Developments in e-learning and their prospects

13 November 2024

LEADERSHIP **NAVIGATION**

Agenda

1. A brief history of e-learning in health and safety training
2. Evolution of the NEPSI e-learning platform
3. What's next for e-learning?

A brief history of e-learning in health and safety training

LEADERSHIP **NAVIGATION**

1924

PRESSEY TESTING MACHINE
W. M. WELCH
SCIENTIFIC COMPANY
CHICAGO ILL

1970s

Early use of computers for occupational safety

1980s
Video-based training and
corporate safety programs

1990s

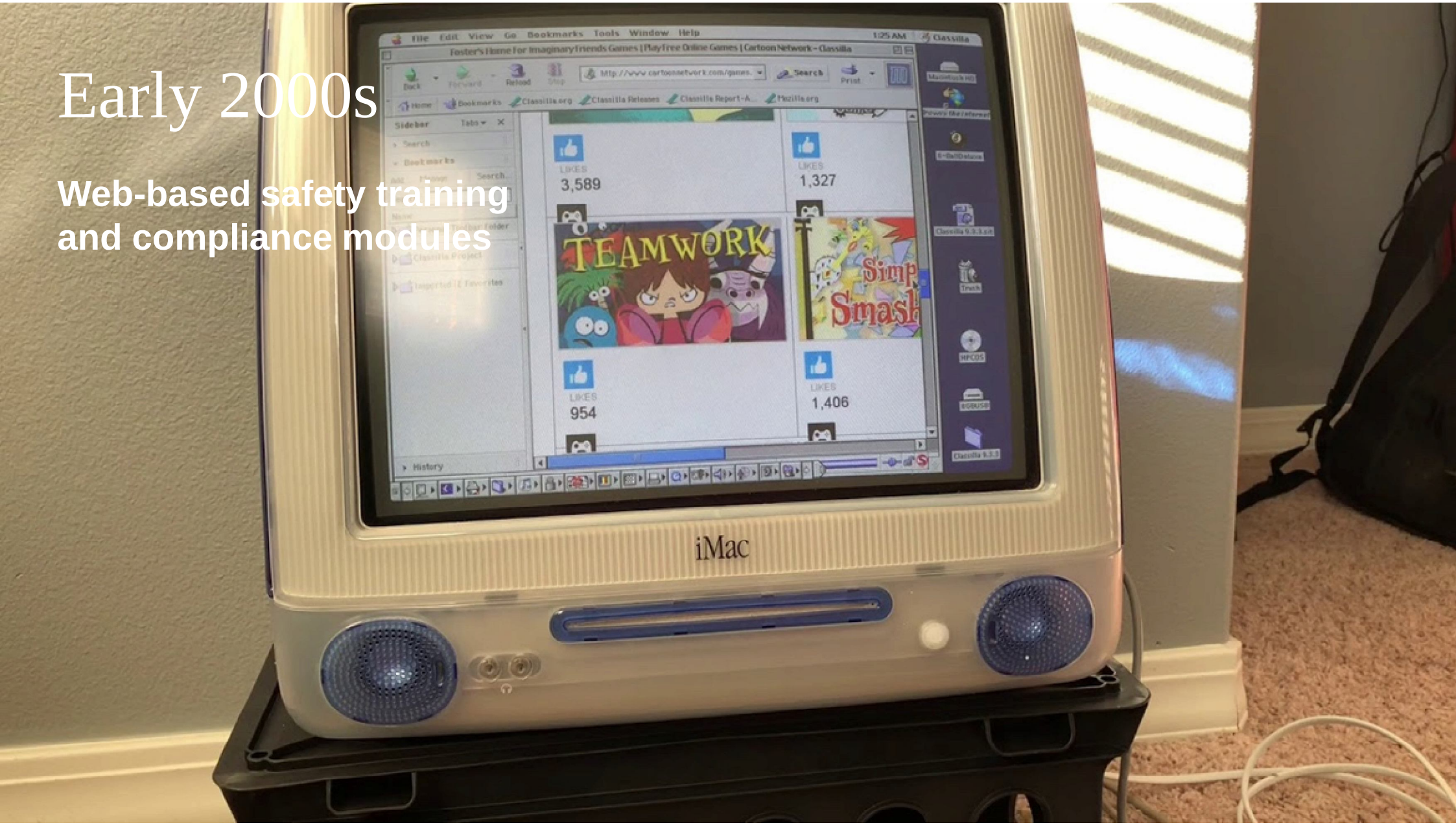
Advent of multimedia
e-learning for safety

