

Early stage experiences of using Virtual Reality to enhance learning experiences with ionizing radiation in RP courses

NRG Academy – ETRAP 2023

© NRG Academy 2023 All rights reserved.

Nothing from this publication may be multiplied, copied, published, altered or used in whatever way, online and offline, without prior written consent from NRG Academy.



Contents

Introduction

Current training scenarios

Early stage experiences

Conclusion

Outlook

Introduction

Let's talk about VR

- Who of you has already “played” with a Virtual Reality set?



For those interested: there is a possibility to try out the VR set tomorrow!

Current training scenarios

Scrap metal scenario

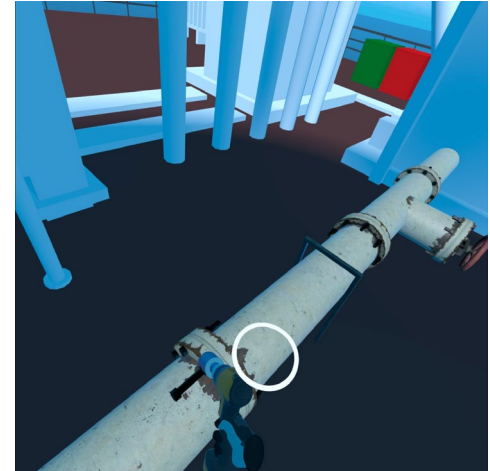
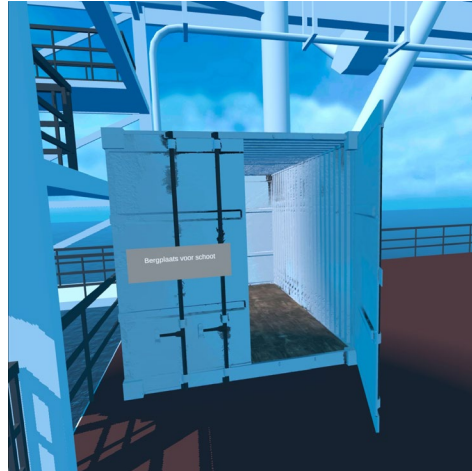
- Locating and securing contaminated object(s)
- Variety of personal protective equipments
- Total dose received and hand dose
- Score: safety points (PPEs) and dose



Current training scenarios

Production platform scenario

- Decommissioning contaminated production parts
- Measure and manage contamination
- Total dose received and hand dose
- Score: safety points, dose and created risk of contamination



Current training scenarios

Medical scenario

- Measuring transmission through multiple mediums
- Determining the half value layers



Early stage experiences

Advantages

- 100% ALARA
- Plug-and-play
- Tailormade scenarios
- Sandbox mode
- Feels real and is fun!
- Competitive

Safety points to keep in mind:

- Safety borders
- Bending over
- Picking up
- Walking around

Disadvantages

- Getting accustomed with VR
- Some experience:
 - Dizziness
 - Nauseousness



Conclusions

- 100% ALARA
- Enhances the learning experience of students in a fun way
- However:
 - Scepticism if VR can be a 1-1 replacement of lab training
 - VR can cause:
 - Dizziness (especially older people) and nauseousness



Outlook

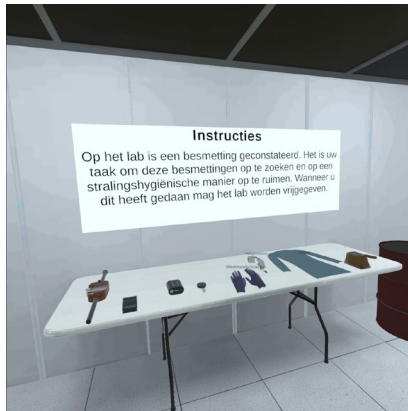
- Development of a sandbox mode:
 - Shielding
 - Sources
 - Dosimeter
 - ...
- Model of a primary x-ray beam
- Laboratory environment



Scenario under development

Laboratory environment

- Locating and decontaminating spilled radioactive material
- Calculating the scope of the spilled activity
- Variety of personal protective equipment
- Total dose received and hand dose
- Score: safety point, dose and spills cleaned (and possibly created)





NRG

ACADEMY