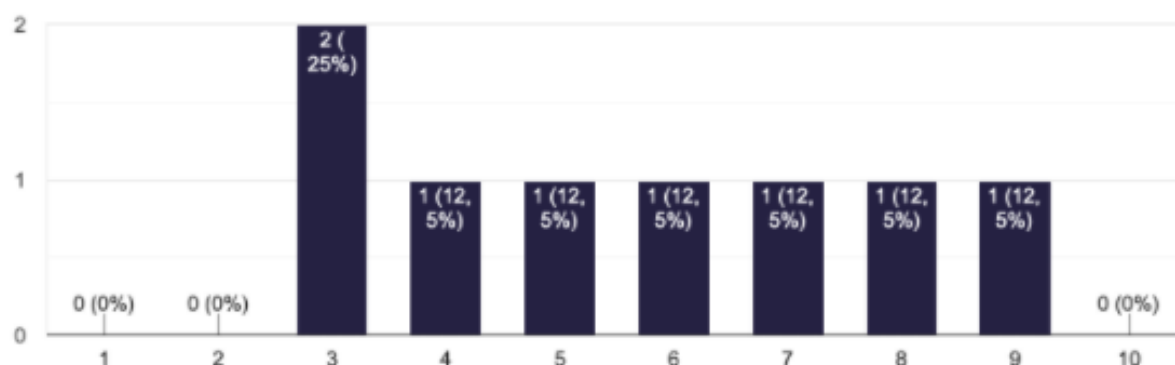
Average of 5.6 cards correct = neutral

Overall, how much fun was it to divide the cards in bully and non-bully stacks?
(to measure the fun of the cards dividing element of the game scale 1-5 (or a-e) a lot of fun, fun, neither fun or not fun, not fun, not fun at all)

Wie viel Spaß hattest du dabei, die Karten in "Mobbing" und "Nicht Mobbing" Karten zu unterteilen?

10 antwoorden
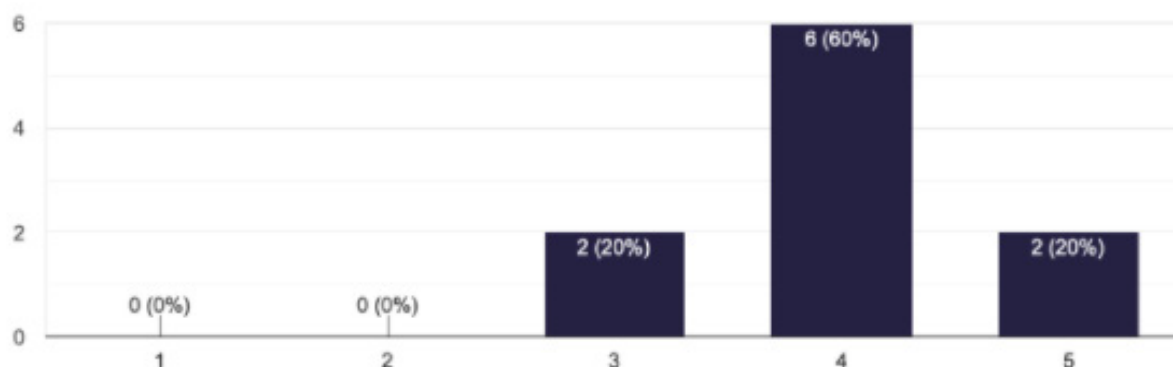
Average of 4 = fun

Overall, how much fun was it to call out the bully while investigating the cards?
(to measure the fun of the cards dividing element of the game scale 1-5 (or a-e) a lot of fun,
fun, neither fun or not fun, not fun, not fun at all)

Wie viel Spaß hattest du dabei, dem Mobber öffentlich zu Antworten?

