

# Ego/exo perspective motor learning

Stefan Paul Feyer  
HCI Group, University of Konstanz

September 26, 2018



# Chapter 1

## Abstract



# Chapter 2

## Introduction

### 2.1 Motivation

#### Problem definition

- Motor learning tasks can be learn in MR (quellen)
- investigations in xyz but not in terms of perspective
- influence of perspective could lead to insights/ recommendations for learning in MR

### 2.2 Approach

How to address the Problem

- Design a Study, participants to perform movements
- three groups, ego/exo perspective
- investigate the performace of the groups

#### Research questions and hypothesis

- RQ1: Does the perspective on a Virtual Avatar influence the learning performance (?better: outcome?)?
- RQ2: When the movement is only on a specific body part like upper body (UB), lower body (LB) or full body (FB), is there a relation between the egocentric or exocentric perspective on the avatar to the learning performance?

- H1: The perspective on the avatar has no influence on UB movements
- H2: The perspective on the avatar has no influence on LB movements
- H3: The perspective on the avatar has no influence on FB movements
- H4: The perspective on the avatar has no prefers no movement class, means the movement class has no influence on the learning performance

## 2.3 Outline

After this introduction, the scope of this thesis is given. The Motor Learning movements are described as well as the classification for the Mixed Reality. In the Theory section a classification of this work in relation to the Methodology and HCI Theory. The related work part will give an overview about other and MR learning systems and also work about perspectives on avatars. From this work the measures, dependent and independent variables and tasks are derived. Taking the related work into consideration a study design is proposed in the Study Setting section. Furthermore a outlook is given in the last section.

# Chapter 3

## Scope

### 3.1 Motor Learning

- discrete movements
- closed skills
- at least 2 different movement categories

#### How do we learn movements

facts → adaption for study

### 3.2 Mixed Reality

- Milgram
- AR or VR

#### other aspects

- synchron asynchron
- colocated/remote
- perspective
- hardware?
- feedback!





# Chapter 4

## Theory

### 4.1 Methodology

sth like UQ live cycle or participatory design

### 4.2 HCI Theory

sth like embodied cognition



# Chapter 5

## Related Work

wie haben die anderen diese variablen untersucht wie wurden die variablen untersucht -> studiensetting

### 5.1 MR learning systems

### 5.2 Ego/exo perspective work - if exists

### 5.3 variables

- independent/dependent variables
- measures
- task: reuse or adapt existing task

#### Task

- Onebody: artificial postures not from but like: tai chi, martial arts
- VR Dance Trainer: dance movements

#### Measures

- onebody
- VR Dance trainer

## Independent and Dependent Variables

### 5.4 Conclusion

- task is xyz because of abc
- measures are xyz because of abc
- variables are...

task is

# Chapter 6

## Study Setting/ concept

	UB	LB	FB
Ego	2 different movements	2 different movements	2 different movements
Exo	2 different movements	2 different movements	2 different movements
Ego/Exo	2 different movements	2 different movements	2 different movements



# Chapter 7

## Outlook

- timetable, what to do...