GR4: Portfolio

Team Null

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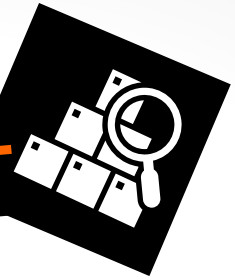
WHAT IS OUR PRODUCT



- For the youth and youth workers alike, the Journey Game is a social platform that uses gamification and virtual reality to engage the youth in personal development activities. The Journey Game has been specifically designed for youth work in Finland and creates an immersive experience unlike anything else.

January

- Empathise
- Define

February

- Ideate

March

- Prototype

April

- Test

PROBLEM STATEMENT

- The global pandemic has increased the number of young people at the risk of social exclusion. At the same time, lockdowns and social distancing have complicated the work of organizations supporting the youth
- Many of the organizations and youth workers have faced challenges in the adoption of digital technologies
- We wanted to support youth work by developing a new remote meeting / video conferencing system to support youth work and help to prevent social exclusion

INITIAL REQUIREMENTS

-virtual reality based user interface

Functional Requirement	Solution
Text-based chat	Communication with text, dance moves and emojis is available
Data Requirement	
User account management	Feature to refer forward to youth workers with administrator rights for more severe cases. Patient records.
Environmental Requirement	
Educational and non-profit target group	Administration rights
VR hardware and mobile VR hardware	Usable with VR hardware systems as well as with a combination of a mobile device and a cardboard frame
User Characteristics	
Youth, youth work and education	VR hangout elements
Different backgrounds and special needs	Communication and identity exploration
Usability Goals	
Safe for youth	Safe virtual hangouts
Performance	Available on mobile devices and on VR hardware systems
UX Goals	
Customization	Avatar customization, using emojis and emoticons
Enjoyable	Cool virtual environments to enjoy
Gamification	Gamification and playful elements are included such as playing fun games and sharing art in places

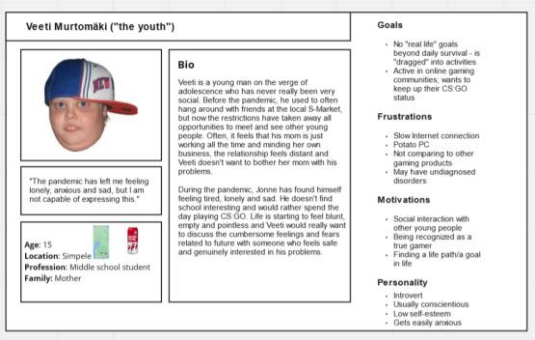
-a traditional user interface

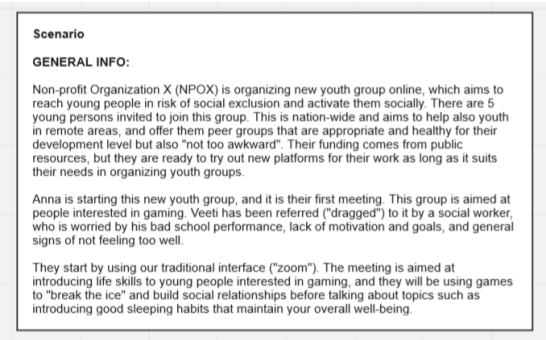
Functional Requirement	Solution
Video streaming	Zoom-like feature to stream screen
Audio conferencing	Zoom/VOIP like feature to share audio between users
Text-based chat	Chat feature with emojis
Scheduling invites, time management tools, timetables	Implementing time management tools
Data Requirement	
Progress tracking	Achievements, progress tracking, experience points and badges
Records of meetings	Meeting records can be saved, and earlier records can be viewed
Environmental Requirement	
Can be used on a computer	System/application can be run on computer
User Characteristics	
Youth work	Implementing features youth work attaches weight to
Usability Goals	
Learnability	Application is easy to learn and use
UX Goals	
Gamification elements	"The journey game" from which is obtained achievements, badges, and experience points

Screenshots from our Miro Board from Week 4 groupwork exercise when we first established the key requirements in different categories.

