



SURGICAL NURSE HERO

Corneal Transplant

A serious game by Claire, Bridget, Si Hao and Sahana

Project Overview

Surgical Nurse Hero: Corneal Transplant is an immersive 3D simulation game designed to enhance the learning experience for surgical nurses during their 2-week didactics course at the Singapore National Eye Centre. The game environment features realistic mock-ups of typical preparation and operation rooms to provide familiarity for surgical nurses. Players take on the role of a circulating nurse, tasked with setting up the required surgical instruments on patient and donor trolleys for a corneal transplant operation. The game also features a multi-level memory card game where players must match identical micro-instruments or match micro-instruments to their names.

Problem Statement

How might we design an **immersive serious game** that illustrates the **preoperative preparation procedures** for corneal transplants to **enhance the learning experience** for **surgical nurses** at the Singapore National Eye Centre?

Objectives of the Game

- Demonstrate proficiency with preoperative preparation procedures involved in corneal transplant, centred around the setting up of patient and donor trolleys.
- Familiarise with the surgical instruments involved in corneal transplant operations
- Demonstrate recognition of the major groups surgical micro-instruments which are used in Corneal Transplant operations

Target Audience

Considerations

- Surgical nurses practise different sequences in preparation procedures. Our game should provide the freedom to determine sequence as long as it reaches the end goal
- Some nurses may have low technical literacy. Our game should not induce stress
- Nurses have different learning paces. Our game should be designed as a mobile game app to provide flexibility

Goals

- Wants to improve their internalisation of didactics in addition to e-learning and hands-on simulation trainings
- Wants a form of silent revision at their own time

Challenges

- Finds it challenging to memorise a long list of steps in the preoperative preparation procedures for corneal transplant operations