10 antwoorden
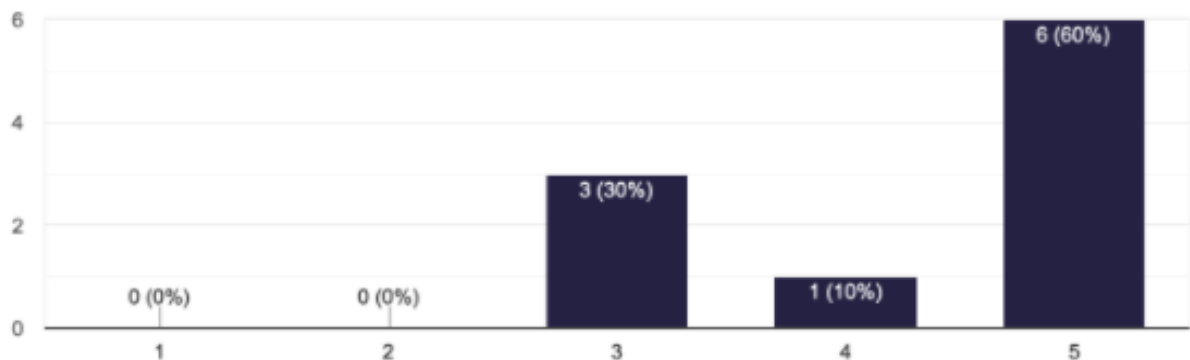
Average of 4.3 = fun to very fun

Overall, how much fun was it to check the history of the bully while investigating the cards?
(to measure the fun of the cards dividing element of the game scale 1-5 (or a-e) a lot of fun,
fun, neither fun or not fun, not fun, not fun at all)

Wie viel Spaß hattest du dabei, dir den Verlauf des Mobbers anzuschauen?

9 antwoorden
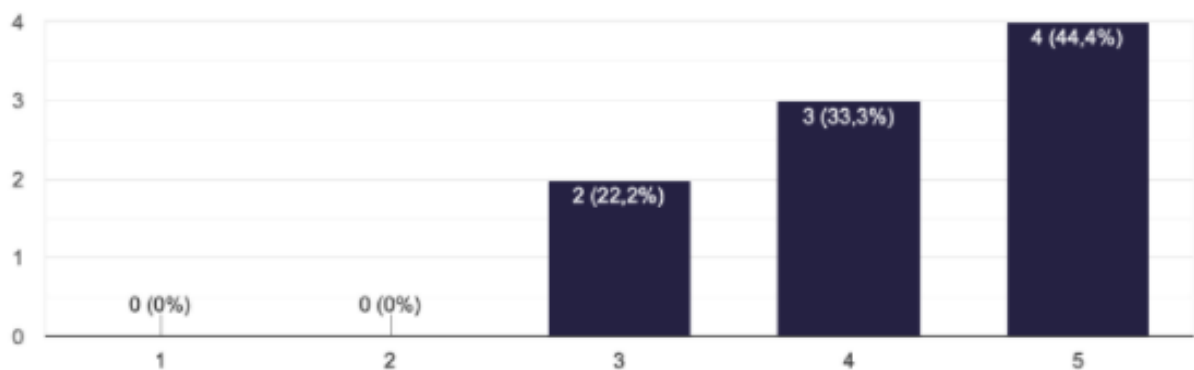
Average of 4.2 = fun to very fun

Would you recommend the game to your friends?
   a.   yes (Blue)
   b.   no (Red)

Würdest du das Spiel deinen Freunden empfehlen?

10 antwoorden
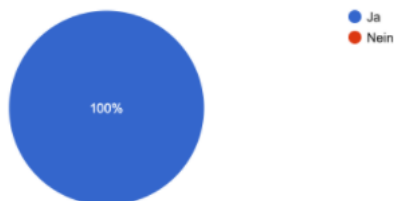
Would you play the game again?
   a.   yes (Blue)
   b.   no (Red)

Würdest du das Spiel spielen?

10 antwoorden
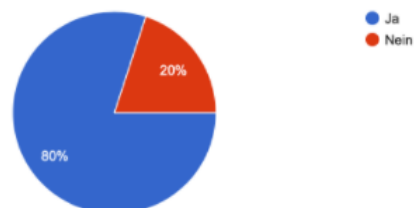
How much did you learn from the game?
(to measure the educational reach of the game)
I learned a lot (Orange)
I learned a bit (Red)
I didn't learn anything (Blue)

Wie viel hast du bei diesem Spiel gelernt?

9 antwoorden

- Ich habe gar nichts gelernt.
- Ich habe ein bisschen dazu gelernt.
- Ich habe viel dazu gelernt.

Overall, how difficult was it to divide the bully cards from the non-bully cards in the cardwheel?
(to find the overall difficulty of the game, scale of 1--5, very difficult, difficult, not difficult or easy, easy,
very easy)

Wie schwer war es, die "Mobbing" Karten von den "Nicht Mobbing" Karten in der
Kartenauswahl zu unterscheiden?

