

# Virtual Game Day Visualization

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## OVERVIEW

Iowa State University (ISU) has many guests on campus during football season. However, not all guests have a chance to experience an ISU game in person. Virtual Reality is an ideal way to showcase the ISU football experience year round. To create a virtual visualization of an ISU game, a 'Game Day' application was created to test the differences between using Virtual Reality technologies and the current system of showing video recordings.

## OBJECTIVE

The goal of the study is to create an ISU 'Game Day' simulation to test if there is a significant difference in presence and experience across dissimilar virtual reality platforms. To evaluate the effectiveness of these platforms, the study objectively analyzes a participant's experience in the environment using a 'Game Day' application built using Unity 3D.



## METHODS

### Pre-Questionnaires

- Demographics Questionnaire
- Immersive Tendencies Questionnaire

### Simulation of Application

Participants are randomly assigned to one of three different display systems (C6, Head-Mounted Display, or 2D desktop) to view the 'Game Day' application or video from the Athletic Department. While immersed in the simulation users will be interacting with the environment and viewing staples of a typical ISU football game.

### Post-Questionnaires

- Presence Questionnaire
- Attention Questionnaire

## ANTICIPATED RESULTS

We hypothesize that most participants will find the C6 the most effective in visualizing the Game Day application. However, we also hypothesize the HMD will be comparable in experience and presence to the C6 thereby justifying the use of a HMD for portable use. Additionally, we hypothesize that participants who score highly on the immersive tendencies questionnaire will score highly on the presence and attention questionnaires after the simulation is completed.

## FUTURE WORK

The simulation will need the addition of more realistic scenes including offensive and defensive plays, a team huddle, and cheerleaders. Additionally, user studies will need to be conducted to measure the effectiveness across the three different platforms.

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