Late 1990s

Learning Management Systems (LMS)
and standardised safety courses

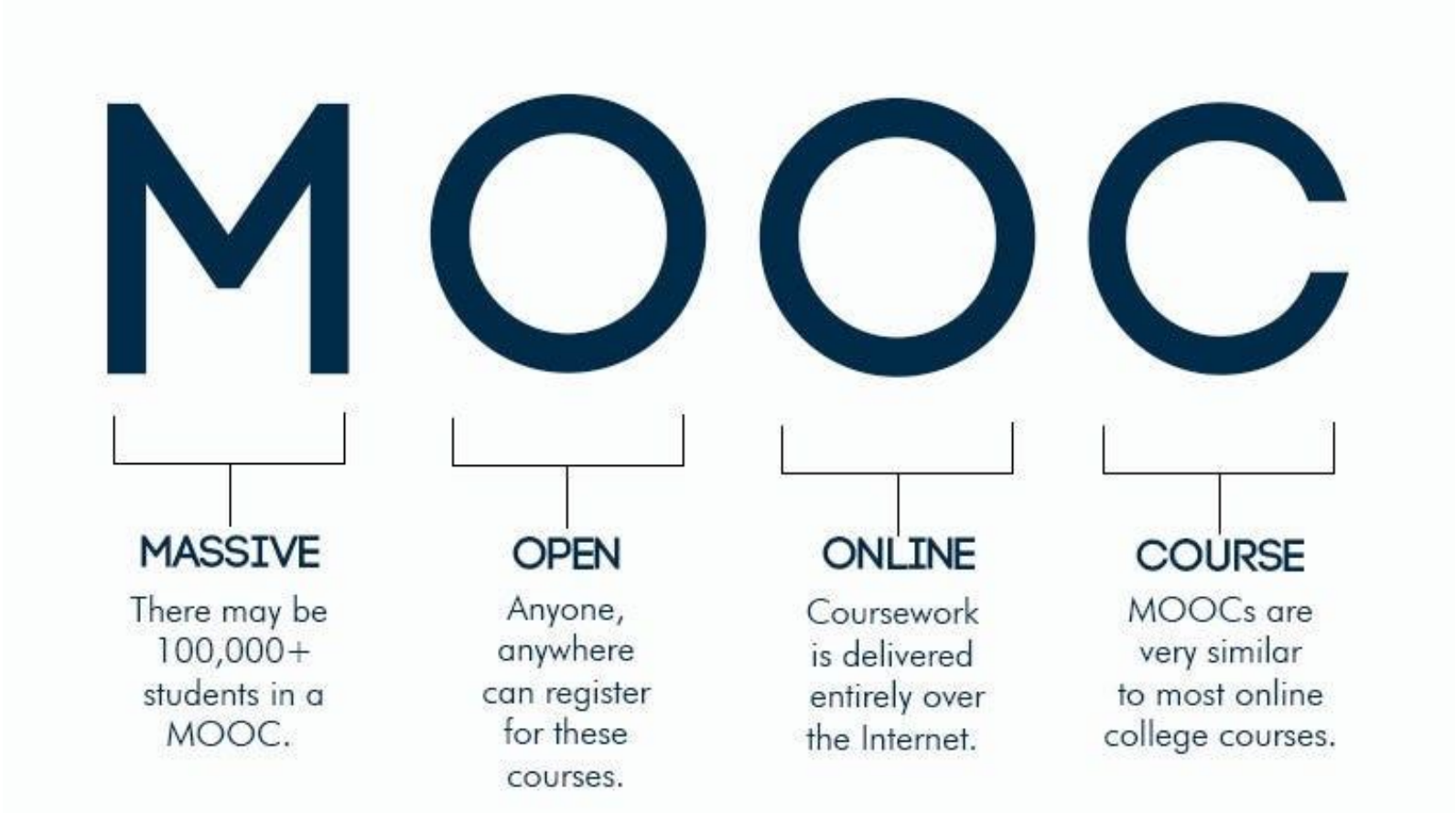
Early 2000s

Web-based safety training and compliance modules



2008

First Massive Open Online Courses (MOOCs)



2010s

Mobile e-learning and on-demand safety training

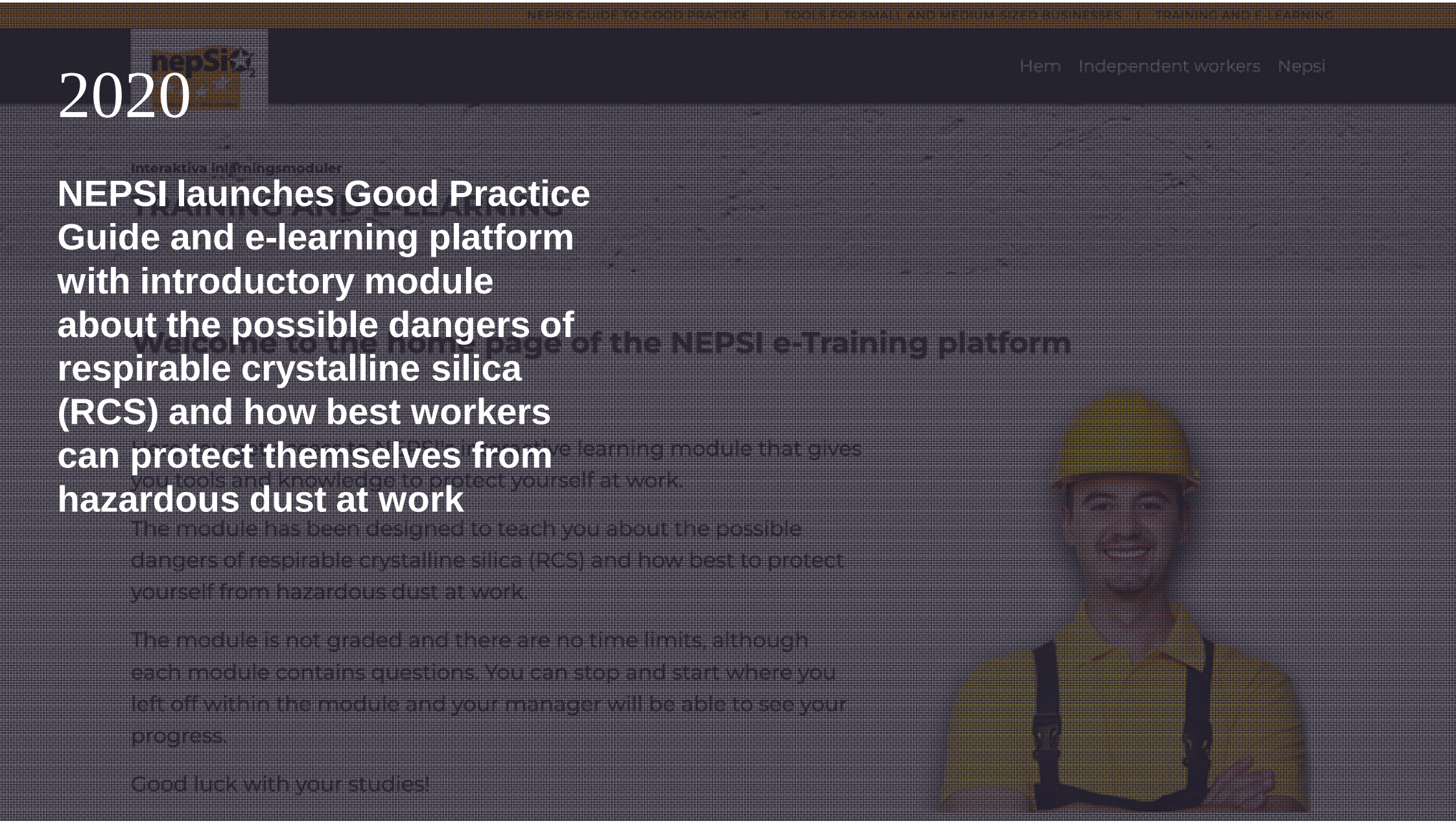
2015
Growths in gamification and Virtual Reality (VR)
Lv 1
Paula
Nearby

2020s

Pandemic accelerates digital health and safety training

2020

NEPSI launches Good Practice Guide and e-learning platform with introductory module about the possible dangers of respirable crystalline silica (RCS) and how best workers can protect themselves from hazardous dust at work



2020 to today

Growth of artificial intelligence, adaptive learning, improvements in gamification and immersive technologies

Evolution of the NEPSI e-learning platform

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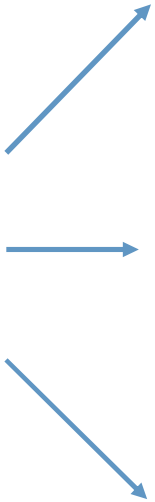
NEPSI e-learning Gen-1

PROJECT GOAL

"Develop a modular, web-based training, or better: ***e-learning, concept*** *that is also* ***appealing to young workers*** *who are exposed to RCS and* ***integrate engaging, participation-oriented features****, with materials that can be used* ***on and offline****."*



Develop **traditional training material** (in the format of PowerPoint training packs, downloadable from the website) and an e-learning program through a web platform.

The training material on RCS and NEPSI good practices should **be focused on new workers' induction** to companies.

Engage young workers through e-learning platform.