METHODS FOR EMPATHISING

- We used several different methods for empathising with users by utilizing methods that we had learnt throughout the weekly course exercises
- Based on our learnings, we created three different personas (fictional user archetypes of the users of our product: youth and youth workers) and two different scenarios from different user viewpoints, and utilized brainstorming sessions (e.g., brainwriting the requirements) and ideation (e.g., roleplaying)





Screenshots from our Miro board from Week 5 groupwork exercise, in which we first used Personas and Scenarios to build empathy towards the users of our product.

METHODS FOR EMPATHISING

- By using different methods to empathise with the users of our product (youth workers and youth in the risk of social exclusion), we were able to:
  - Enrich our understanding of the intended users of our products*: how they might use our product, how they might be feeling while using it*, and *how they might interact with the product and each other*
  - Ultimately, reach a higher understanding of our userbase and their possible needs – prior to working on the personas and scenarios, our understanding was often based on a mixture of preconceptions and personal experiences
- The methods helped us to discover distinct needs and functions that could benefit the users and led us to consider fundamental changes to our original ideas and conceptions!

Screenshots from our GP1 presentation, in which we visualized the Personas and Scenarios that we had created based on the insights that we had gained by using different methods for ideation.

KEY INSIGHTS FROM EMPATHISING

- **We should be making different spaces for different teenage needs:**
  - **Spaces of Doing:** structured activities which are directly overseen and controlled by adults (e.g. Being at school, piano lessons, basketball team practice with a coach, etc.)
  - **Spaces of Being:** unstructured activities, no constant supervision, often "hanging out" freely with peers (e.g. spending time at the mall with friends, skateparks, etc.)
  - This theory could be translated to developing **online spaces** for youth as well.
  - **Both types of spaces are needed for healthy development in teenage years.**

- **Teenage brains are different**: All teens have unique needs. Especially *spaces of being* should be made with teens themselves, as adults cannot just create them by their own rules or logic and "force" teens to naturally hang out there. *Empathising was challenging but highly effective due to this.*

- **We uncovered the hidden needs of users that became our major design themes:**
  - **Community and genuine connections:** Many have no suitable peer relationships, or they live in isolation, or suffer from loneliness due to other reasons – but they all want to find better connections from wherever they can
  - **Security and continuity:** It is very difficult to self-manage some activities consistently at a young age, and for many the future seems uncertain and hard to imagine.
  - **Accessibility and supportive adult responses:** Youth want support instead of scepticism for online communications. Online services and communities have better accessibility and in most severe cases they can be the only source of community, which is still better than having none.

APPLYING EMPHATISING INSIGHTS TO DESIGN

- **Our VR interface was defined as the online space of being**
  - Primary focus on enabling natural "hanging out" and finding out how teenagers want to interact with each other in online spaces; less weight on strict structured activities or constant adult supervision
  - Making "hanging out" virtual -> customization, interaction, environments
  - Safety and adult supervision must be created, but it should not hinder the nature of "space of being"
  - *Requirements adjusted and re-prioritized accordingly to suit the "hidden needs" in a space of being*
- **Our online meeting interface became the online space of doing**
  - Primary focus on providing a safe and structured platform aimed at youth work (varying from hobby groups to social work) that still interests the teenagers
  - Pain points in current generic products -> both youth workers and teenagers have their own specific demands that must be answered better in our product
  - Usage of healthy gamification on online meeting platforms to increase engagement
  - *Requirements adjusted and re-prioritized accordingly to suit the "hidden needs" in a space of doing*
- **Connecting** these two spaces as one service for youth work – your avatar, your profile, your developing identity being shaped by various spaces
- **Accessibility** and low bar for entering became more important in requirements (finds it difficult to enter social spaces, various disabilities, low income)
- We updated the personas and scenarios, as we found out our own biases during further analysis

IDEATION METHODS

Journey maps

- Improved understanding of users and their needs
- Highlighted themes and pain points which need to be done differently in our online meeting platform design

Six thinking hats

- Raised concerns about security, technical limitations, and such
- Exploration of safety vs accessibility in our product

Storyboarding

- Perhaps the single most useful method for the group, created a more coherent image of our VR's functions
- Developed and refined ideas related to hanging out (interaction, customization, etc) in virtual reality

Screenshots from our Miro Board from the Week 7 groupwork exercise, in which we visualised one of our scenarios in the format of a storyboard.