10 antwoorden
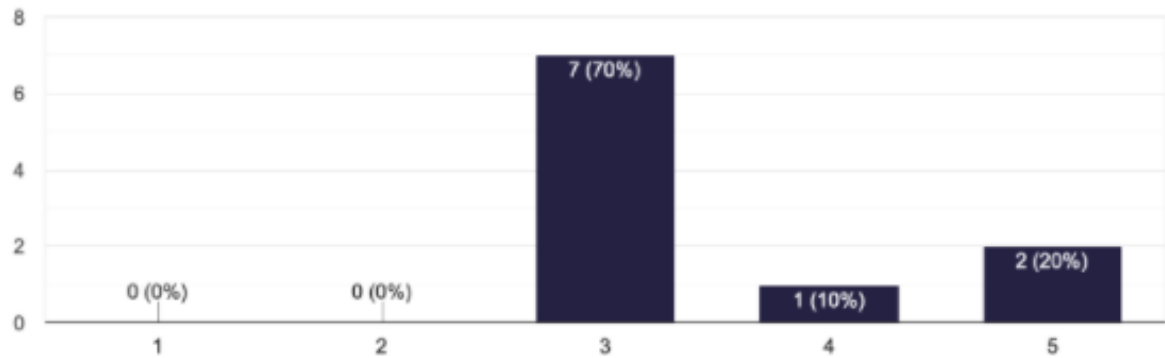
Average of 3.5 = neutral to easy

Overall, how difficult was it to find out if a card was a bully?
(to find the overall difficulty of the game, scale of 1--5, very difficult, difficult, not difficult or
easy, easy, very easy)

Wie schwer war es herauszufinden, ob es sich bei einer Karte um einen Mobber gehandelt
hat?

10 antwoorden
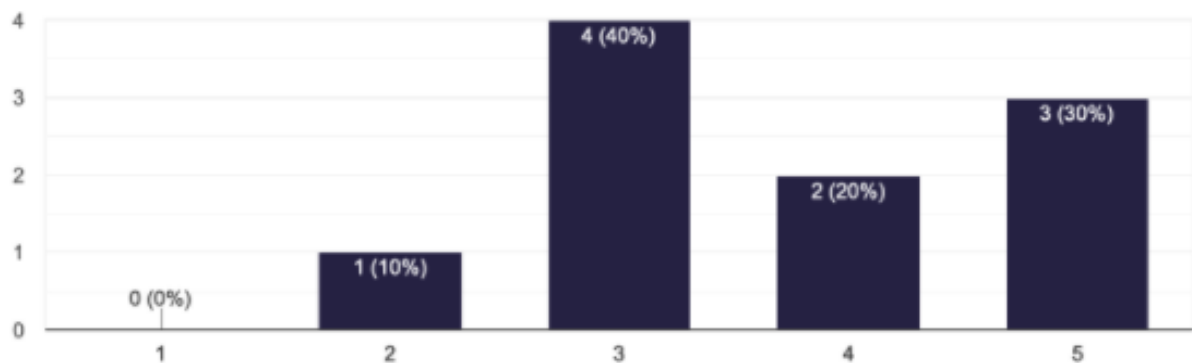
Average of 3.7 = neutral to easy

Overall, how often were you confused while playing the game?
(to find the overall accessibility of the game, scale of 1-5, very often confused, often confused, sometimes confused, not often confused, never confused

Wie oft warst du verwirrt, als du das Spiel gespielt hast?

