

S. Girmay

# Virtual laboratories in chemical and laboratory safety education

## Introduction

- Chemical safety education plays a crucial role in fostering understanding and practical skills.
- Virtual laboratories offer a new approach to enhance chemical and laboratory safety education.

## Benefits

- ✓ Interactive learning experience
- ✓ Reduced physical risks and student anxiety
- ✓ Accessibility and flexibility
- ✓ Cost-effective solution

## Feedback

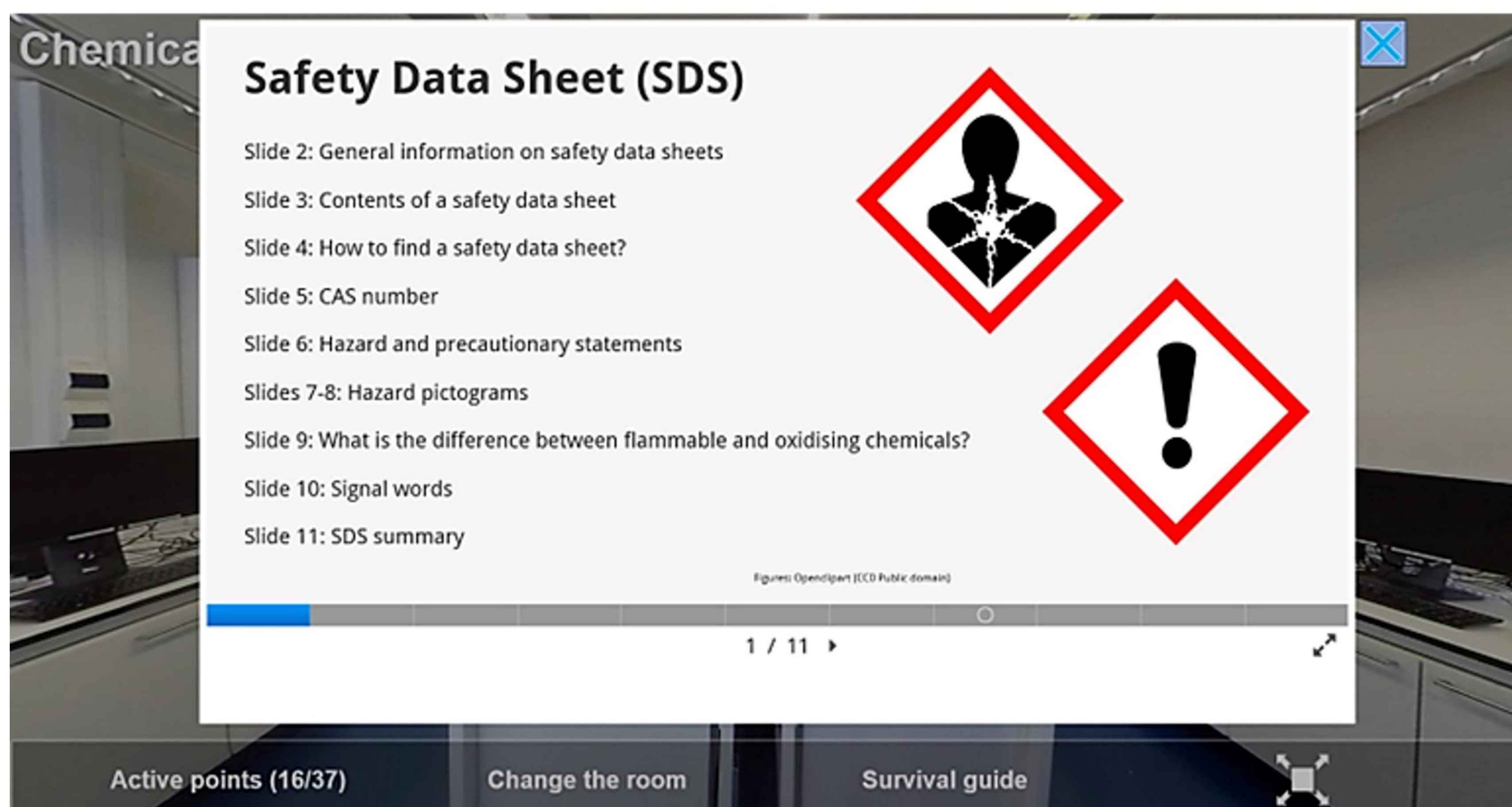
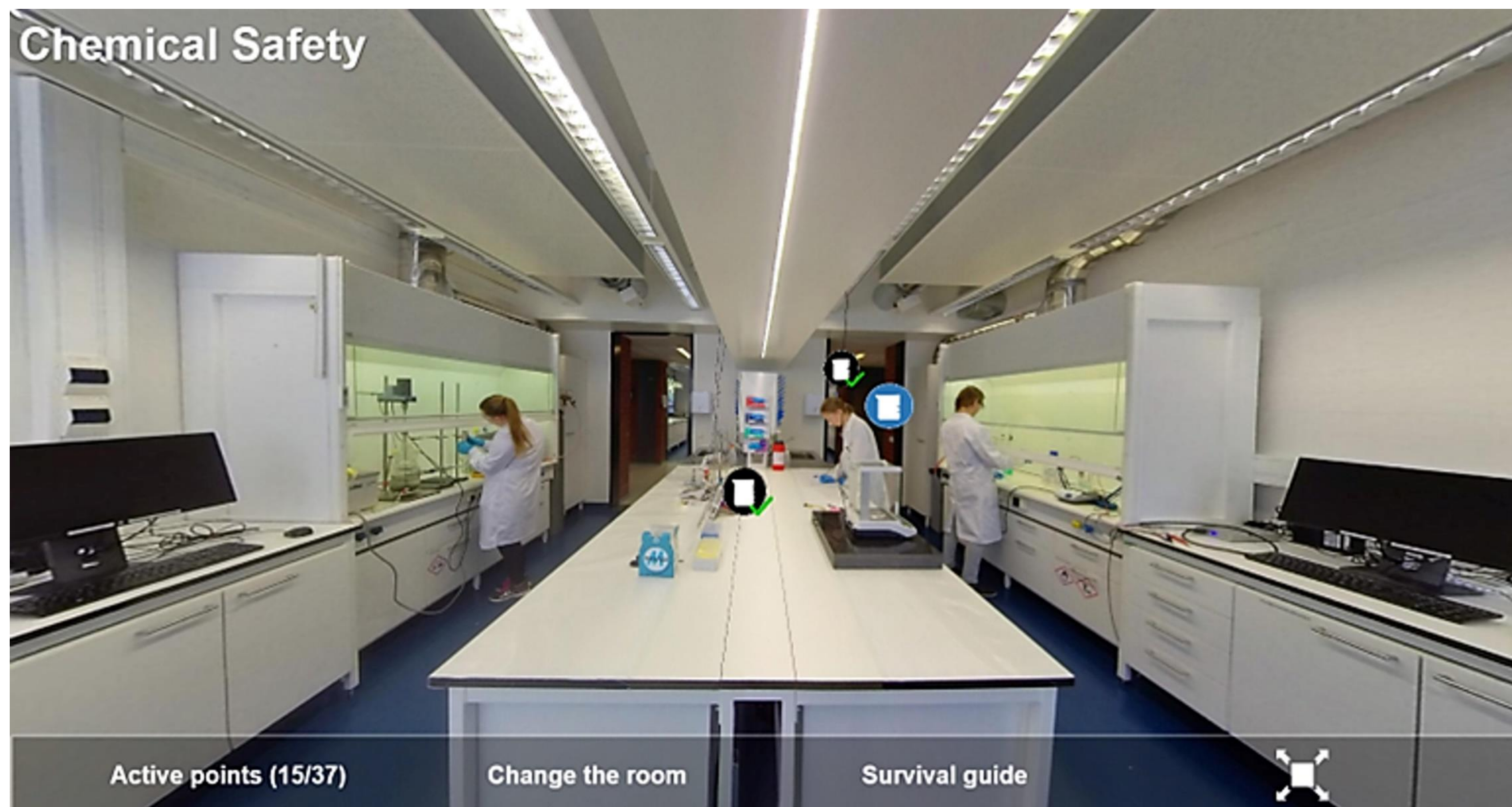
- **Over 95%** of respondents (N=942) considered virtual laboratories to be a **beneficial learning platform** for laboratory safety.
- **Decrease of anxiety and stress** in students
- Almost **no issues** were reported to the responsible teacher.

## Conclusion

- Feedback from students highlights the effectiveness of the virtual laboratory in promoting motivation, engagement, and understanding of laboratory safety.
- Future steps are to enhance the design of the virtual laboratory and implement into other laboratory course.

## AALTOLAB team

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- **Aim of the AALTOLAB** is to provide virtual laboratory as a supportive learning tool for chemical engineering education.



I think that a virtual laboratory tour is a good way to learn about laboratory safety.