IDEATION INSIGHTS AND KEY OUTCOMES

- **The key outcomes from the various ideation methods can be condensed into gaining a *deeper understanding* and *suitable features* for our idea of the traditional interface operating as a space of doing and the non-traditional interface as a space of being.**

- **Six thinking hats:**
  - Gained information on accessibility, healthy VR usage, and security in our designs
  - There are some limitations
    - Trademarked elements can't be used such as characters from Pokémon, Hello Kitty and Moomin, and music tracks
    - How mature the used technology is at the moment. Eye tracking could make navigating in a VR application faster, more natural and smoother.
  - Is there a risk users will lose focus in the VR reality. Is the real-world life so depressing that user prefers to be in the VR world.
  - Security issues in "a space of being" were discussed. Environment can be moderated by youth worker.

- **Storyboards:**
  - Defined ideal VR environments and interactions
  - The result of storyboards was how teens can display and experiment with their identities through avatars and customization rather freely
  - There were also thoughts about what it is like for teenagers to interact "in nature". Where do they hang out and how to bring that environment into digital and virtual environment. As a result, Lahti market was chosen as such place.

- **The Journey Map** was used to search for solutions to pain points and opportunities of similar products:
  - What an app like zoom could offer teens. For example, could there be more activities and things that support group continuity, togetherness, and grouping that make Anna's (expert's) work easier
  - Gamification elements to increase interactivity and represent your path and session goals

DEVELOPING OUR DESIGNS...

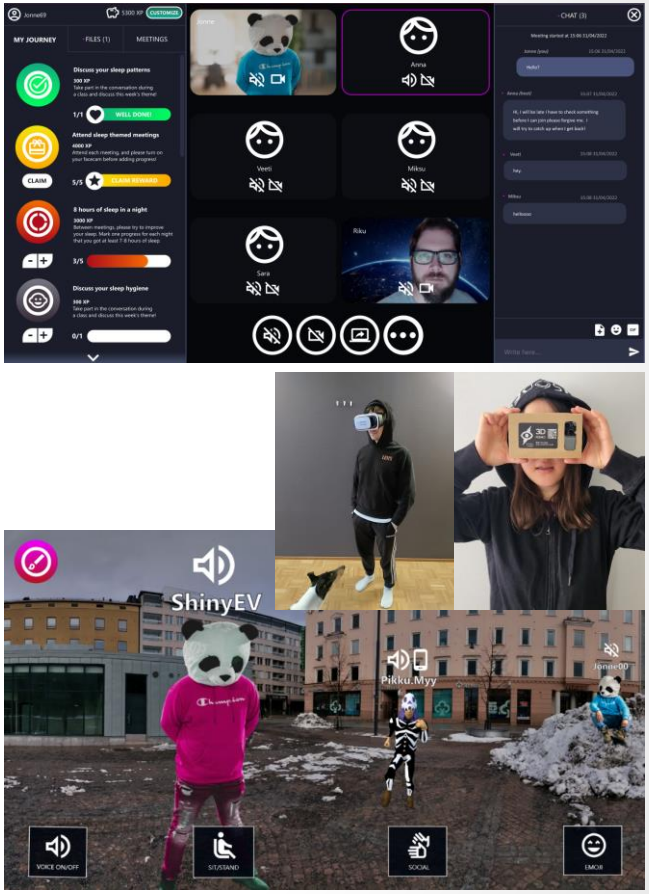
- **Our VR design concept developed:**
  - **Interaction:** voice chat and emojis, social actions such as dancing (as seen in teenage online communications and popular social media)
  - **Include natural spaces in VR**: using also real places where teens "hang out" in Finland, e.g. the marketplace, or the local S-market.
  - **Customization:** your avatar can be customized, and changed anytime to support exploring one's identity
  - **Accessibility:** Accessibility features in VR, supporting both sitting and standing, and developing cheaper alternatives to buying expensive VR equipment – mobile VR with a cardboard case?
  - **Security:** Anonymity (only usernames), low bar for access, with two-layer moderation ("youth ambassadors" as moderators, youth workers can act as admins in severe cases)