E-learning platform and module

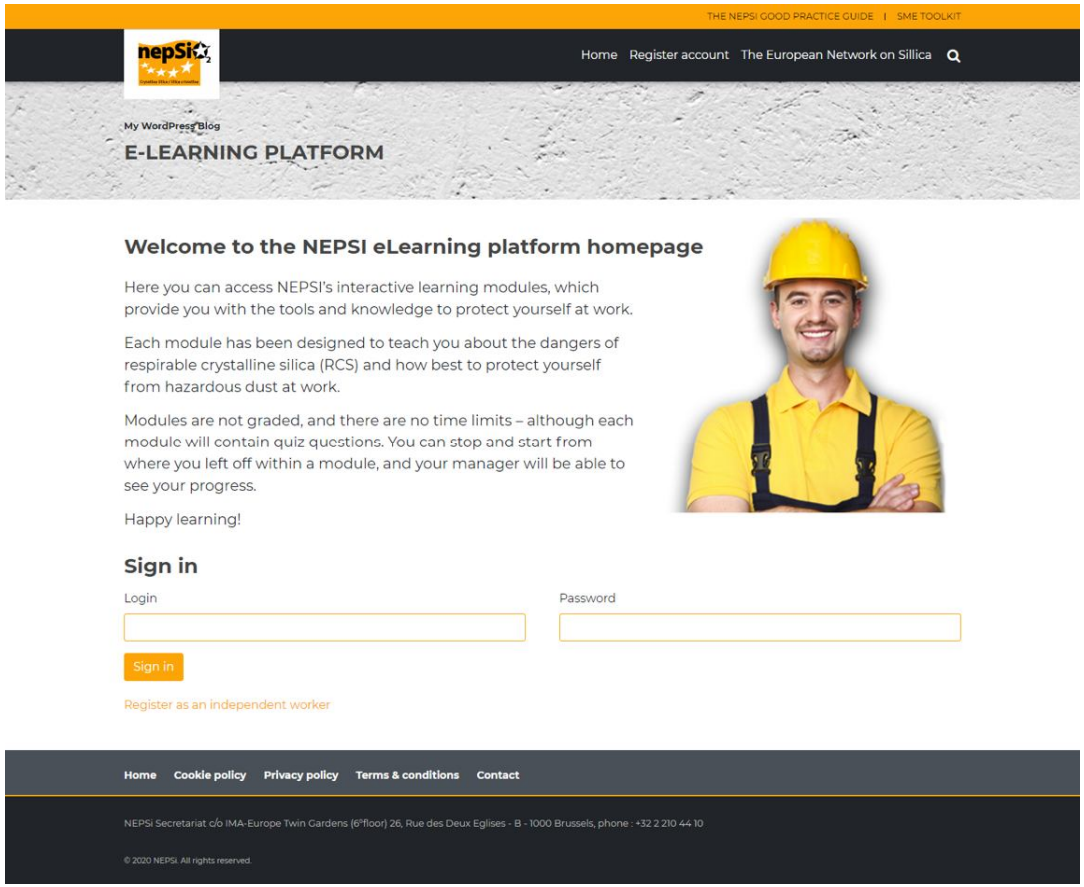
A technical platform to deliver e-learning trainings in the new NEPSI web-app

- With specific user tree allowing easy setup and use at different levels (without requiring email addresses from workers), whilst maintaining data privacy
- With capacity for infinite number of training modules on various topics – tailorable to specific sectors

Interactive training module *"Introduction to Crystalline Silica Good Practices"* for new workers / refresher training (mobile and desktop friendly)

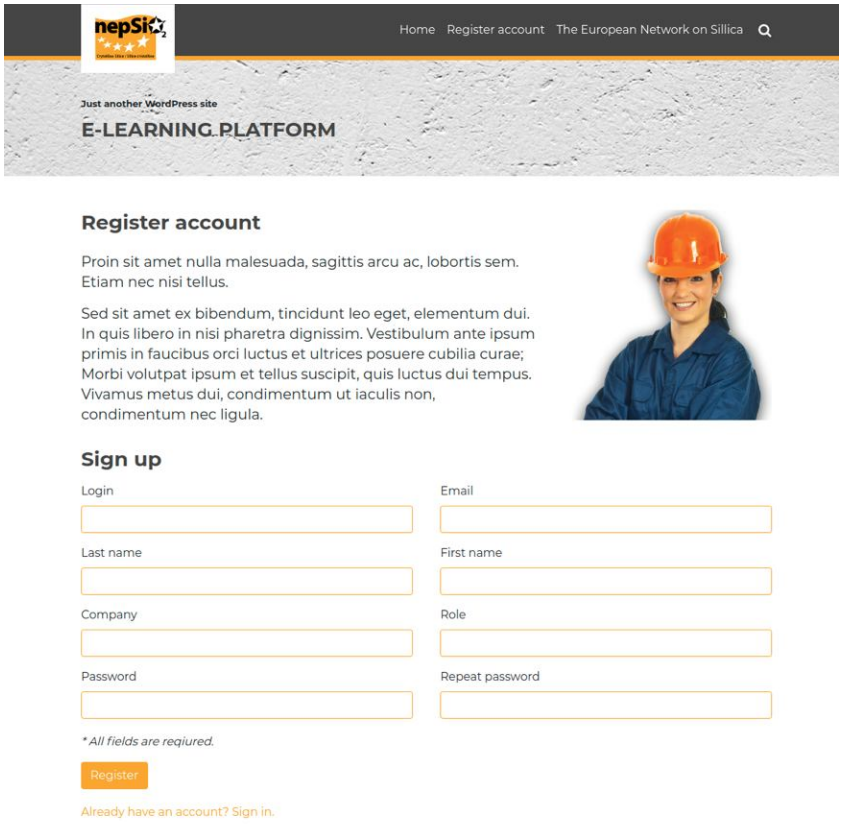
- Initial module to launch the platform
- PowerPoint module support tools