10 antwoorden
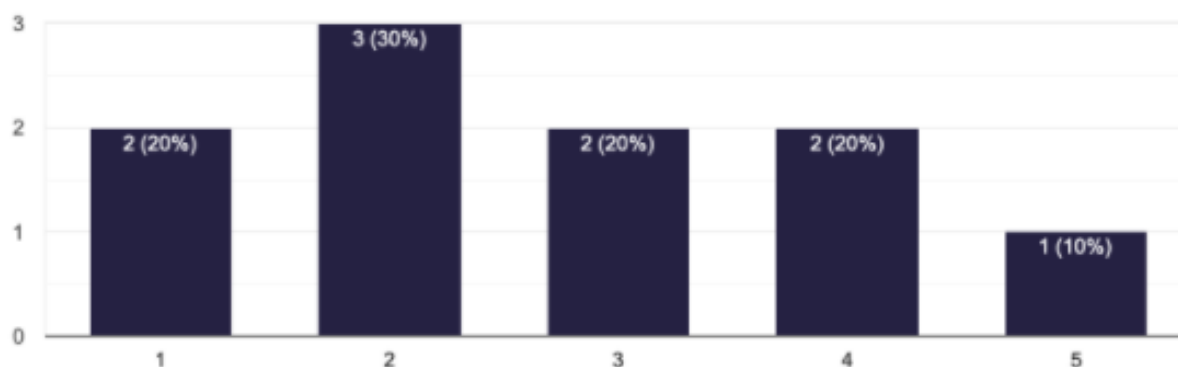
Average of 2.7 = neutral to often confused

What did you learn while playing the game?
(open question to find out what answer comes up the most)

1. The distinction between bullying and meanness is not always clear / Alleged bullying does not always mean it badly.
2. Cyberbullying is broad and can occur in a wide variety of situations.
3. To recognize what is bullying and what is not.
4. Not much, since I work in the field myself.
5. Above all, it suggested to me again that you cannot interpret everything on the Internet correctly at first glance …

It was clear what the score of the results screen means
(to make sure the player understands and receives the feedback, scale 1-5: very clear, clear, neither clear or unclear, unclear, very unclear)

War der Ergebnisbildschirm klar verständlich?

9 antwoorden
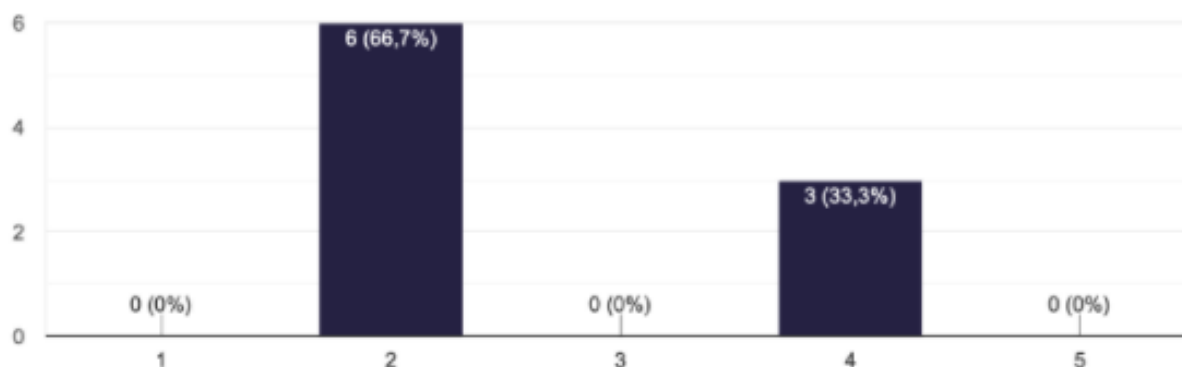
Average of 2.6 = neutral to unclear

What does the feedback you got mean?
(open question to find out if the player understands and receives the feedback needed)
1. (After consultation with you guys) The number of people who are on my platform.
2. What feedback?

Is there anything you wanted to do, but couldn't?
(open question to find opportunities for the game)
1. Choices of messages.
2. deselect my selection so I could see all three cards again
3. Enter answers yourself.
4. Formulate messages yourself
5. After the chat, press the Call out button.

How would you describe the game to your friends or family?
(open question, making sure the goal of the game is clear)
1. A "WhatsApp-Message-Bully-Find-Simulator".
2. The aim of the game is to distinguish bullies from non-bullies. different postings and comments have to be assessed and sorted.
3. The game helps you to divide comments on the Internet into well-meaning and "malicious" statements.
4. You have to find out if certain statements are cyberbullying. Filter comments via "social media" and confront or report people.
5. it was about finding out whether something was bullying or not

User accessibility:
How often did you not understand, or go stuck in the game, and didn't know what to do?
(To measure accessibility problems in the game, by asking how often they got stuck)
a. 0 (Blue)
b. 1-2 (Red)
c. 2-4 (Orange)
d. 5 or higher (Green)

Wie oft hast du das Spiel nicht verstanden und bist irgendwo hängen geblieben?

