

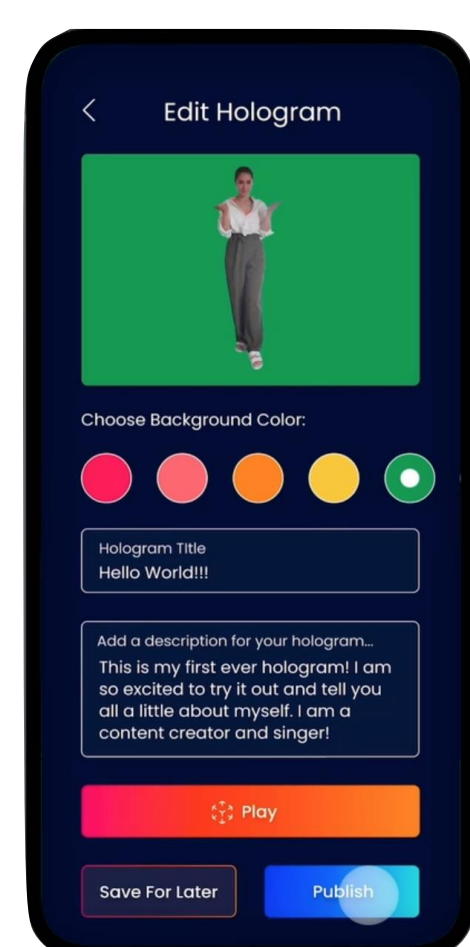
# Usability evaluation in Holographic Augmented Reality applications

## Introduction

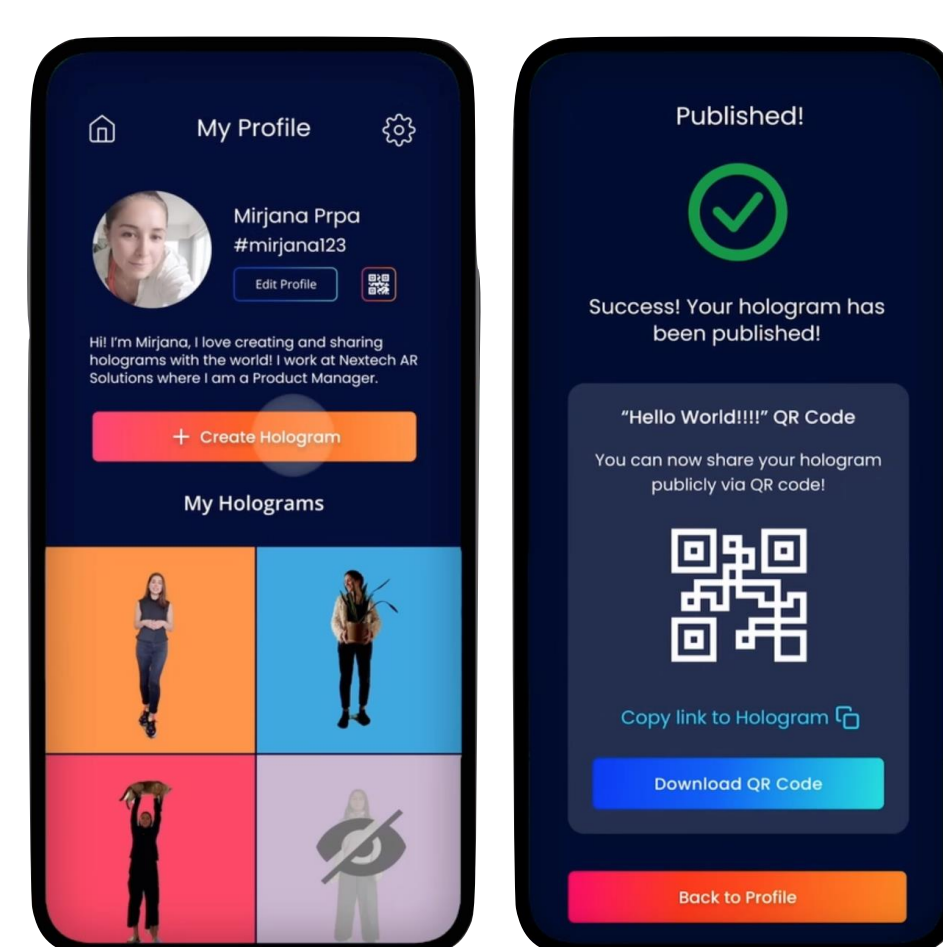
This study conducted a usability evaluation for **HoloX** as a pilot for Holographic AR applications. The target users are often novices of the AR applications and find it difficult to use them. Therefore, usability evaluation plays a crucial role in AR applications.

**HoloX** is the first AR application that enables users to create, share and view holograms on their smartphone devices. HoloX has been made by NexTech AR Solutions Company.