...WITH IDEATION INSIGHTS

- **Our online meeting design concept developed:**
  - **Group management tools:** A group hub with all needed goals, files, information, and connections to other members that can be accessed any time, not just disjointed separate meetings on Zoom.
  - **Time management tools:** future and past meetings listed, a way to book communications with the youth worker and other group members
  - **Gamification and the Journey Game:** A progress-tracking and achievement system that uses game design (gamification and serious games) to increase the engagement of the system. You can earn points by being in youth groups and show off achievements. The points can be used to buy new customization items. The game itself also offers a structure through the whole "course", and shows your progress in a more concrete way. The tasks are small and manageable, making the goals seem achievable as you go on.

PROTOTYPING METHODS

- **Online meeting prototype**
  - Clickable prototype built with Adobe XD
  - Prototype was combined with other elements to simulate an online meeting
  - User testing by project group members using role playing, those playing teenagers used age regression
- **VR hangout prototype**
  - Static, faux VR scene for mobile was combined with a simulated VR elements (headphones, conversation, background sounds) to test the concept
  - Tested using low-budget VR equipment and cardboard mobile VR setups
  - Individual user testing with age regression



TESTING METHODS

- **Online meeting platform** testing was conducted by the project group, all five group members were participating in the same session.
  - Group members role-played the participants role. One of the group members assumed role of social worker named Anna, rest of the group played the role of teenage customers.
  - Everyone had access to Adobe XD clickable prototype, and voice communication capabilities were simulated using Microsoft Teams in the background.
  - Testing session's purpose was to briefly simulate the youth work session with social worker Anna. During the test Anna leaded the discussion and took participants through the prototype by introducing participants to perform specific tasks.
- **VR** prototype testing was conducted by three project group members, each performing the test by their own in their own pace.
  - Participants used their own mobile phones to display the faux VR scene. Each participant had also acquired low-end mobile VR headset, which they used for testing. One participant had prepared self-made cardboard VR headset to test the feasibility of cardboard solution.
  - Testing session were divided into two 30-minutes sessions, first session was performed while sitting, and second while standing. During the 30-minute session participants were tasked to play market square audio from their headphones, and to simulate the interaction with other participants in the VR space. Interaction was simulated by talking by themselves or with other people in the room.
- **Data gathered:** With both prototypes, right after the testing session participants answered to feedback form. Feedback forms were constructed using Google forms. Online meeting feedback form consisted of six, and VR feedback form fourteen open-ended questions. The questions were defined to address the usability goals related to desired user experience.
- **Expert evaluation** with Budd’s usability heuristics was later performed on the online meeting prototype.

KEY OUTCOMES FROM TESTING

- **Online meeting platform:**
  - Gamification-based goals were engaging
  - Need to provide easier access for customization and changing video call background
  - Too much complexity and information in meeting view
  - Users would like to customize their experience
- **VR hangout:**
  - 30 minutes felt maximum for one session
  - Social aspects should be explored further
  - Discomfort and motion sickness can occur
  - User interface and avatars in VR scene felt engaging for users

DEVELOPING OUR DESIGNS...

- **How to improve the online meeting platform next:**
  - Better navigation
  - Customization functions
  - Add error messages
  - Include needs of Anna's persona (youth worker) more in future tests
  - More detail added, Adobe XD used

...WITH TESTING INSIGHTS

- **How to improve the VR hangout prototype next:**
  - Better navigation
  - More immersive and interactive prototype made on Unity
  - Interview to get insight on what would our users like to do in such VR space, and which activities could be the most interesting for them
  - Online testing

VR PROTOTYPE IN THE FUTURE

1. Pre-Alpha (now)

Testing: Faux VR "hangout" sessions
Participants: Team members + regression
Data: Feedback forms
Prototype evolution: VR hangout simulation with 1. basic UI –> 2. all basic VR flows in Unity