10 antwoorden
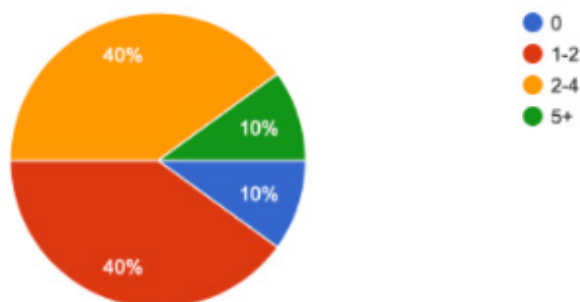
What is your opinion on the helpfulness of Abbot the AI helper?
(to find accessibility problems with the AI buddy scale 1-5 very helpful to very unhelpful)
1. very helpful (purple)
2. helpful (Green)
3. neither helpful or unhelpful (orange)
4. unhelpful (Red)
5. very unhelpful (Blue)

Was hälst du von der Unterstützung die Abbot bietet?
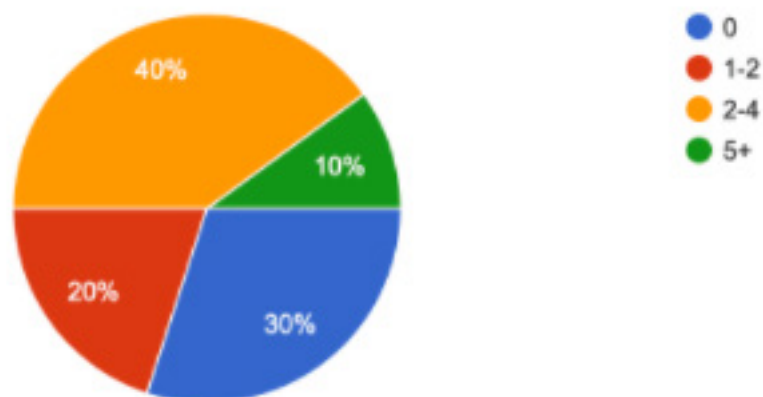
9 antwoorden
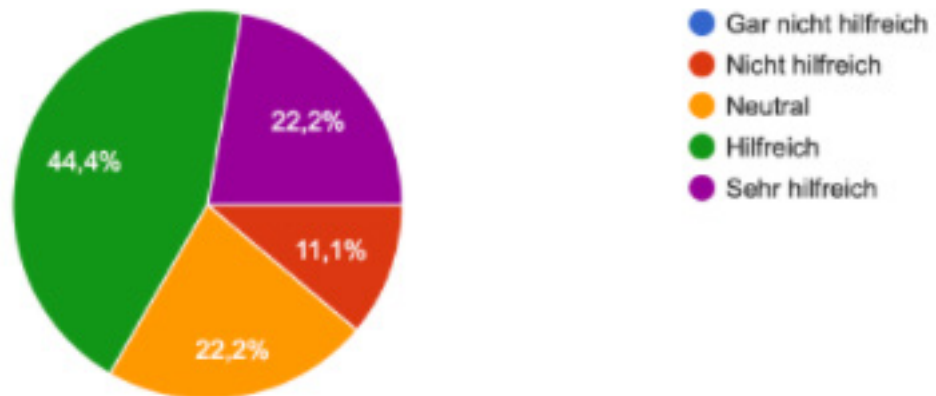
How often did you click on Abbot for help?
a. 0 (Blue)
b. 1-2 (Red)
c. 2-4 (Orange)
d. 5 or higher (Green)

Wie oft hast du Abbot um hilfe gebeten?

10 antwoorden

How often did you not understand what you needed to do?
(to find accessibility problems in the game, scale 1-5 very often, often, sometimes, rarely, never)

