APDRC’s Virtual Reality based Disaster Resilience Training

Yoonkyung KIM, Director, APDRC
Asia Pacific is “Supermarket of Disasters”

- Home to over **60%** of the world’s population
- Most disaster prone region facing over **55% of world disasters**

Disaster safety training is not an option
Realistic and participatory training is needed

Tsunami  Drought  Floods
Typhoon  Earthquakes  Violence/Population Movement
• Nobody knows how they’ll react in an emergency until disaster strikes. However, we can test our ability or learn to handle stress and solve problems in chaotic situations.

• People can experience in different disaster situations if they are actually there.

• Learning by doing / Makes experiences memorable

• Human - Visual creatures: Makes learning more visual
VR based trainings

Military Training

Immersive First Aid Training

VR surgery training
VR market will be worth US$70 billion by 2020

Figure: Global VR Market Value, 2016~2020
Unit: US$ Million

Source: Trendforce, Dec., 2015

The 2nd AP Interactive Innovation Workshop on Disaster Resilience
12-14 December 2018, Seoul
VR based Disaster Resilience Training

- With greater awareness of how dangerous disasters can be, people can be better prepared for disasters when they happen and be more likely to take right actions

- Period: Apr. to Dec. 2018
- Budget: USD 47,000
- Funded by RCHC
- With 5 National Societies

Be SAFE. Be RESILIENT.
VR Contents and devices

2 Contents

- Fire in a theatre
- Escape from a sinking ship

10 VR Devices

- Laptop
- Head-mounted display
- 2 touch controllers
- 2 sensors
Scenario 1: Fire in a theatre
Scenario 2: Escaping from sinking ship
### Statistics in VR training

- Period: April to November 2018

<table>
<thead>
<tr>
<th>Country</th>
<th>Devices</th>
<th>Targets</th>
<th>Participants</th>
<th>Events</th>
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</thead>
<tbody>
<tr>
<td>Rep. of Korea</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>2,970</strong></td>
<td><strong>3,196</strong></td>
<td><strong>66</strong></td>
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## How to operate VR training

<table>
<thead>
<tr>
<th>1 Hour</th>
<th>5 Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-lecture + VR experience + leaflet</td>
<td>VR experience + leaflet</td>
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</tbody>
</table>

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AP FbF Workshop, KL
AMCDRR, Mongolia
Youth Exchange Program, Korea
National Youth Camp
Korea Baseball All Star Game
AP Regional Conference

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Satisfaction Survey

Level of satisfaction

Comments

New contents
1,137 out of 1,205 respondents were satisfied.
Comments from participants

It was like a real disaster. When disaster happens, I think I can do as I learned.

It is helpful to understand the psychology of victims affected by disasters

Excellent!

Very attractive for Young people to experience

Realistic

Excellent!

Very essential

New and creative

Great experience

Amazing

Easy to learn

Very educational and fun!

I can learn how to react to disasters

Very useful training

Definitely need for all students and all people

It was not boring because it is vivid and realistic

Please provide more opportunity to experience in VR training

Want to experience in more diverse scenarios

I didn’t think it will be happened to me. But after VR experience, I realized that it could be happened to me.
VR based training offers significant advantages over other traditional trainings

- Enabling participants to learn basics without endangering
- Helpful for enhancing concentration level and the retention of information
- Immersive and participatory nature offers a realistic quality
- Bridging the gaps of other commonly established training formats
- Attractive method for young people with gamification factors

Lessons Learned

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Challenges

• Limit of Use
  - Aging population unfamiliar with technologies
• Motion sick
• Time: Limit of the number of participants
• Money money: Lack of VR devices
Virtual Reality, Training of Future?

- 21st-century classrooms will be technologically advanced places of learning, with VR technology significantly increasing engagement.
- It is time to invest in VR to enhance the quality of trainings and better respond to humanitarian situations.
- VR can be used in all trainings provided by RCRC Movement.

Suggested areas:
- School safety, DRR, DR, First Aid,
- Road Safety, IHL, Non-Violence & Peace, Migration... etc.
  (incl. IMPACT, RDRT, ERU training)
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790 participants want to try it again and xx% would recommend it to friends.

https://youtu.be/QuUavS3WS
“Virtual reality was once the dream of science fiction. But the internet was also once a dream, and so were computers and smartphones”.

- Mark Zuckerberg -