2. Alpha

Testing: Simulated "hangout" sessions
Participants: Selected teenagers in a controlled environment
Data: Observation, feedback forms, heatmapping/tracking
Prototype evolution: 1. High-fidelity Unity 3D VR scene with basic features --> 2. Unity VR with full frontend and basic backend for testing

3. Beta+

Testing: In a real organization, in everyday use + observation visits
Participants: Real users in real context (teens and some youth workers)
Data: Data from usage, feedback, observation, tracking/heatmapping
Prototype: Functional product with online capabilities

ONLINE MEETING PROTOTYPE IN THE FUTURE

1. Pre-Alpha (now)

Testing: Simulated online youth group meetings

Participants: Team members + regression

Data: Feedback forms

Prototype evolution: Clickable lower-fidelity prototype on Adobe XD --> high-fidelity clickable prototype

3. Beta+

Testing: In a real organization, in everyday use + observation visits

Participants: real users (youth and youth workers)

Data: Data from usage, feedback, observation

Prototype evolution: Functional product with full frontend and backend --> support for larger-scale use

Testing: Controlled online youth group meetings

Participants: Selected teenagers and youth workers in a controlled environment

Data: Observation, feedback forms, heatmapping and tracking

Prototype evolution: Functional alpha prototype with well-defined frontend --> basic backend implemented

2. Alpha

REFERENCES

1. Gartner, 2022. Gartner Predicts 25% of People Will Spend At Least One Hour Per Day in the Metaverse by 2026 [online]. [viewed 16 February 2022]. Available from: https://www.gartner.com/en/newsroom/press-releases/2022-02-07-gartner-predicts-25-percent-of-people-will-spend-at-least-one-hour-per-day-in-the-metaverse-by-2026.
2. Holland, K. 2019. Understanding Age Regression [online]. [viewed 31 March 2022]. Available from: https://www.healthline.com/health/mental-health/age-regression.
3. Kiviniemi, J., Tuominen, S. 2017. Digital youth work – a Finnish perspective [online]. [viewed 16 February 2022]. Available from: https://www.verke.org/uploads/2021/01/a3f0ad24-digital-youth-work-a-finnish-perspective_verke.pdf.
4. Kivunja, C. 2015. “Using De Bono’s Six Thinking Hats Model to Teach Critical Thinking and Problem Solving Skills Essential for Success in the 21st Century Economy”, Creative Education, vol. 6, pp. 380-391 [online]. [viewed 4 March 2022]. Available from: https://www.scirp.org/pdf/CE_2015031710033222.pdf.
5. Kuniavsky, M. 2010. Smart Things: Ubiquitous Computing User Experience Design, 1st edition. Amsterdam: Elsevier.
6. Kuusisto-Arponen, A., Tani. S. 2009. ”Hengailun maantiede. Arjen kaupunki nuorten olemisen tilana” [online]. [viewed 16 February 2022]. Available from: https://www.ays.fi/alue-ja-ymparisto-lehti/arkisto/pdf/aluejaymp_2009_1_s51-58.pdf.
7. McMillan, S., Morrison. M. 2006. “Coming of age with the internet: A qualitative exploration of how the internet has become an integral part of young people’s lives”. New Media & Society, vol.8, no.1, pp.73-91 [online]. [viewed 16 February 2022]. Available from: SAGE Premier (LUT).
8. Mind Tools Inc. 2022. Six Thinking Hats®. Looking at Decision in Different Ways [online]. [viewed 5 March 2022]. Available from: https://www.mindtools.com/pages/article/newTED_07.htm.
9. Preece, J., Sharp, H. & Rogers, Y. 2015. Interaction Design: Beyond Human-Computer Interaction, 4th edition. Hoboken: Wiley.
10. Statista, 2021. Consumer and enterprise virtual reality (VR) market revenue worldwide from 2019 to 2024 [online]. 17 March 2021. [viewed 17 February 2022]. Available from: https://www.statista.com/statistics/1221522/virtual-reality-market-size-worldwide/.
11. Wolff, A. 2022. Expert Evaluation Methods [online lecture], CT30A8922 User Experience Design, LUT University. [viewed 31 March 2022]. Available from: https://moodle.lut.fi/mod/lesson/view.php?id=571268.