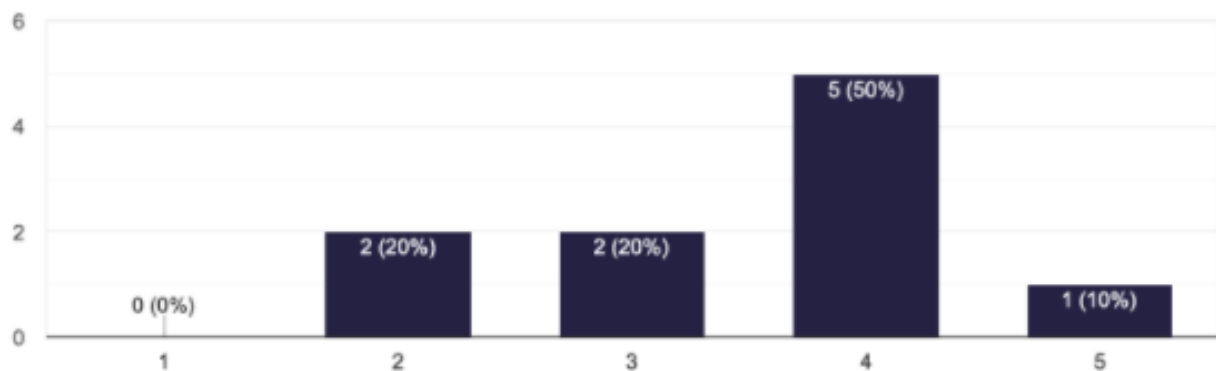Wie oft wusstest du nicht was du tun sollst?

10 antwoorden
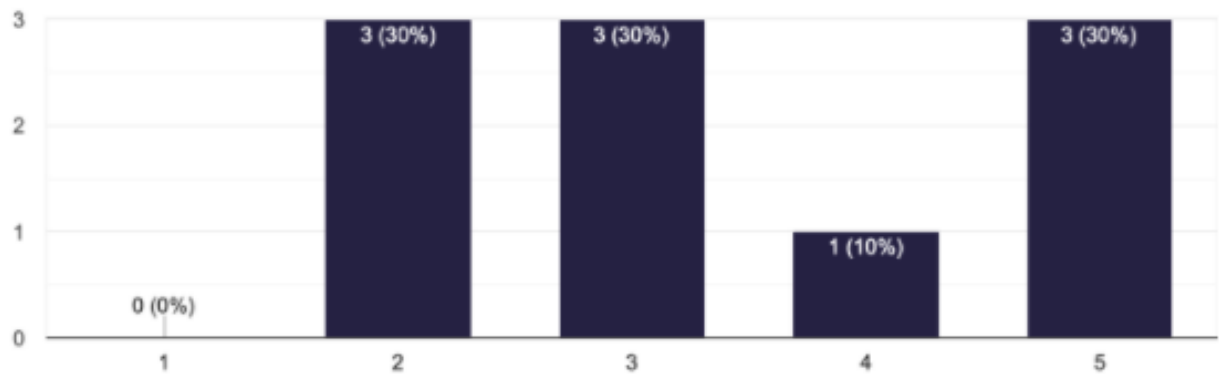
Average of 3.4 = sometimes to rarely did not understand what to do

How often did you not understand where you needed to click?
(to find accessibility problems in the game, scale 1-5 very often, often, sometimes, rarely, never)

Wie oft wusstest du nicht, wo du hinklicken sollst?

10 antwoorden

Average of 3.5 = sometimes to rarely did not understand where to click

How helpful is the use of emojis in the game?
(to find accessibility problems in the game on a more specific subject scale 1-5 very helpful to very unhelpful)
1. very helpful (Purple)
2. helpful (Green)
3. neither helpful or unhelpful (Orange)
4. unhelpful (Red)
5. very unhelpful (Blue)

Wie hilfreich war die Nutzung von Emojis im Spiel?

10 antwoorden

- Gar nicht hilfreich
- Nicht hilfreich
- Neutral
- Hilfreich
- Sehr hilfreich
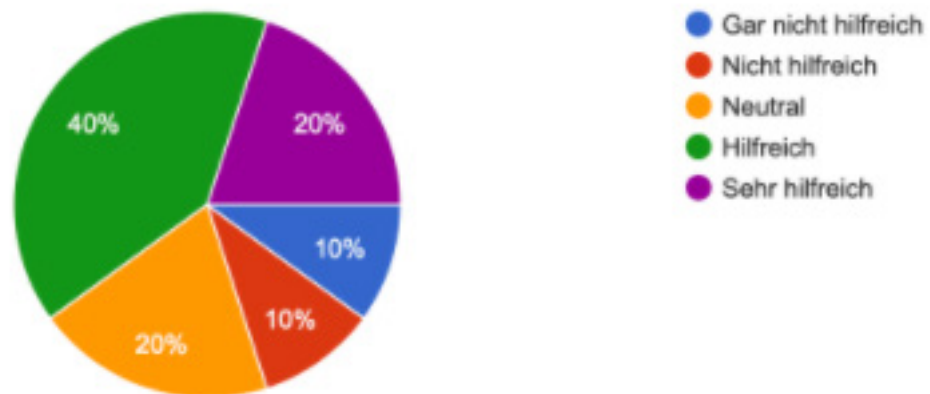
What did you think of the amount of text you need to read in the game?
(to find accessibility problems about the text in the game)
1. I had no trouble reading the text (Green)
2. I had no trouble reading the text, but it took a lot of time to read (Orange)
3. I had trouble reading the text (Red)
4. I couldn't read the text (Blue)

