Game - based VR computer for learning unicellular animals
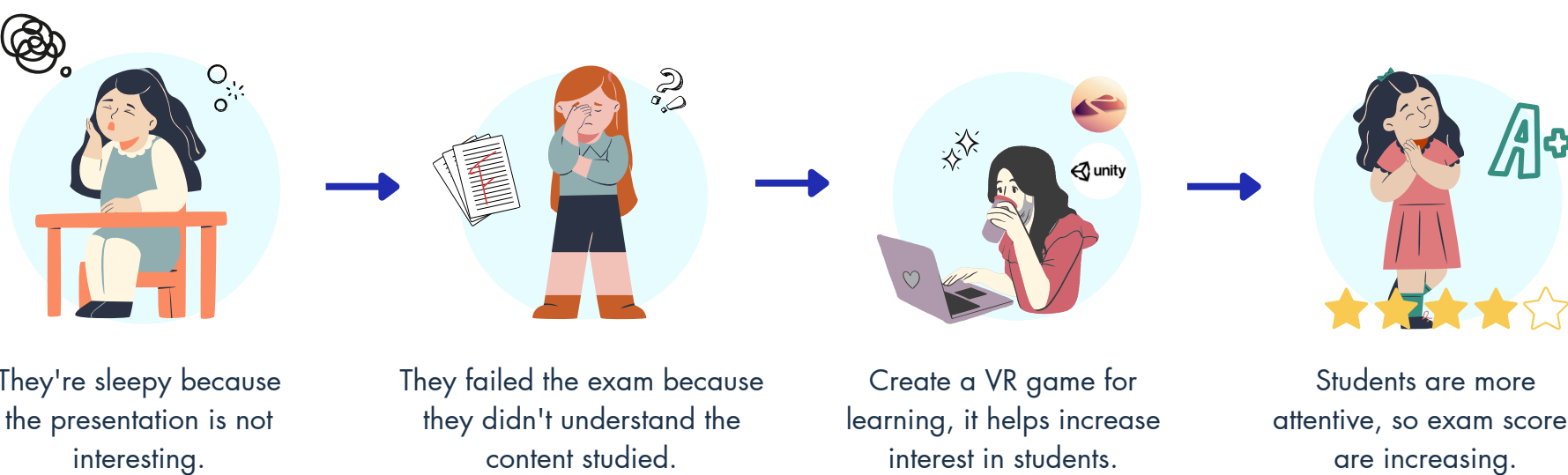
Researchers : Nattapat Srirung , Sirinya Wongchai , Natthakan wongsathann
Advisors : Manatchanok Tamwong
Princess Chulabhorn Science High School Chiang Rai, THAILAND

ABSTRACT

The study aims (1) to develop a VR computer game for learning about unicellular animals, (2) to compare the effectiveness of VR computer game, and (3) to find users' satisfaction with the VR computer game for learning about unicellular animals by Google form in 3 sides (content, usage, and artistic element). The 30 students of grade 7 from Princess Chulaborn Science High School Chiang Rai were selected randomly using the theory of Krejcie & Morgan. The game developed by Unity software and data was collected through tests and questionnaires. Data analysis was performed by using statistical averages. The results revealed that the Game-based VR computer for learning unicellular animals is effectively usable and enhances knowledge. The comparison of learning outcomes before ($\bar{x}$ = 10.5) and after ($\bar{x}$ = 15.3) using the game indicated that average scores are higher than ones before playing the game at 24%. The study also showed a high level ($\bar{x}$ = 4.62) of users' satisfaction with the content of the game, a high level ($\bar{x}$ = 4.58) of users' satisfaction with the usage of the game, and a high level ($\bar{x}$ = 4.59) of users' satisfaction with the aesthetics of the game.
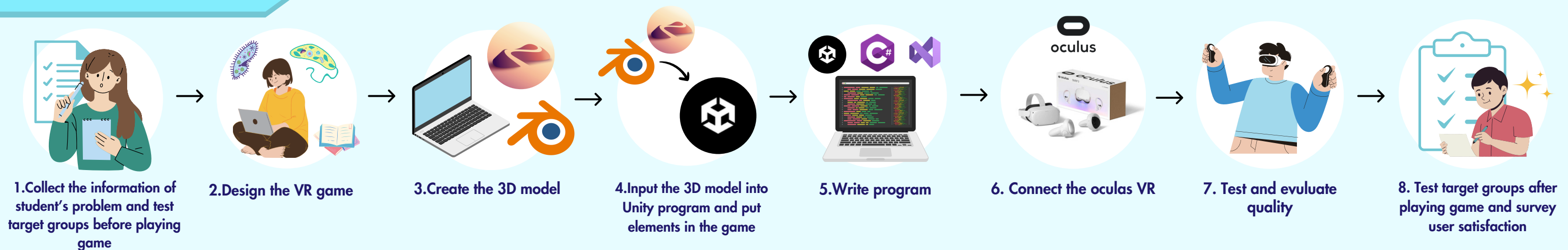
INTRODUCTION

They're sleepy because the presentation is not interesting.

