# Master Thesis Exposé

Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student: Racca Fabiana

Email: ukuae@student.kit.edu

Supervisor: Maria \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Department: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Research question

State of the art (literature review)

Gannt plot

(literature review, feedback, get into Unity, implementation, evaluation of implementation, deployment, data evaluation, holidays)

Papers:

# Playful Reflection: Impact of Gamification on a Virtual Reality Simulation of Breastfeeding

<https://dl.acm.org/doi/10.1145/3544548.3580751>

# Virtual Feed: Design and Evaluation of a Virtual Reality Simulation Addressing the Lived Experience of Breastfeeding

<https://dl.acm.org/doi/10.1145/3491102.3517620>

Motivation (what interests me)

Introduction/situation description/State of the art (literature review)

When designing a building/area, many factors need to be taken into account to include and satisfy the needs of a wide variety of people and situations. Factors are considered according to the perceived importance of the designer and the final result is strongly influenced by the experience awareness of the designer to different needs and problems faced by people with a different situation than his own

Increase awareness towards architectural barriers for disabled people

Preconceptions…buildings are built for the average human being, without considering/including extreme options

Cause effect chain…barriers existence -> unnecessary/increased fatigue/discomfort for specific group of people to exploit available services -> exclusion and bad feelings

Addressed situation…withing university environment, common places that everyone should be able to access without unnecessary extra effort

Goal of the project…rise awareness about the barriers issue to favour a different way of thinking in the future

Current approach for disability awareness: disability simulation; providing info; live and video presentations/testimonials by individuals with disabilities; pairing disabled and non-disabled children together in a buddy system; group discussions about disability; a combination of the above methods

Methods limitation: the user is not involved/interested, less information is retained, focus on the disability instead of the barriers create the wrong feeling

Why is VR a valid option: makes the experience more interactive and interesting, shows the POV of disabled people (the simulation provides first person understanding of issues) with the focus on barriers, less costly and scalable

VR limitations: simulating a disability increases pity and self preservation

Winning “cut” (POV) of the project: focus on obstacles but using a simulation (not simulation of the disability, but simulation of the environment from a disabled point of view)

Problem statement [different scopes, involved factors analysis (disabilities, size of building, inside/outside/transition, seasons)]

Many factors and choices are involved to build a simulation, many different aspect can be chosen or discarded depending on the priorities

Groups of disabilities:

* Limited mobility
* Wheelchair
* Limited upper extremities mobility/dexterity (spina bifida)
* Visual impairment
* Hearing impairment
* Neurodivergence (ADHD/Anxiety/autism)

Size of the simulated area:

* Outdoors area of kit (AKK, library, mensa, garden)
* Indoor of a chosen building (mensa)
* Outdoor, Indoor and transition of a single building commonly accessed

Season of the year:

* Autumn -> leafs on the street, wet surfaces, umbrellas etc
* Winter -> cold, snow, extra clothes layers
* Summer -> warmth, difficulty to walk for a long time under the sun

Time of the day:

* Crowded times and areas
* Limited time slots

Navigation difficulties

* Accessibility to information

Research question

Q1: validity of the design to convey/teach about barriers (was the design suitable for the goal)

Q2: how is the simulation perceived (reflection)

[Reflection/transformative -> it’s a study on the design effectiveness (questionnaire + interview + qualitative insight)]

Method

Gannt plot

(literature review, feedback, get into Unity, implementation, evaluation of implementation, deployment, data evaluation, holidays)

Material

Current methods of disability awareness programs for school children include: 1) simulating a disability (e.g., sitting in a wheelchair or wearing a blindfold); 2) providing information about disabilities; 3) live and video presentations/testimonials by individuals with disabilities; 4) pairing disabled and non-disabled children together in a buddy system; 5) group discussions about disability; and, 6) a combination of the above methods [7]. Along with disability awareness, Roberts and Smith [12] recommend providing children without a disability with knowledge and practical skills that assist with social interactions with their disabled peers. Logic dictates that one of the most effective ways to impart knowledge about the realities for children with disabilities is to try to simulate the experience of the disability.

VR is defined as a three-dimensional, participatory, computer-based simulation which occurs in real time and is often multi-sensory [14]. In other words, VR responds to the user’s actions, has real-time 3-D graphics and provides a sense of immersion. There are many advantages to using VR for simulation. For example, VR provides a safe environment for practicing a skill, such as learning to cross street intersections [15-17]. Simulations using VR may also be less costly than real-world simulations

The purpose of this project was to develop and evaluate a desktop VR program designed to teach children about the accessibility and attitudinal barriers faced by children with mobility impairments. Desktop VR utilizes a personal computer, where the virtual environment is displayed on a conventional computer monitor and movement within the environment is effected through either a mouse, keyboard, or joystick

The first was to utilize a collaborative research methodology, where youth with mobility impairments (our Disability Awareness Consultants) identified the barriers which would comprise the content of the software

The second phase was to develop the software, which involved organizing the barriers into a script or storyboard, building the virtual environment and then beta-testing it with our consultants

The third phase of the project involved evaluating the software to examine the impact of the program on youth without disabilities

Good evening,

I have seen the thesis in the Campus portal, but I haven’t registered yet, because I am confused on the length. The stated period is only 4 months, which is a short time, and also probably less then what I need, since it has to be mapped with 30 credits. Connected to that I am also a little bit worried it says 15 ECTS in the Portal, because in my university will recognize me what is written in the transcript of records.

I would be really happy if we could clear this out so I could start my thesis without any doubts on the formalities.