### Create



### Share



### View



## Research Objectives

1. To measure **Usability factors** based on effectiveness, efficiency and satisfaction
2. To explore the **Usability Issues** experienced by users
3. To offer **Design Guidelines**

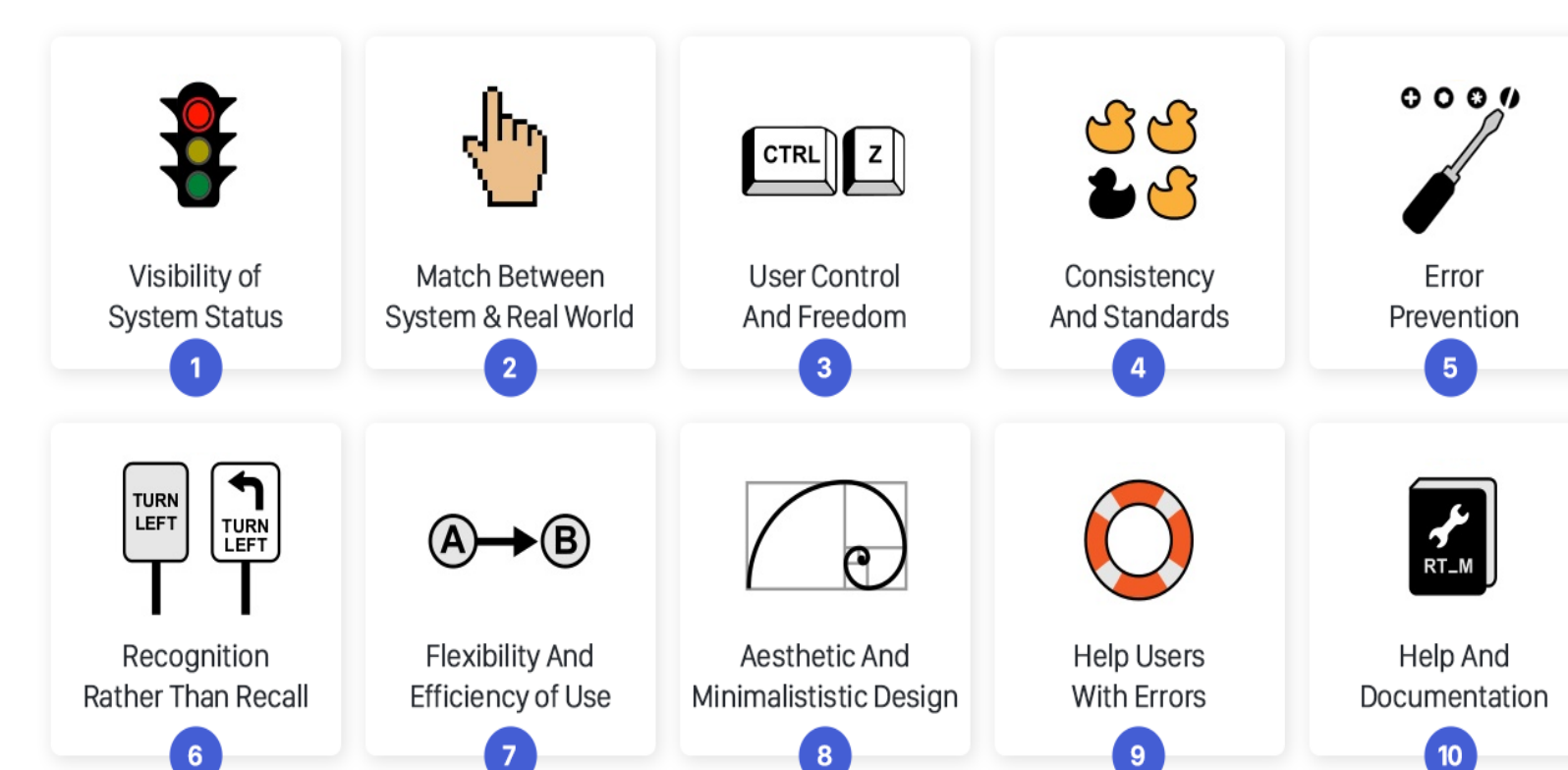
Research Ethics Approval has been received for Human Participant Research

