

Effect of Display Size on a Player's Situational Awareness in Real-Time Strategy Games

Peter Miralles

Advisor – Prof. Fernandes

Introduction

If someone were to use a computer for everyday use such as checking email or writing papers or similar tasks they would do well to have a large display. They would be able to spread out their work so that they could see all of it at once instead of needing to switch between various pages. It is also easy to take whatever they are focusing on and put it in the middle of the display where it is easier to focus on it. There also is very little penalty for taking slightly longer to determine what information is needed at any given time. This however is not the case when it comes to video games where almost none of these traits hold true.



Situational awareness

Situational awareness refers to a player's ability to quickly retrieve Information, along with their ability to know what is the most important thing to do at any given time. The ability to retrieve information quickly and knowing as much about the game at any given moment while playing a video game is critical.

What is a Real-Time Strategy game

In a real-time strategy game the player controls an army which consists of small characters the player controls called units. In addition to controlling the units the player must also keep track of the terrain and various resources which allow for the creation of more units or upgrading units to make them stronger.

How to test Situational Awareness

Participants are given a situation in which there are multiple pieces of information that are spread across the screen that can be used to determine what the most important thing to do at the moment is. One piece of information they will want to keep track of is how much health units have left and if an enemy that is approaching has an advantage over individual units and if they should be repositioned.

Results

Wave	Vital Information	How many subjects noticed the information	How many subjects didn't notice the information
2	There are rocket units attacking the your tank unit	Large- 0 Small- 1	Large- 4 Small- 2
3	There are rockets attacking your tank unit and you are being attacked off screen	Large- 2 Small- 3	Large- 2 Small- 0
4	You are being attacked off screen	Large- 3 Small- 1	Large- 1 Small- 2

Validity Threats

- Small sample size
- Units have difficulty pathfinding when bunched together
- Computer used had difficulty running the game
- Only one participant had any experience with the game
- Units AI didn't always behave the same way



- Important information boxed in blue