They failed the exam because they didn't understand the content studied.

Create a VR game for learning, it helps increase interest in students.

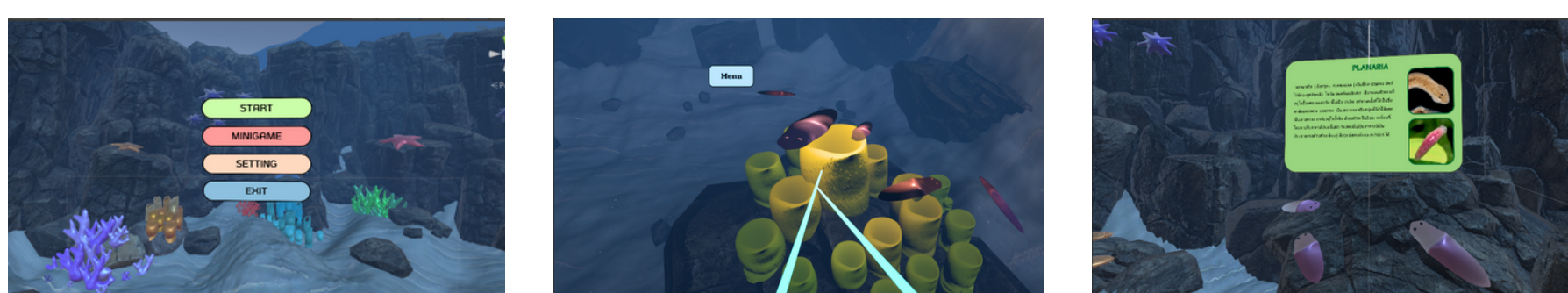Students are more attentive, so exam scores are increasing.

OBJECTIVES

1. To develop a VR computer game for learning about unicellular animals.

2. To compare the effectiveness of VR computer game.

3. To find users' satisfaction with the VR computer game for learning about unicellular animals by Google form in 3 sides (content, usage, and artistic element).
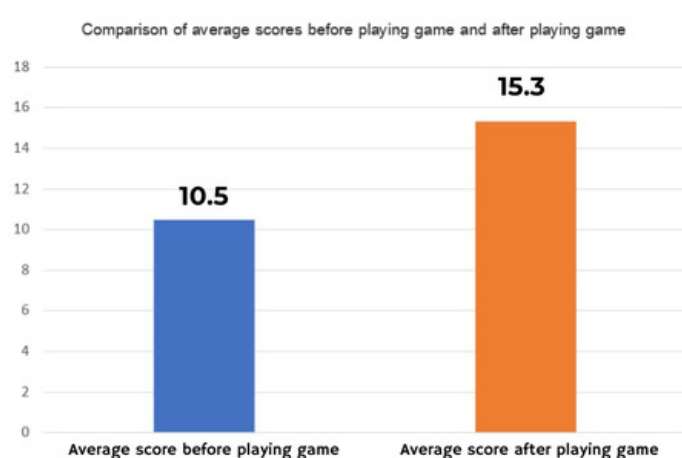
METHODS

1.Collect the information of student's problem and test target groups before playing game

2.Design the VR game

3.Create the 3D model

4.Input the 3D model into Unity program and put elements in the game

5.Write program

6. Connect the oculas VR

7. Test and evuluate quality

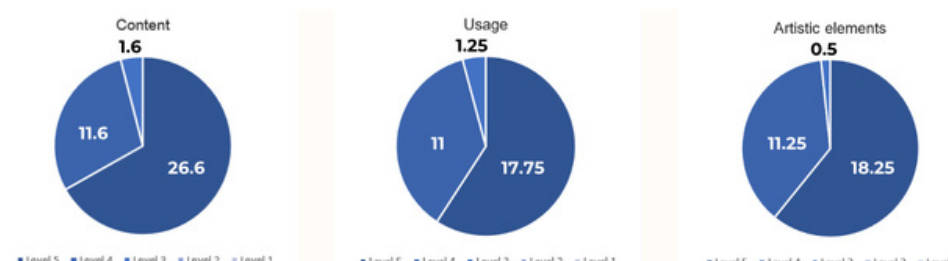8. Test target groups after playing game and survey user satisfaction

RESULTS

Development

The Graph illustrates the comparison of average scores before and after playing game.

The circle illustrates user's satisfaction 3 side.

CONCLUSION

The results revealed that the Game-based VR computer for learning unicellular animals is effectively usable and enhances knowledge. The comparison of learning outcomes before ($\bar{x}$ = 10.5) and after ($\bar{x}$ = 15.3) using the game indicated that average scores are higher than ones before playing the game at 24%. The study also showed a high level ($\bar{x}$ = 4.62) of users' satisfaction with the content of the game, a high level ($\bar{x}$ = 4.58) of users' satisfaction with the usage of the game, and a high level ($\bar{x}$ = 4.59) of users' satisfaction with the aesthetics of the game.

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