## Methodology

### 1- Heuristic Evaluation

User group : 3 UX experts

**Purpose:** Finding usability Issue based on 10 nelson Heuristic



### 2- Cognitive Walkthrough

User group: 4 UX experts

**Purpose:** Exploring usability Issue by experts

### 3- Questionnaire

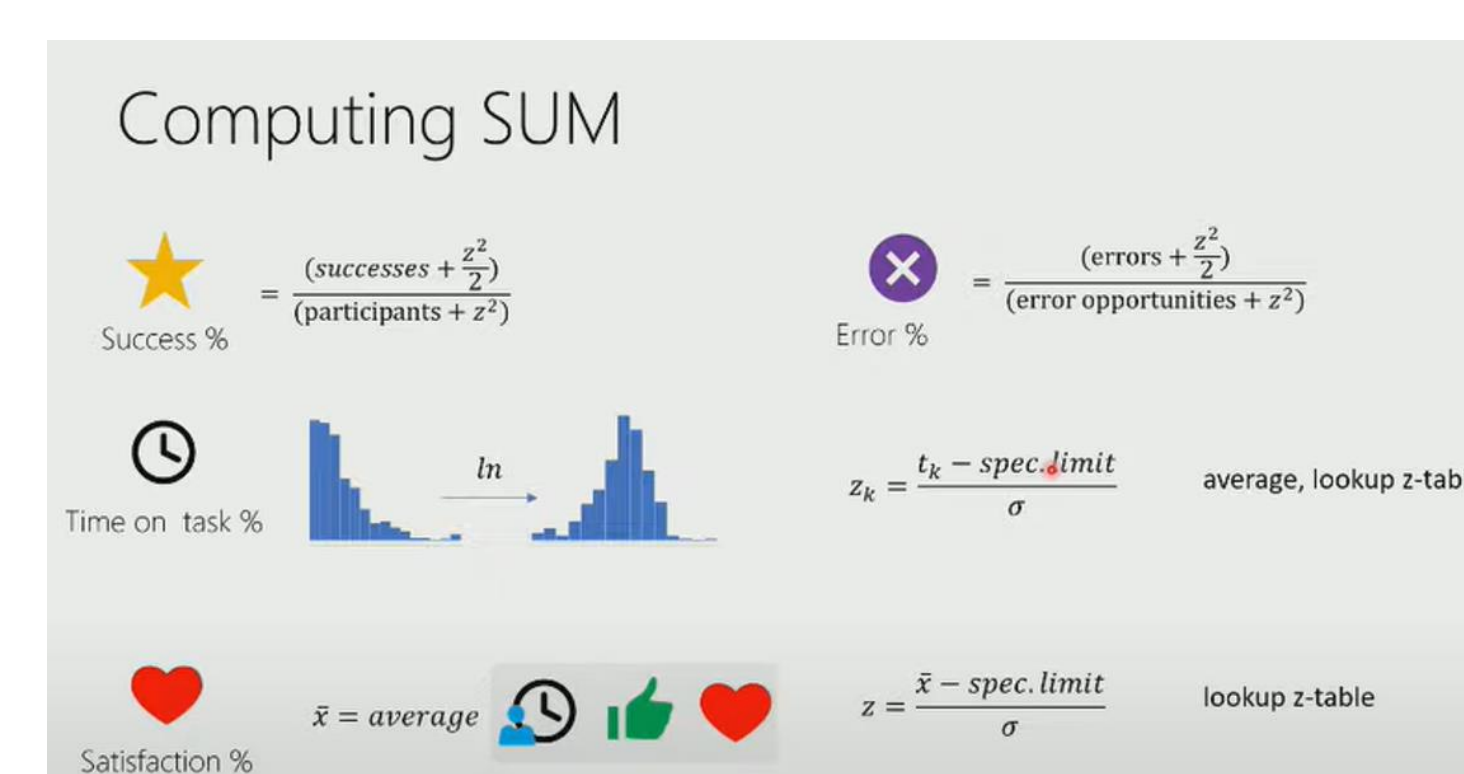
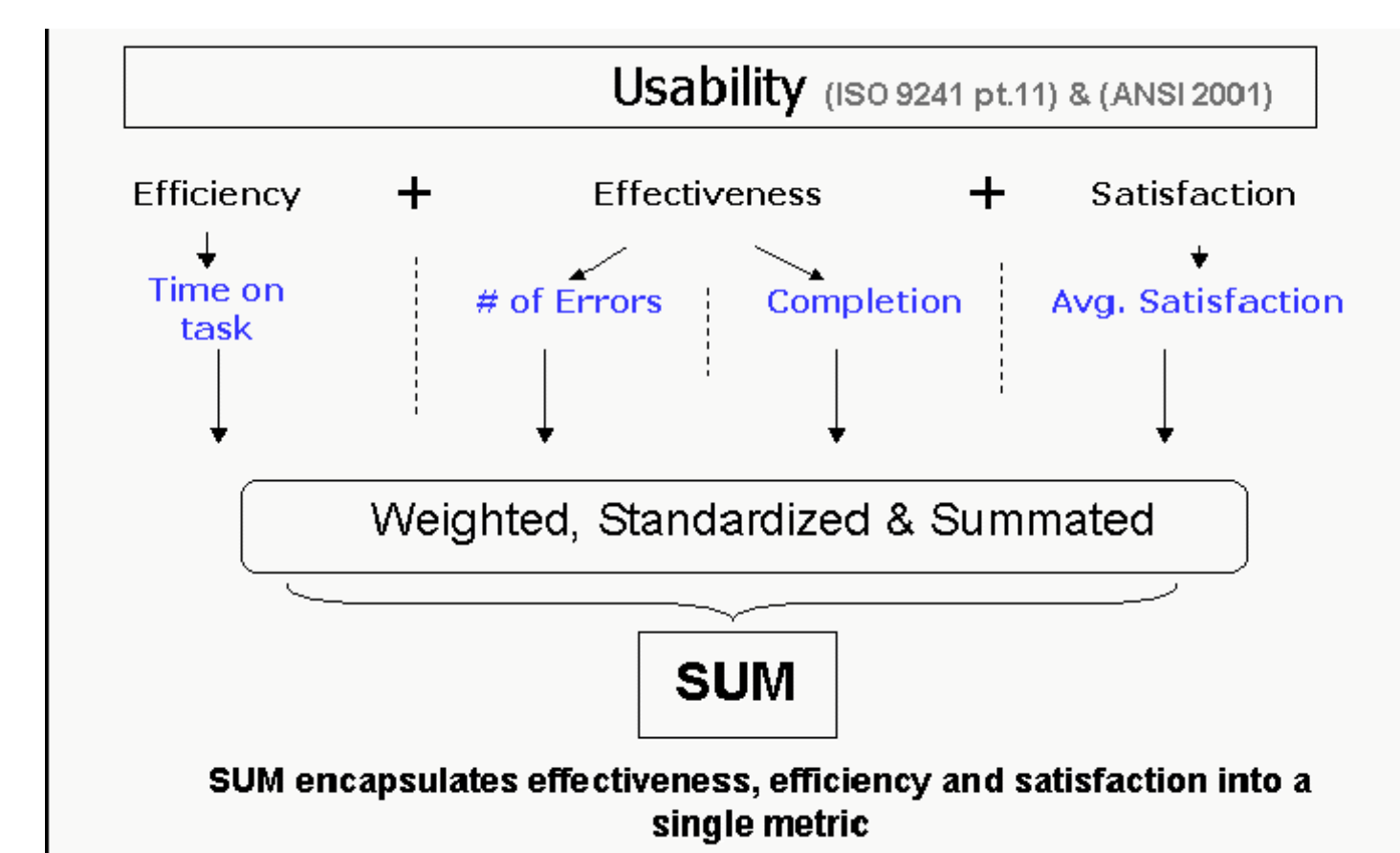
User group: 11 Computer Science Student