Landing page for workers

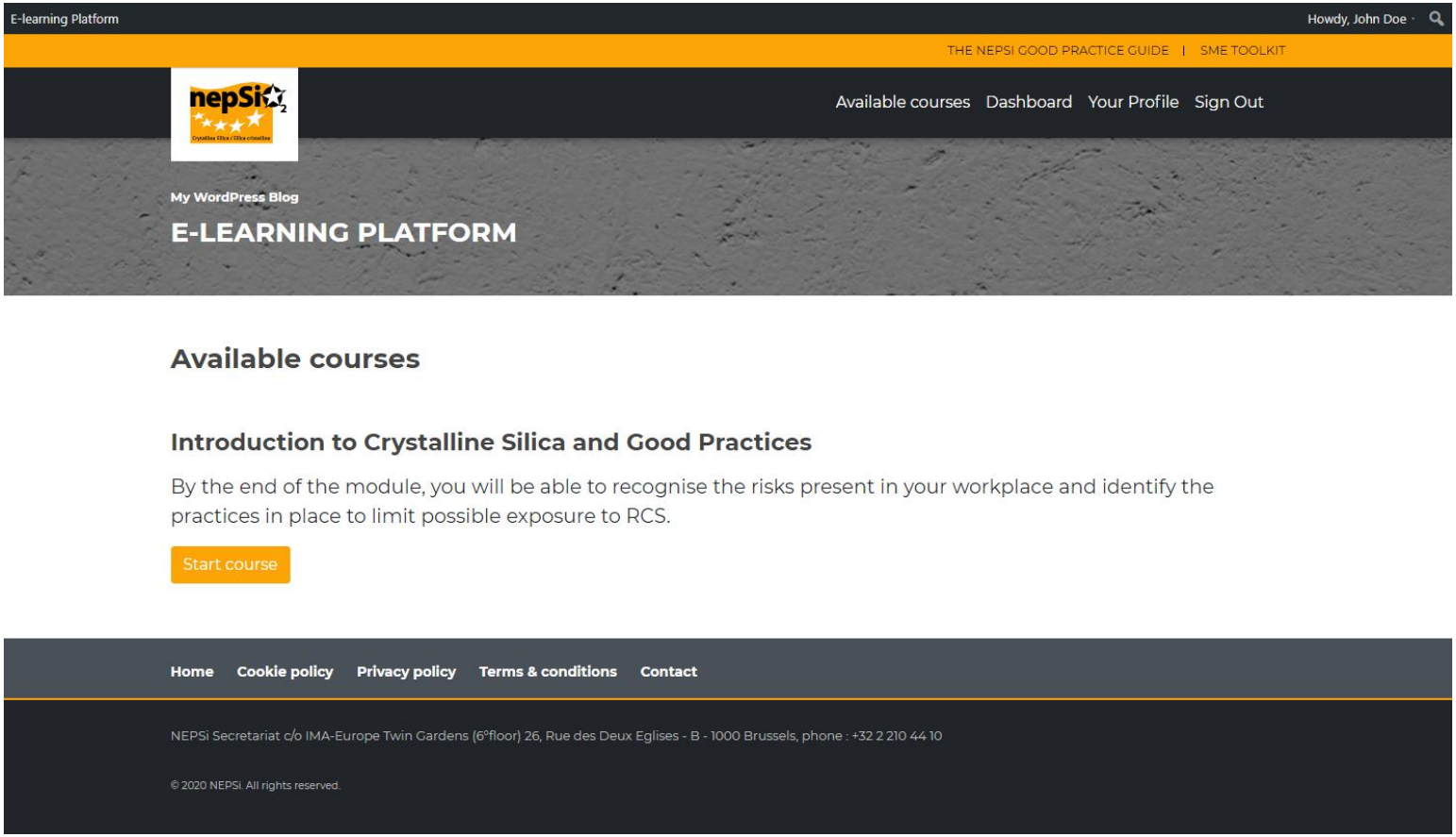


Registration for independent workers

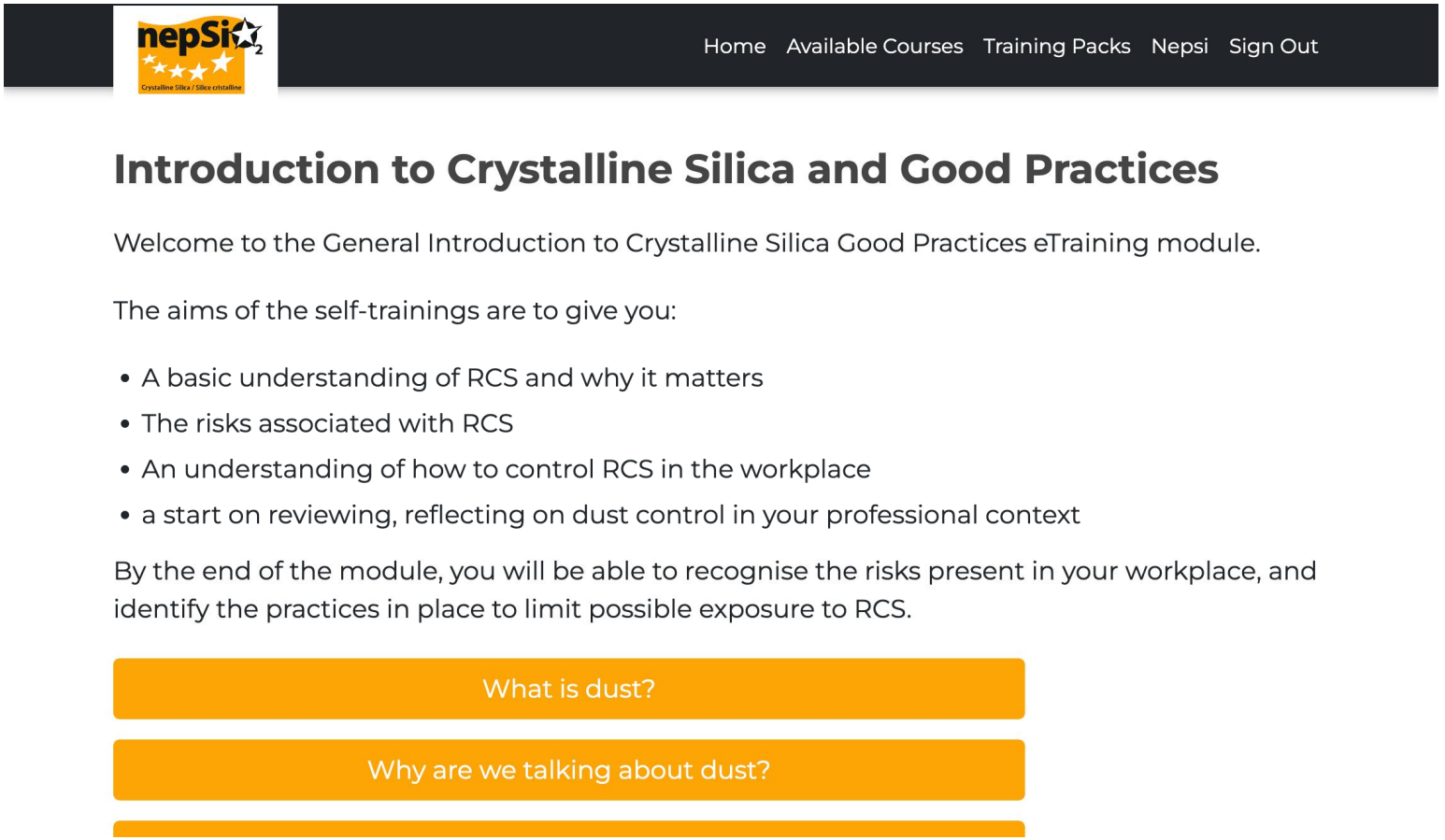
To sign up and pick their own modules of interest