Was denkst du über die Menge an Text, die du im Spiel lesen musst?

10 antwoorden

- Ich konnte den Text nicht lesen.
- Ich hatte Schwierigkeiten den Text zu lesen.
- Ich hatte keine Schwierigkeiten den Text zu lesen, aber es hat lange gedauert alles zu lesen.
- Ich hatte keine Schwierigkeiten den Text zu lesen.
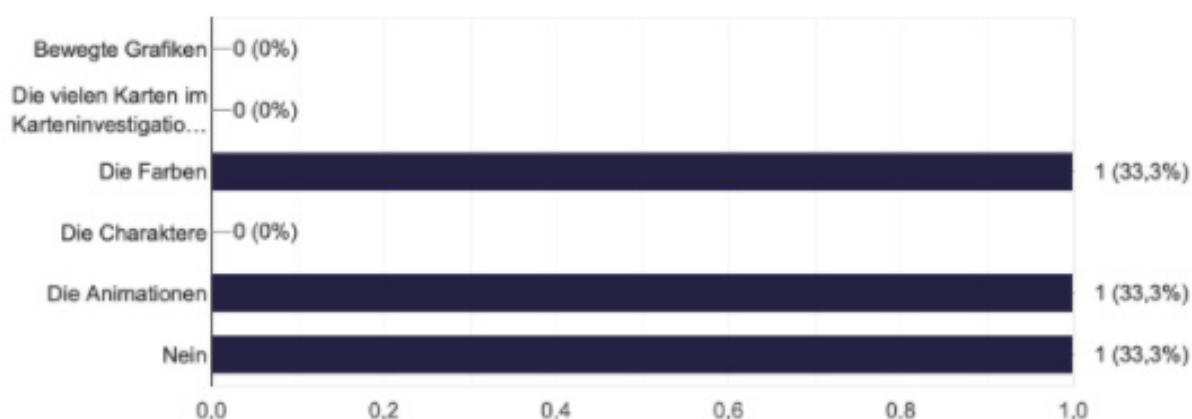
Art/visuals:

Did any art in the game distract you from your tasks?
(to find accessibility problems in the game because of the art (multiple clicking options))
1. moving visuals
2. the multiple cards in the investigation stack
3. the colors (1 answer)
4. the characters
5. the animations (1 Answer)
6. other (...) (No 1 answer)

Gab es Grafiken, die dich vom Spiel abgelenkt haben?
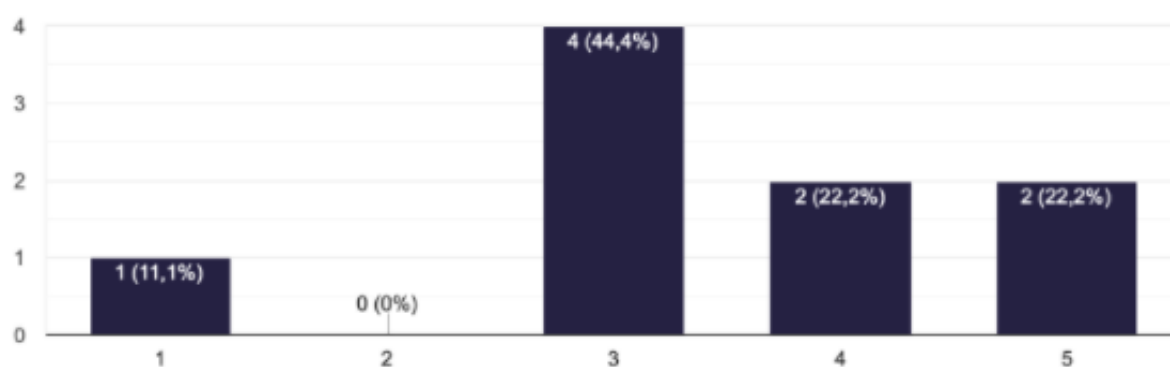
3 antwoorden