**Purpose:** Exploring Usability Issue by Novice users

### 4- Laboratory Observation

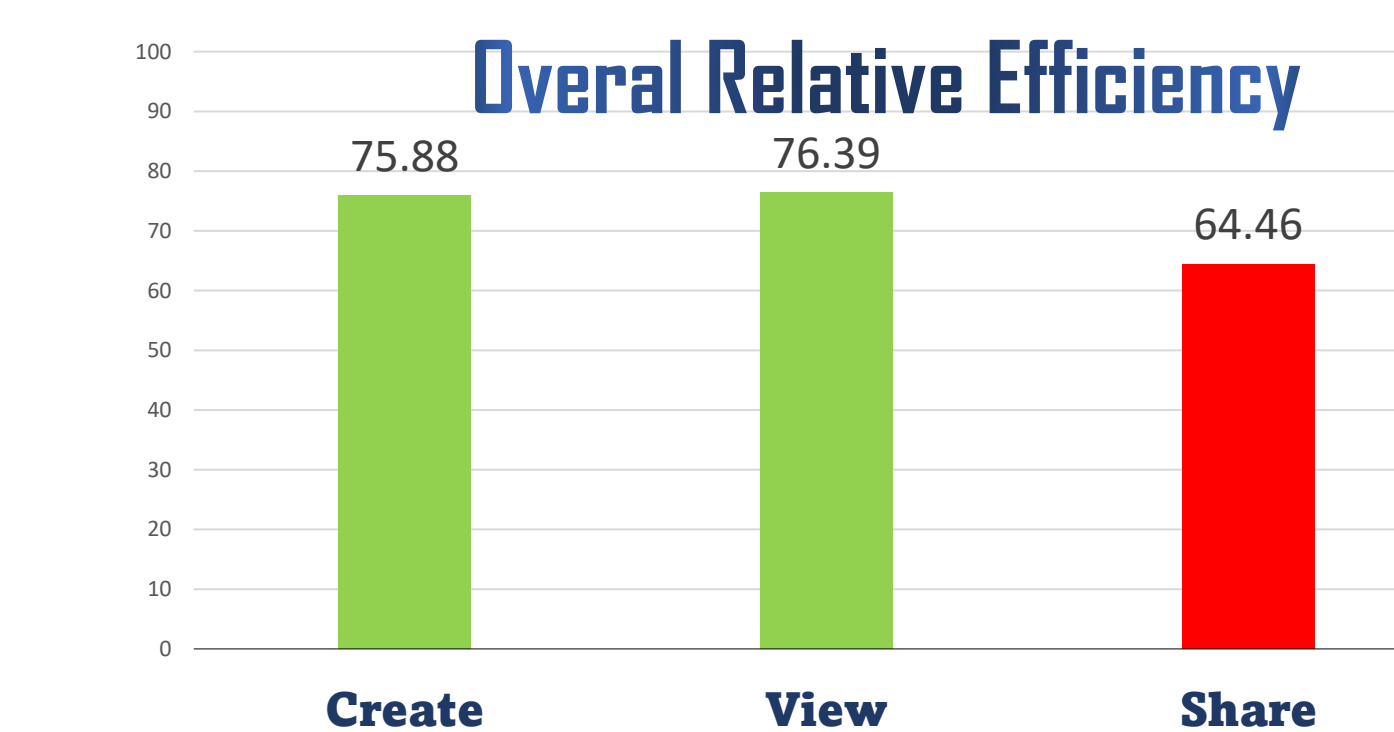
User group: 11 Computer Science Students