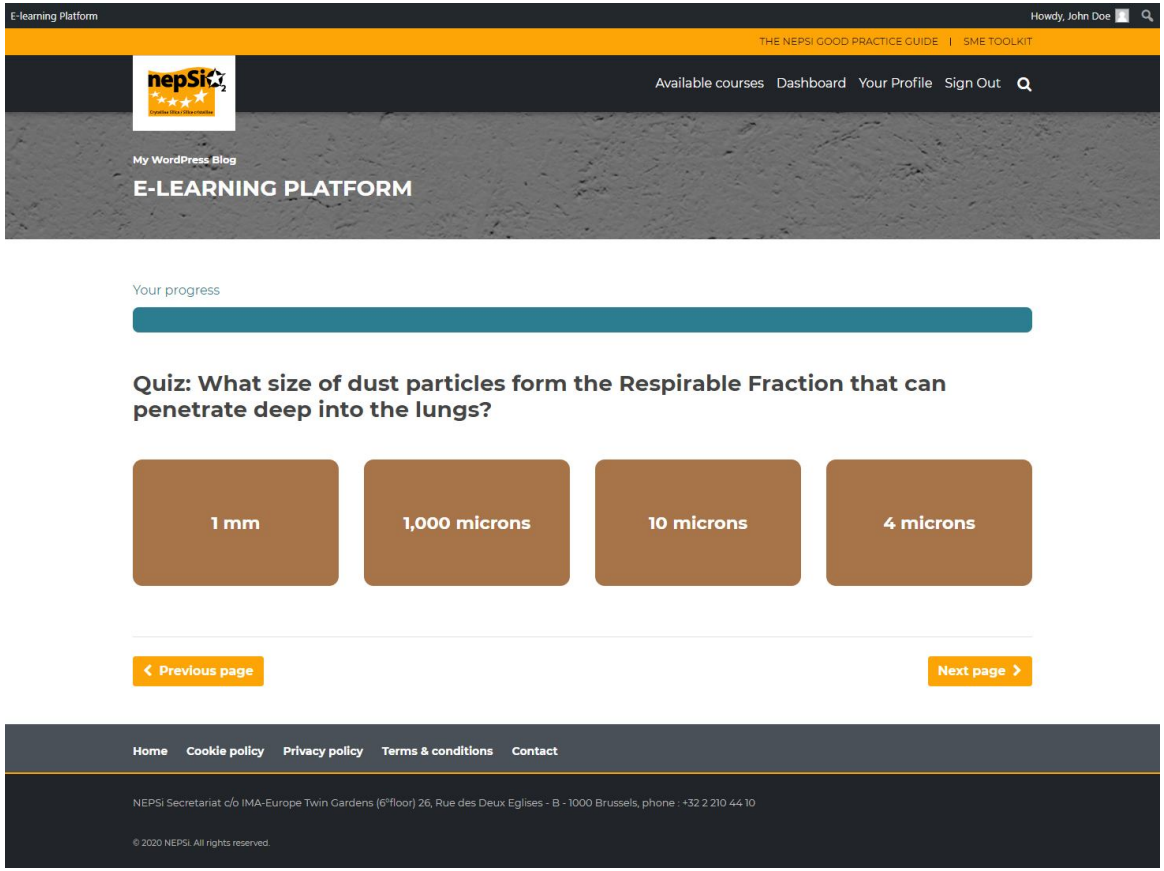
Modules landing page



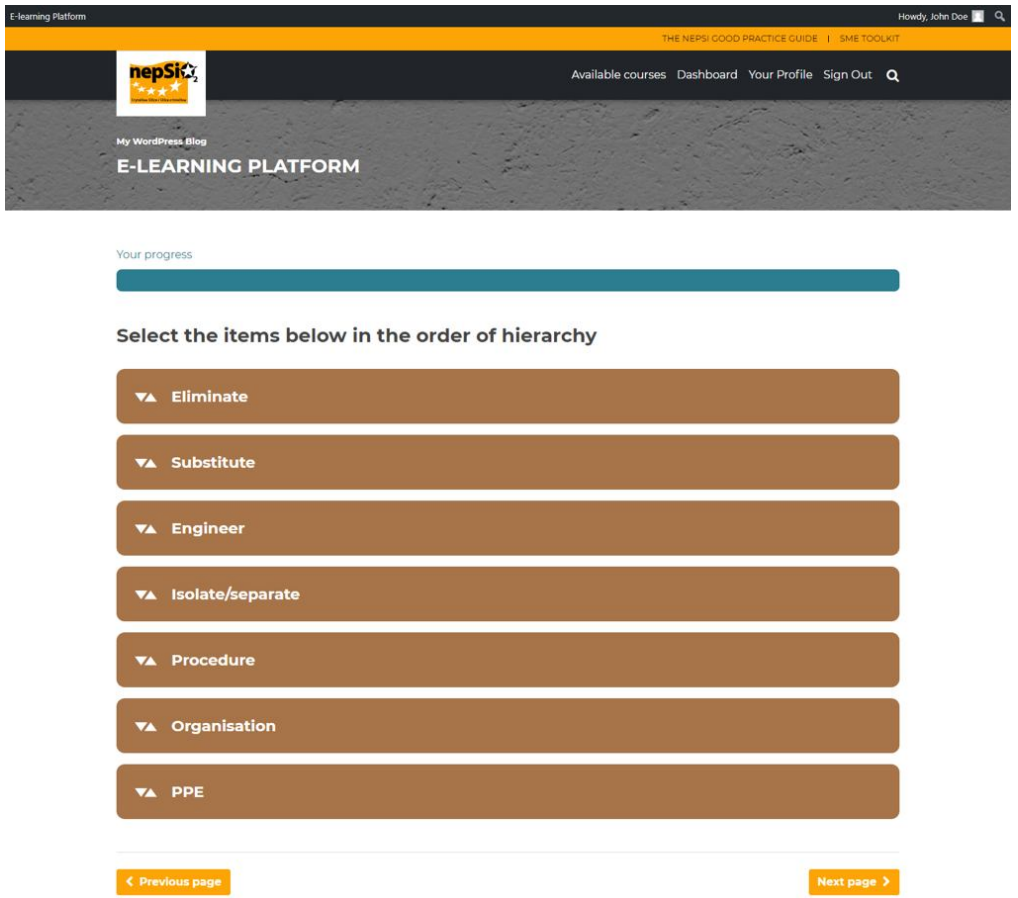
Module 1 introduction



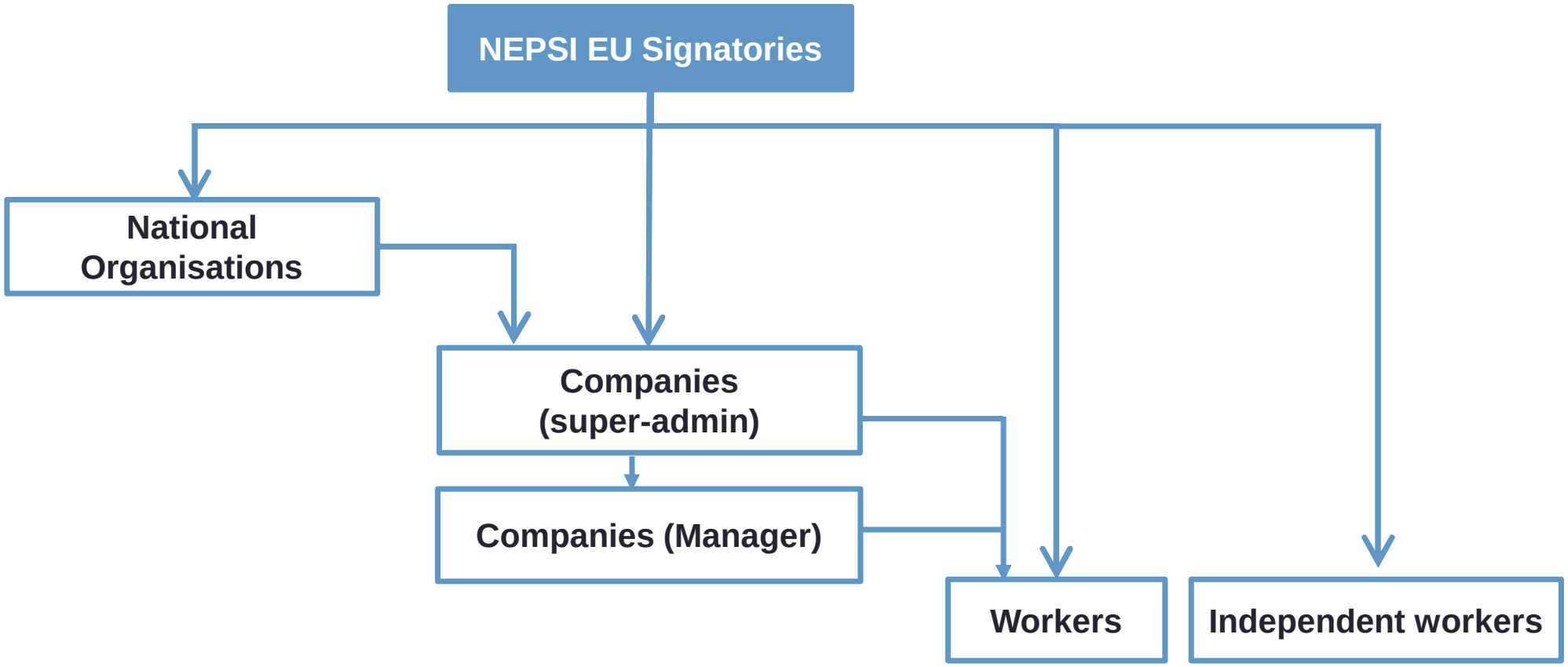
Answer type 2 – Multiple choice several options



