



**International Hellenic University**  
**Department of Environmental Engineering**



**Laboratory of**  
**Environmental Informatics and Virtual Reality**

**Virtual Reality in**  
**disaster and**  
**emergency**  
**management**

Dr Mentzelou Paraskevi





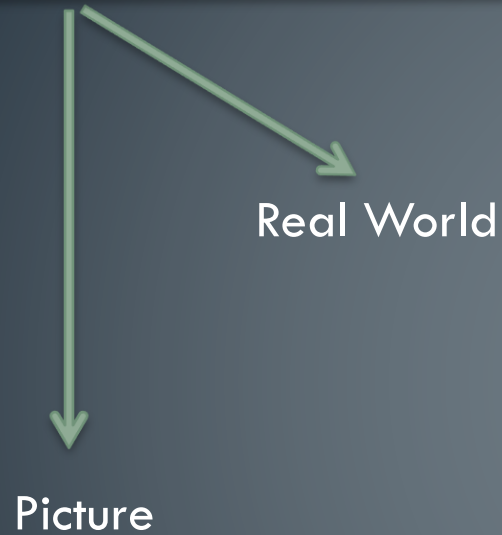
# VIRTUAL AND AUGMENTED REALITY

Virtual reality (VR) and augmented reality (AR) are two technologies which create new and exciting interactive experiences..



# VIRTUAL REALITY

Virtual Reality = simulation of an environment by a computer





# VIRTUAL REALITY

Realistic image reproduction in 3D format.

The user is unable to distinguish between the real world and the imaginary world



# VIRTUAL REALITY

Virtual Reality success is based on three aspects:

- simulation
- Interactivity
- real time



# VIRTUAL REALITY IN DISASTER AND EMERGENCY MANAGEMENT





# VIRTUAL REALITY IN DISASTER AND EMERGENCY MANAGEMENT

Key factor – assistance = training

- Workshop
- Development
- Learn
- Skills
- Caching
- Teaching
- knowledge



# VIRTUAL REALITY IN DISASTER AND EMERGENCY MANAGEMENT

Training takes place through Simulation

Simulation is based on the application of a real situation or event model which is created for training purposes in order to help people to deal with such situations or events:





# VIRTUAL REALITY IN DISASTER AND EMERGENCY MANAGEMENT



Training through simulation

# VIRTUAL REALITY IN DISASTER AND EMERGENCY MANAGEMENT

## Training through simulation

- Cost effective
- Safe learning environment
- Repeated practice in diverse scenarios
- Enhanced Knowledge Retention
- Real time feedback
- **Measurable results**





# VIRTUAL REALITY IN DISASTER AND EMERGENCY MANAGEMENT

## Training through simulation cases

- **Disasters**
  - Earthquakes
  - Floods
  - Tsunamis
  - Wildfires
  - Cyclones storms
  - Volcanic eruptions
- **Chemical and nuclear accidents**
- **Road accidents**

# VIRTUAL REALITY IN DISASTER AND EMERGENCY MANAGEMENT

**Training through simulation**

## **Drawbacks**

- Development - initial costs
- Unfamiliarity with technology
- Age restrictions
- Health restrictions
- Continuous monitoring of the trainees



**Thank you**