**Purpose:** Quantitative analysis for measuring Effectiveness, Efficient, Satisfaction (SUS)

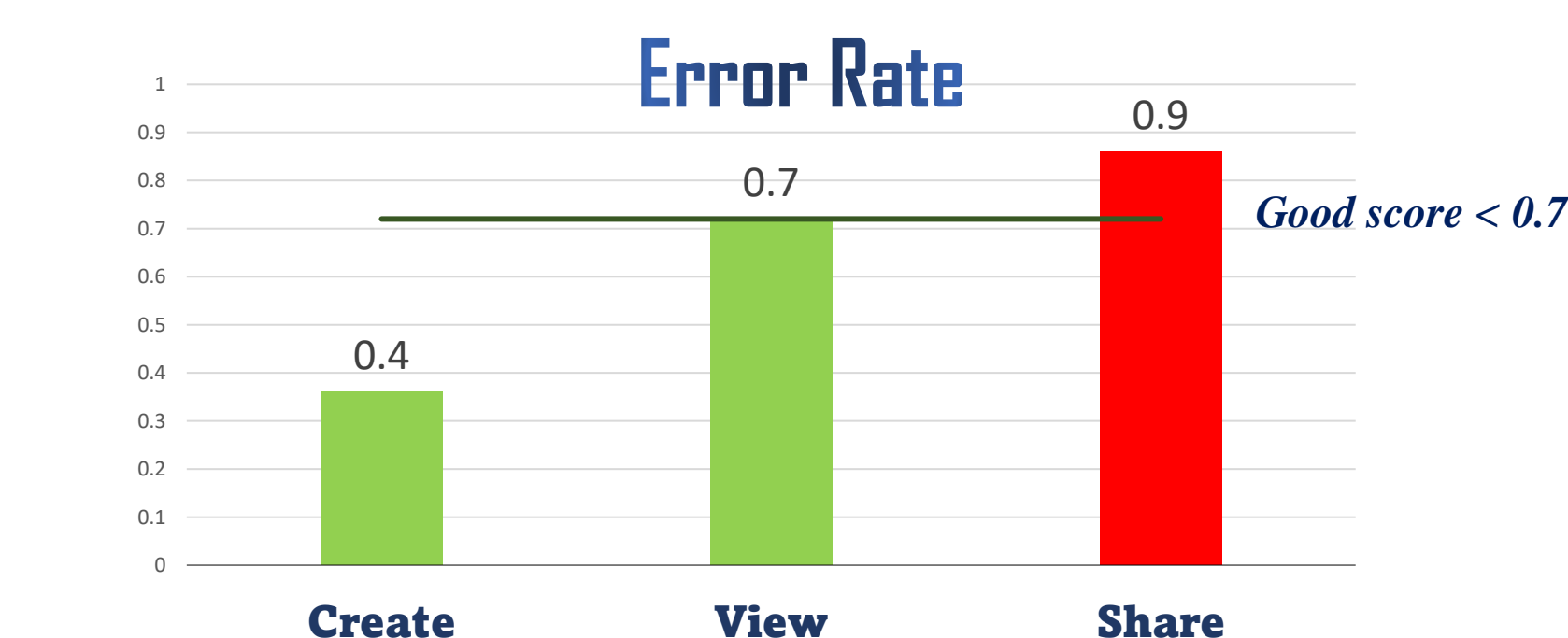
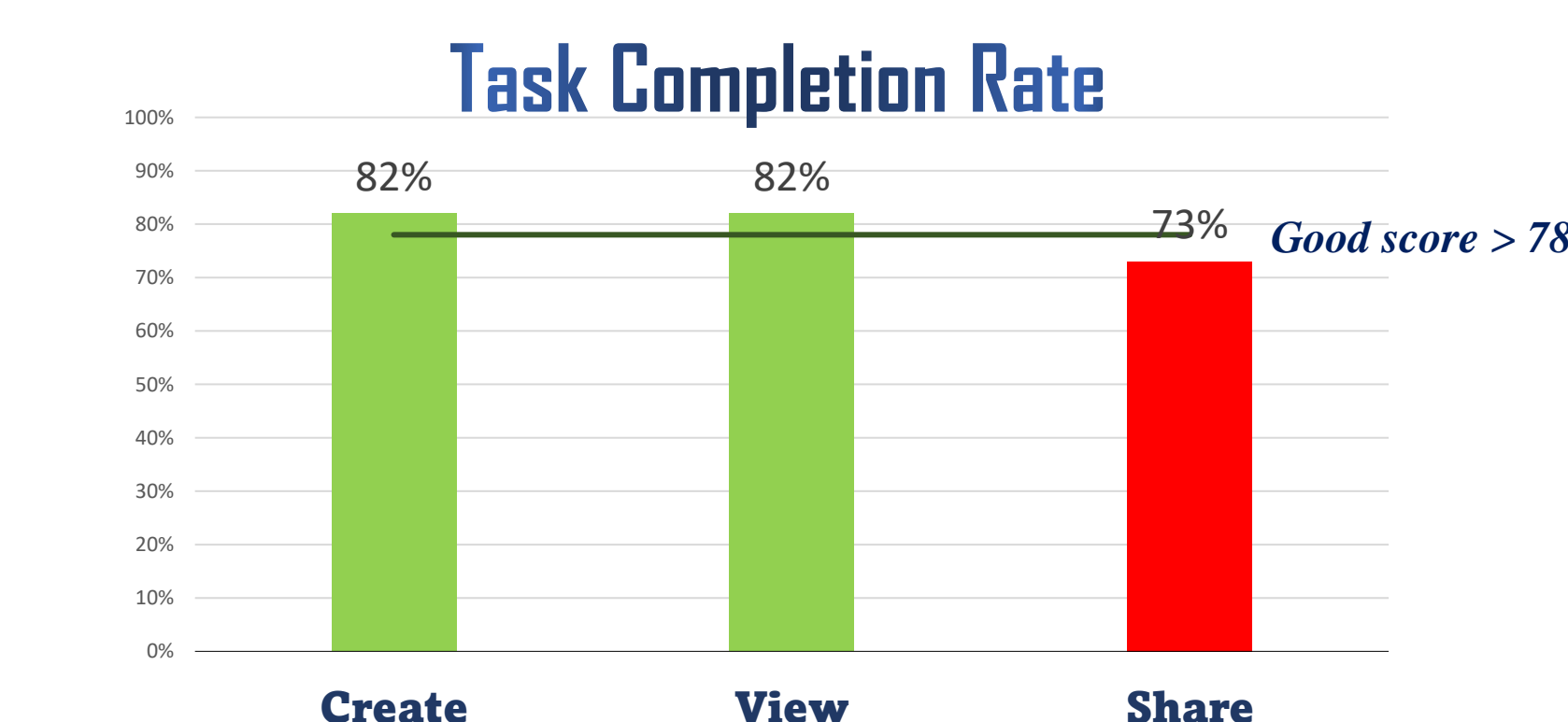