Answer type 3 – Drag and drop to re-order list



E-Learning – User setup structure

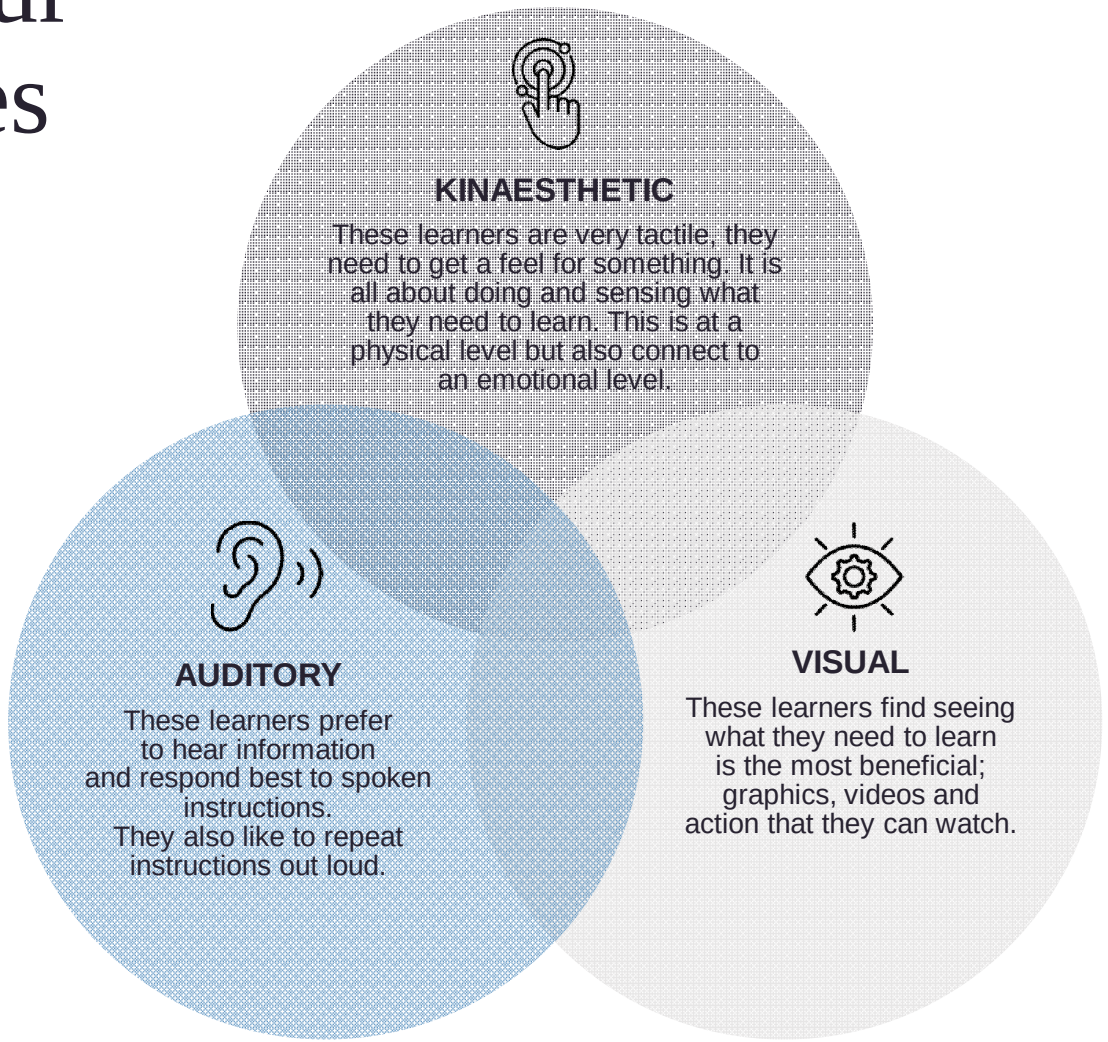


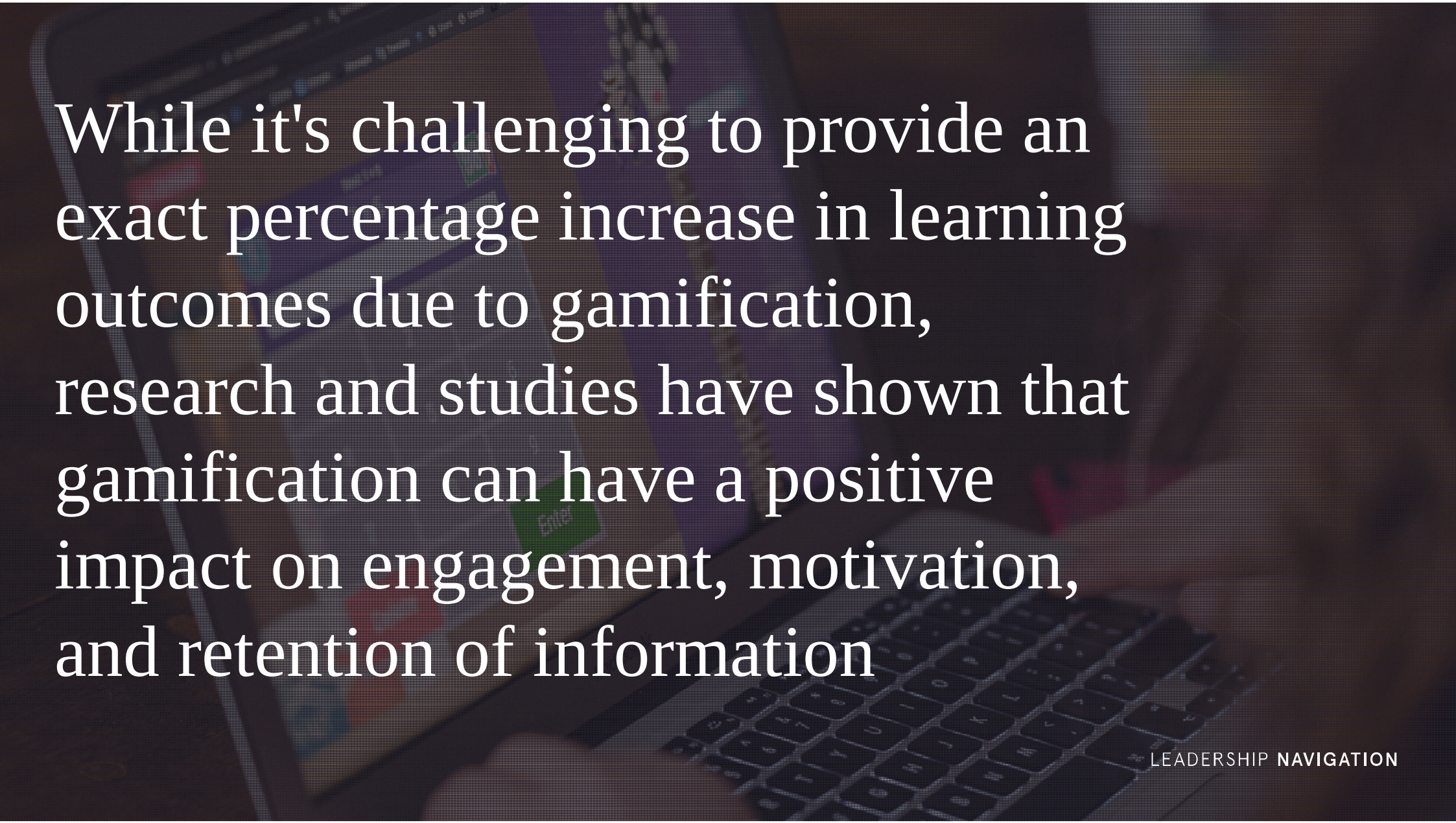
Key learnings

- Open access increases training uptake
- New modules needed
- Concerns from both workers and employers need to be taken into account
- Technology advancements and growth of gamified learning

We know our learner types

Effective learning for everyone




While it's challenging to provide an exact percentage increase in learning outcomes due to