**Serious game development for dementia care using preferred music, music therapy**

**LW Fourie**

**31607500**

Research methodology for the research project submitted in *partial* fulfilment of the requirements for the degree BSc Hons 2023 in Computer Science and information systems in Potchefstroom at the North-West University

Supervisor: Prof. Gunther Drevin

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1. **Introduction**

This study will focus on music therapy as a serious game for dementia care by using preferred music. This means incorporating a patient’s own music preferences into music therapy, thus allowing them to enjoy the therapy more as well as allow them to be more accepting of the intervention. This chapter contains the methods used in the design of the study as well as the serious game to be developed alongside the study. How information will be gathered and how this information will be used and incorporated into the project.

This chapter will explain the paradigms, methodology as well as methods and the design of the research used by the study. This is to better explain how the study will be completed as well as how it can be replicated. Explaining all reasoning behind certain chosen made as well as the overall direction and aim of the study.

Further in this chapter the paradigms will be discussed, how they are used and how it will affect the study. The Methodology of the study, how it will be used for not only the study but the design of the serious game as well as the controller for the game. The research methods will also be discussed as well as the steps that will be followed in accordance with the paradigms and methodology chosen. A research design will also be discussed with a more in-depth view on the study itself.

First paragraph: remind the reader of the focus of your project, and how this chapter will address part of that focus (theoretical/empirical objective).

Second paragraph: A brief description of what the chapter entails.

Third paragraph: Refer to what the reader may expect in subsequent subsections.

1. **Paradigms**

Briefly address all the paradigms relevant to computing studies, and explain the why/why not applicability in the context of your study.

1. **Research Methodology**

The research methodology refers to the valid way to use the research methods applicable to a particular paradigm, in the context of such a paradigm. This ensures trust or confidence in the findings.

So, is your research reliable, valid, rigourous? Can one trust the process you followed and the findings of your study?

Ensuring the rigour of your research may occur through an evaluation of the validity and reliability of the tools or instruments utilised in the study (quantitative study), or by applying principles, criteria, or guidelines (qualitative study) should be discussed here.

You should have listed your evaluation/ the principles in your proposal (chapter 1), and in this chapter you should expand your explanation by including how you will adhere to the prescriptions. In the empirical study (chapter 4) you will carefully apply the prescriptions, and in the conclusion (chapter 5), you will convince the reader that you have applied them.

1. **Research Methods**

Only focus on the research methods pertaining to the paradigm you identified for your study. Address a number of applicable research methods, and explain the why/why not applicability in the context of your study.

You also need to explain in detail the steps you will follow pertaining to your chosen research method.

1. **Research Design**

Make a visual presentation of your study, and discuss it in more detail than the chapter discussion you did in your proposal (chapter 1).

1. **Conclusion**

A conclusion refers to the focus of the chapter, in the context of the study, and how it was addressed. It also prepares the reader for the next chapter.

1. **References**