## Result

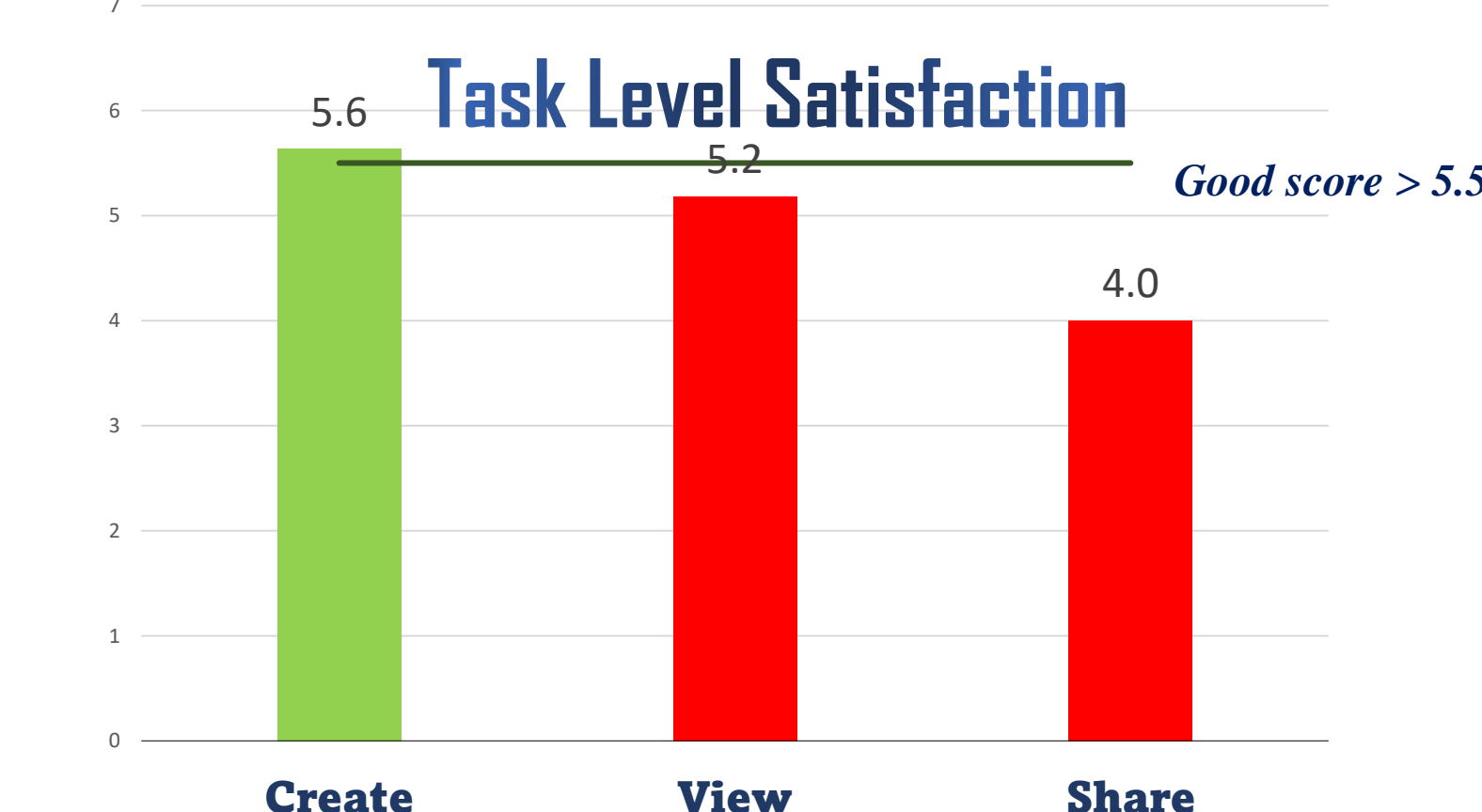
### Efficiency



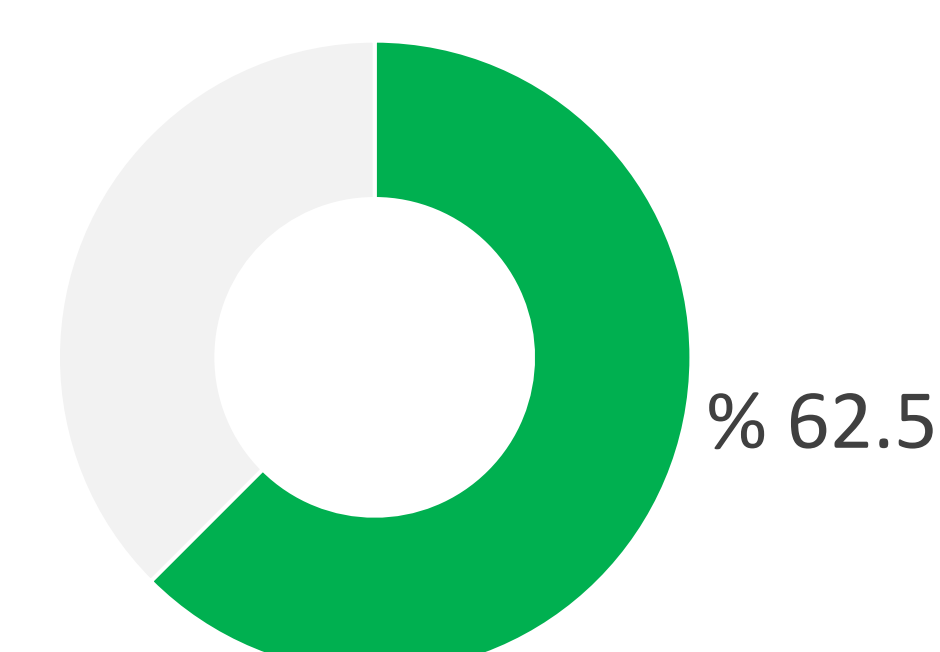
### Effectiveness



### Satisfaction

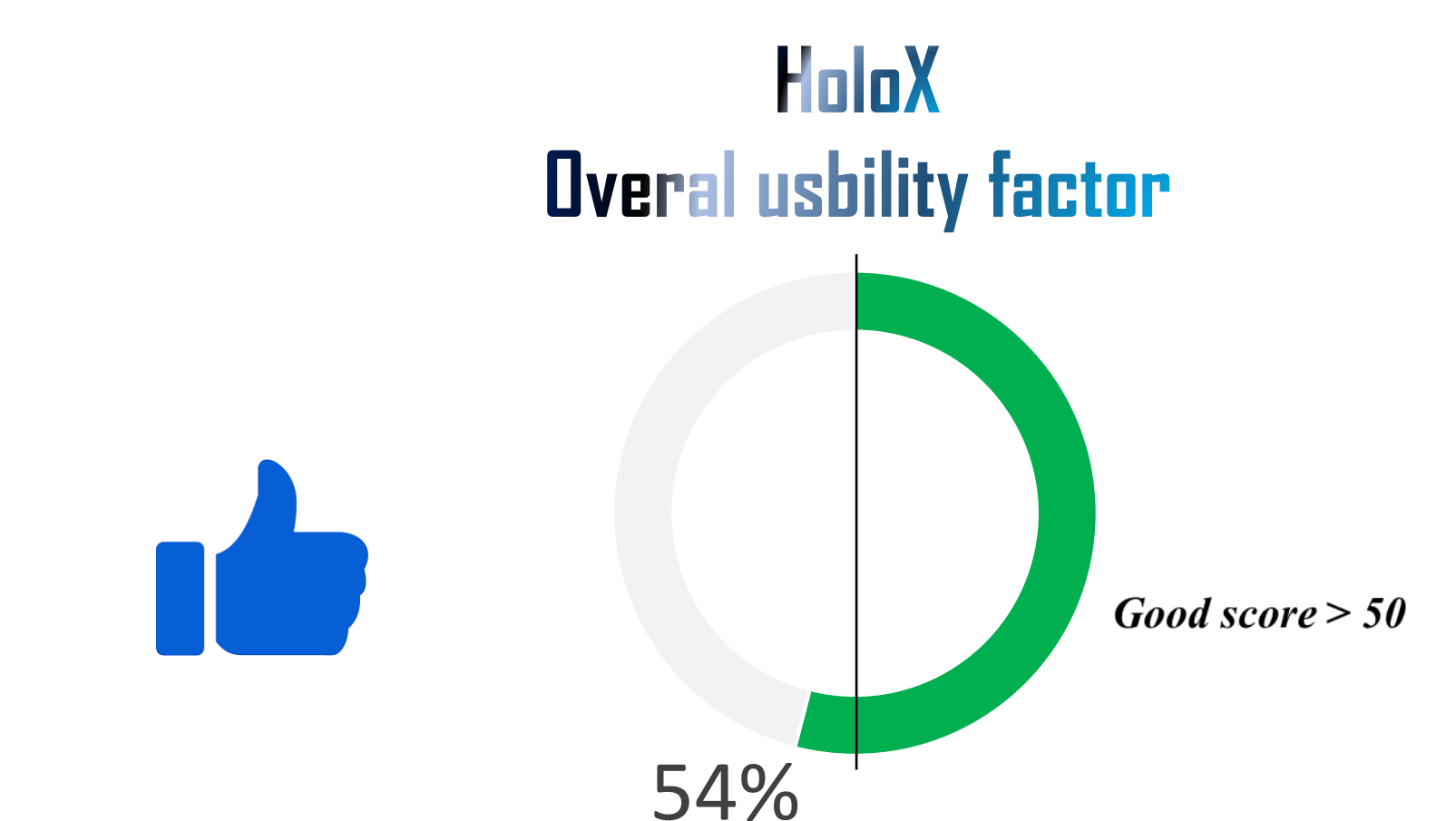
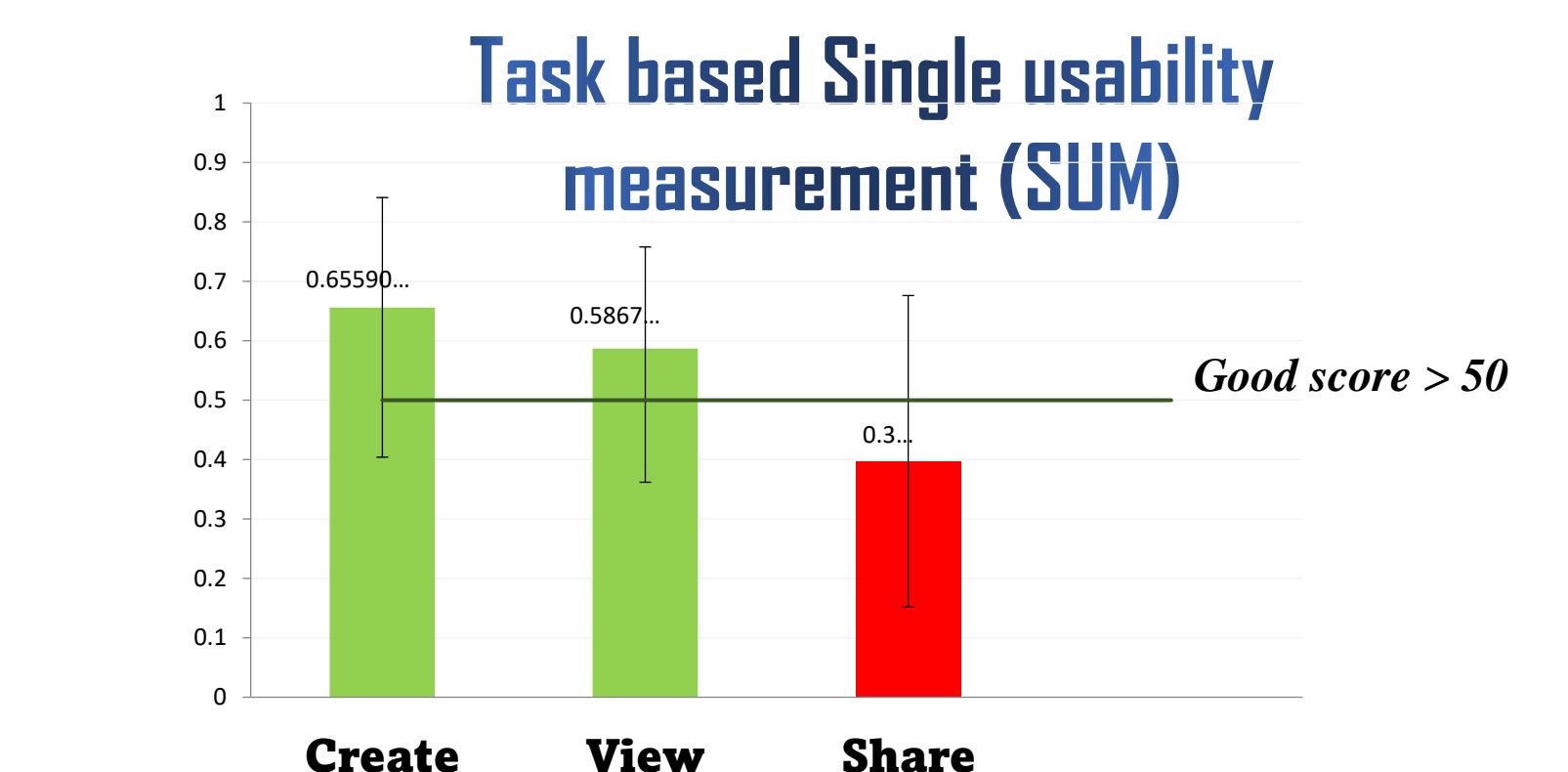


### Test Level Satisfaction(SUS)



## Summary

### 1- Usability Factor



### 2- Usability issues

- ❖ User flow
- ❖ Navigation through the application
- ❖ Finding the desired option
- ❖ Diagnosing incorrect inputs
- ❖ No help or visual aid before starting the task
- ❖ Not enough feedback
- ❖ No delete option
- ❖ Some confusing icons and labels(such as profile sharing icon)

### 3- Design Guideline

- ✓ Improving some navigational aspects and user flow
- ✓ Providing Feedback would be the biggest solution
- ✓ Providing visual prompts like meta-UI elements for preventing error
- ✓ Providing a visual aid before starting the task
- ✓ Showing animation gestures in the first time of use
- ✓ Providing proper labels and icons
- ✓ Process the hologram from the video locally on the phone without the need for the internet.