gamification, research and studies have shown that gamification can have a positive impact on engagement, motivation, and retention of information
LEADERSHIP NAVIGATION

Microlearning

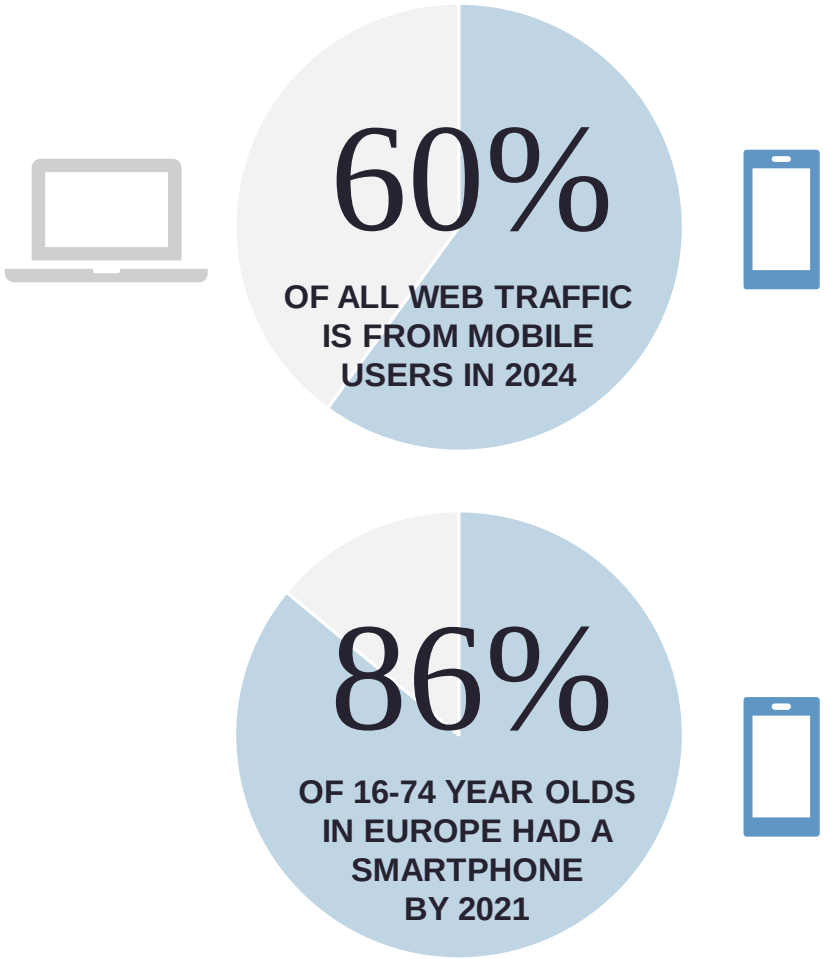
Short, focused learning modules that can be consumed in bite-sized chunks make it easier to fit training into our busy schedules

- The average adult's attention span typically ranges from 10 to 20 minutes before starting to decline.
- 20 minute modules can be completed in breaks, work time, transport home, at home.