The Game

ACTIONS

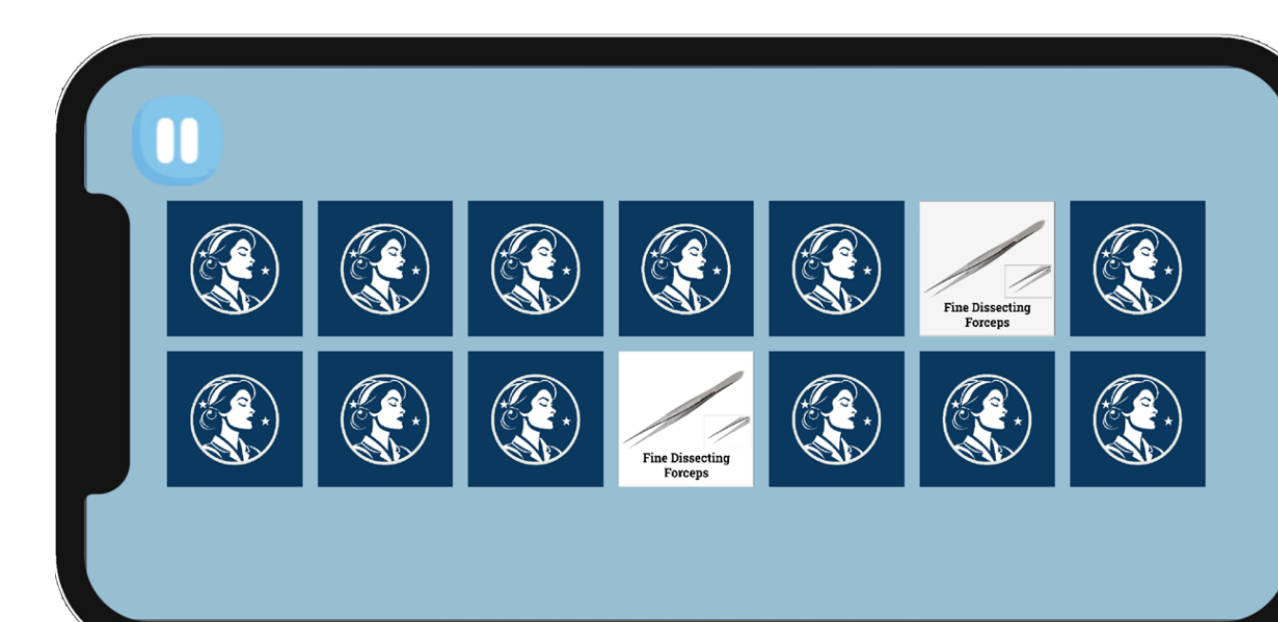
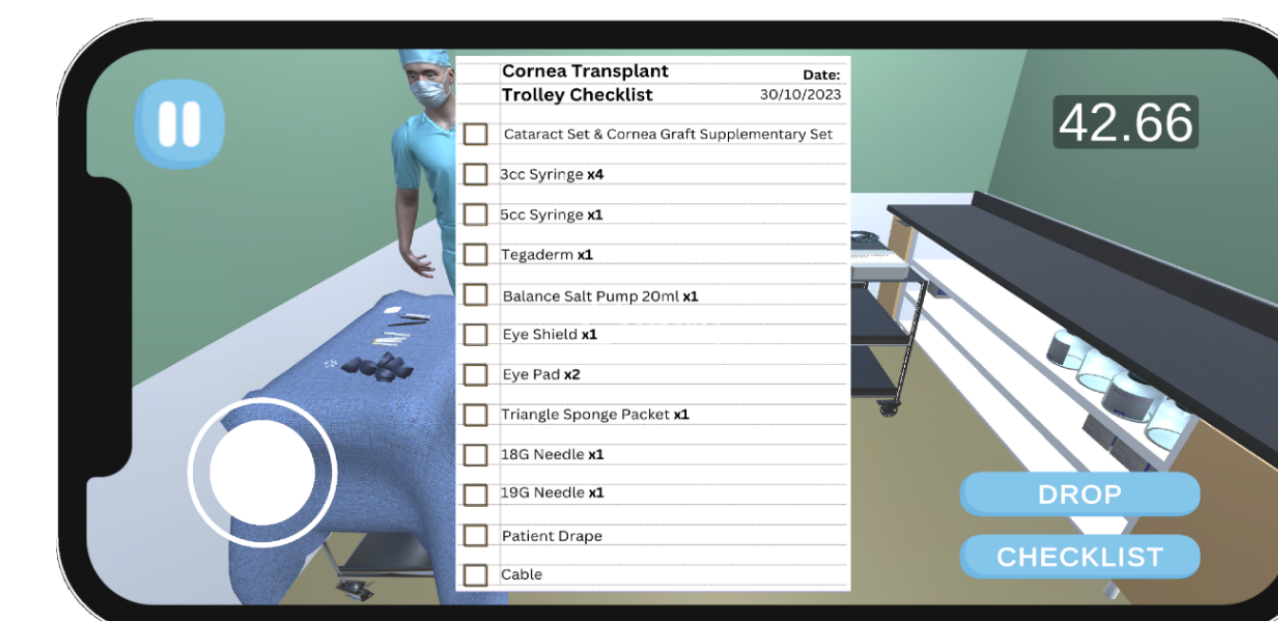
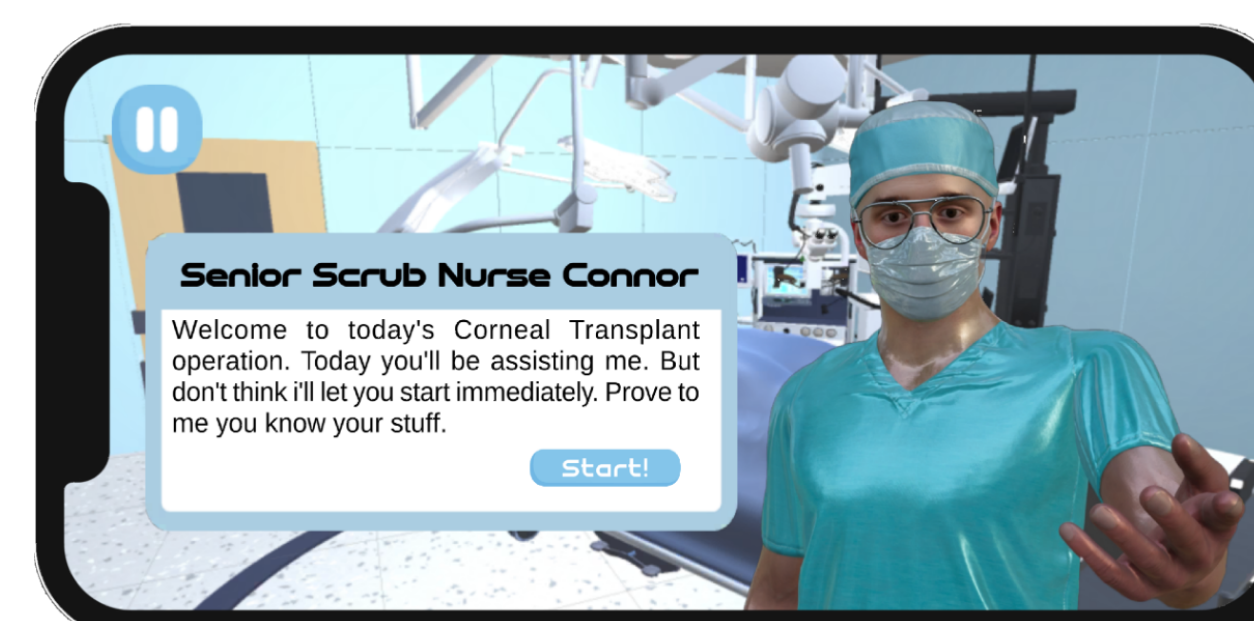
- Players can pick up and drop instrument sets from around the preparation room onto the trolleys
- Players can click to view and hide the instrument checklist to tally the required surgical instruments

RULES

- Players are free to pick up and drop surgical instruments onto the trolley in any sequence as long as the trolley ultimately contains all the required instruments

LEVELS

- The memory card game features two levels including image-to-image and image-to-name matching



Course Instructors

Dr. Leo Chen Huei
Assistant Professor
Prof. Fernando Bello
Associate Dean, Duke-NUS

Clinical Mentor

Ms. Elizabeth Phua Yu Ling
Nurse Educator, SNEC

Students

Chua Po Siang
Bridget
Claire
Oudea
Gan Li
Katragadda
Sahana
Lee Si Hao