On a scale of 1 to 5, how helpful were the added icons in the game?
(to find accessibility problems in the game because of the art) 1. very unhelpful to 5. very helpful

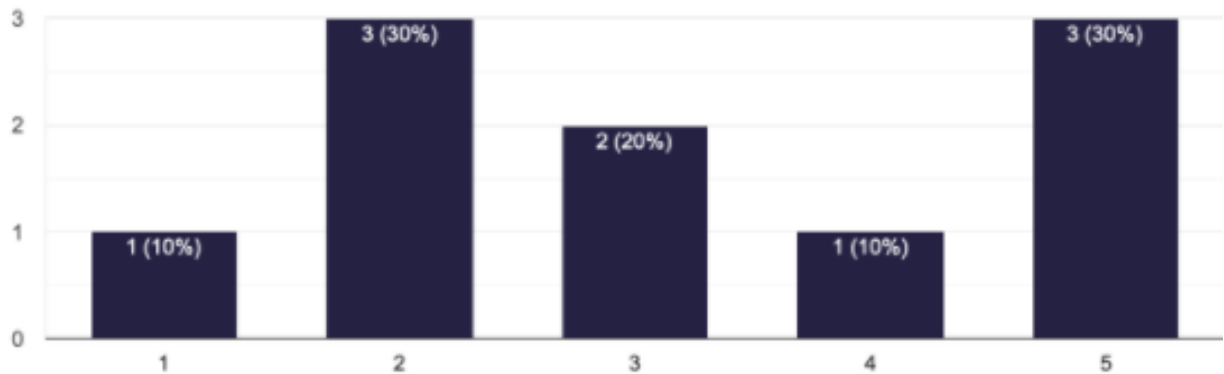Wie hilfreich waren die Icons im Spiel?

9 antwoorden

Average of 3.4 = neutral to helpful

What do you think about adding sounds to the game? Is this more engaging, or rather distracting?
(to find opportunities for the game)
scale of 1-5 very distracting to very engaging

Findest du Sound wäre eine Bereicherung für das Spiel, oder würde es eher ablenken?
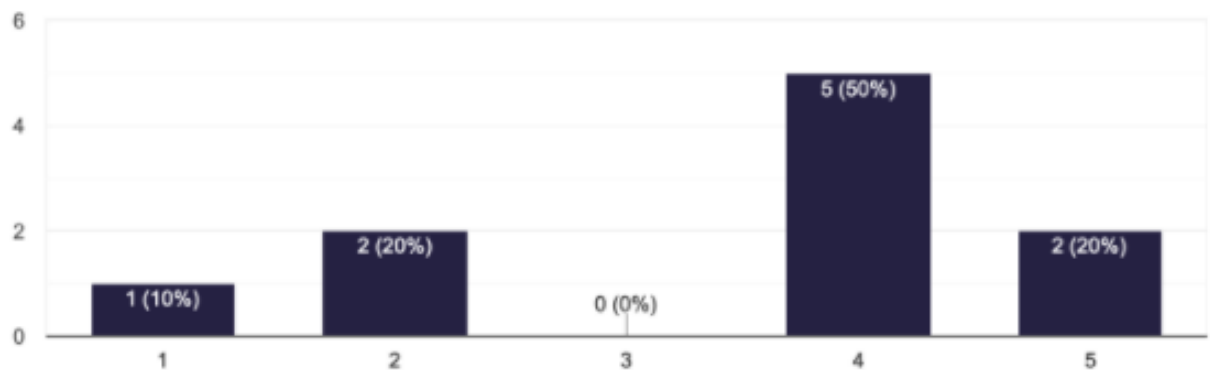
10 antwoorden

Average of 3.2 = neutral

What do you think about adding visual effects like particles and animations to the game?
(to find opportunities for the game)
scale of 1-5 very distracting to very engaging

Was hälst du davon mehr visuelle Effekte, wie Partikeleffekte und Animationen in das Spiel einzubauen?

10 antwoorden

Average of 3.5 = neutral to engaging