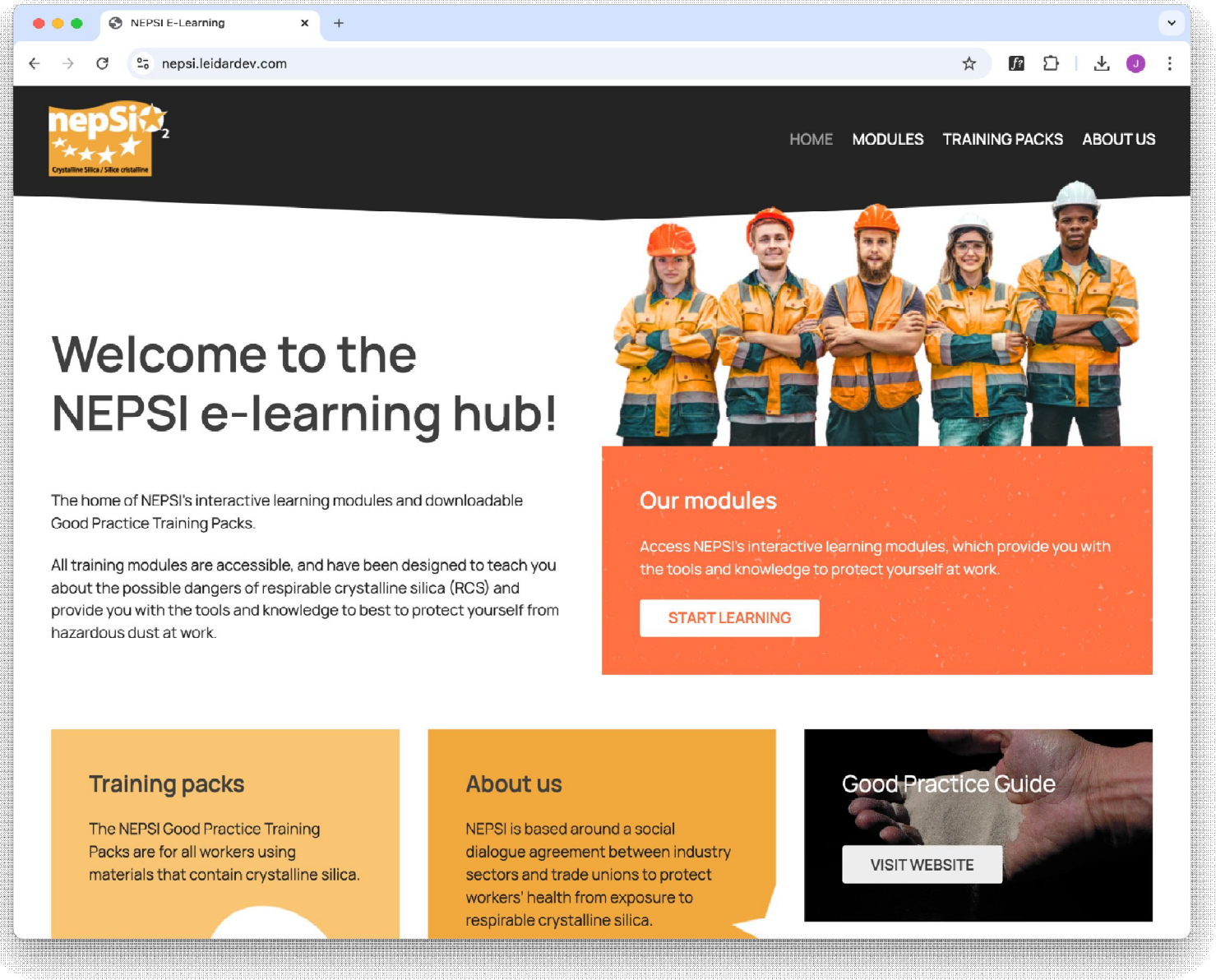
NEPSI e-learning Gen-2

Develop custom web platform that:

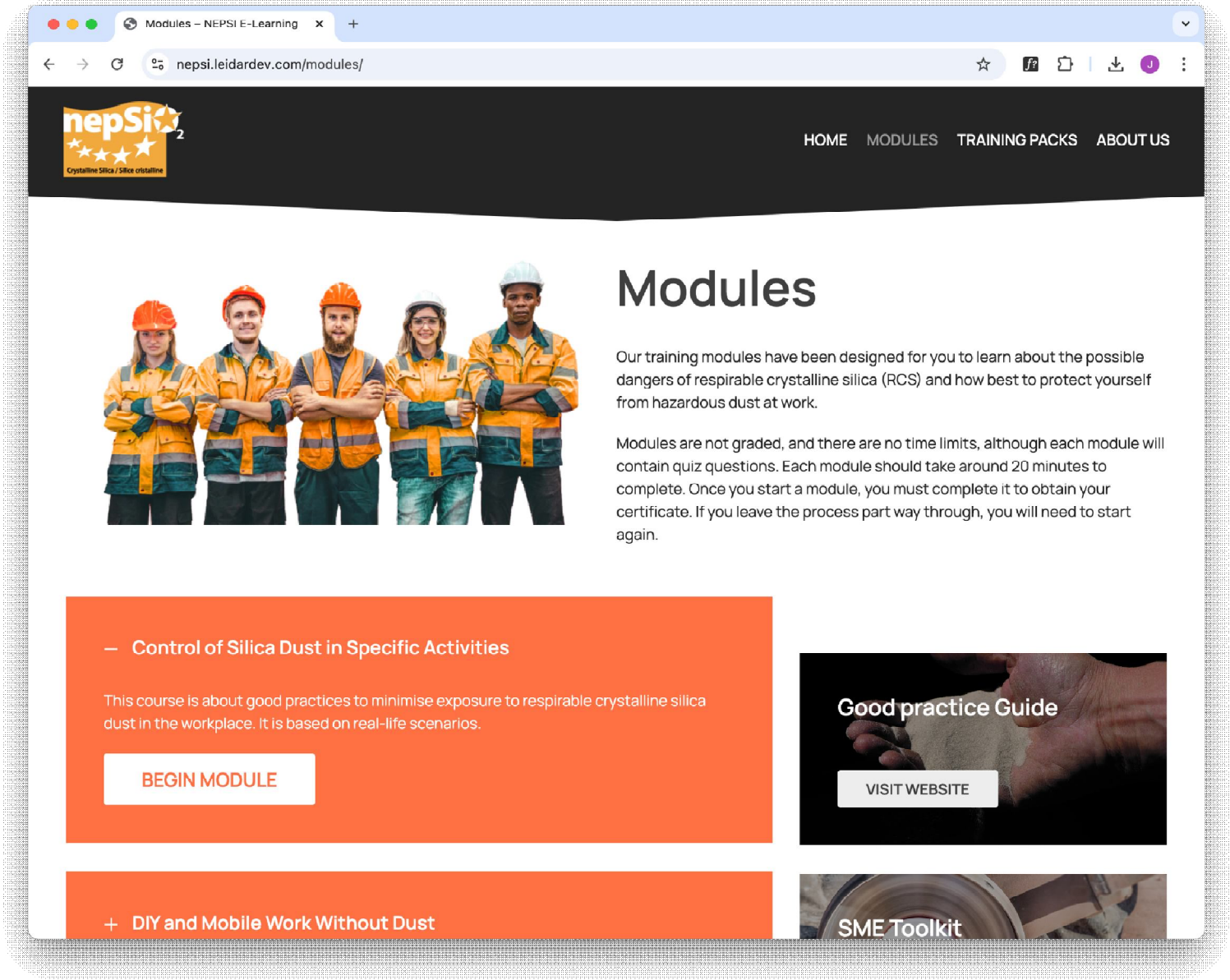
- Is mobile first and responsive
- Has a simplified user access structure
- Includes built-in interactive functionality that can be used to create gamified learning content in future modules
- Has a clean modern design, in line with NEPSI Good Practice Guide platform and harnesses accessibility best practices
- Leverages bite size modules
- Develop modules 2-4 and implement to platform, utilizing new functionality



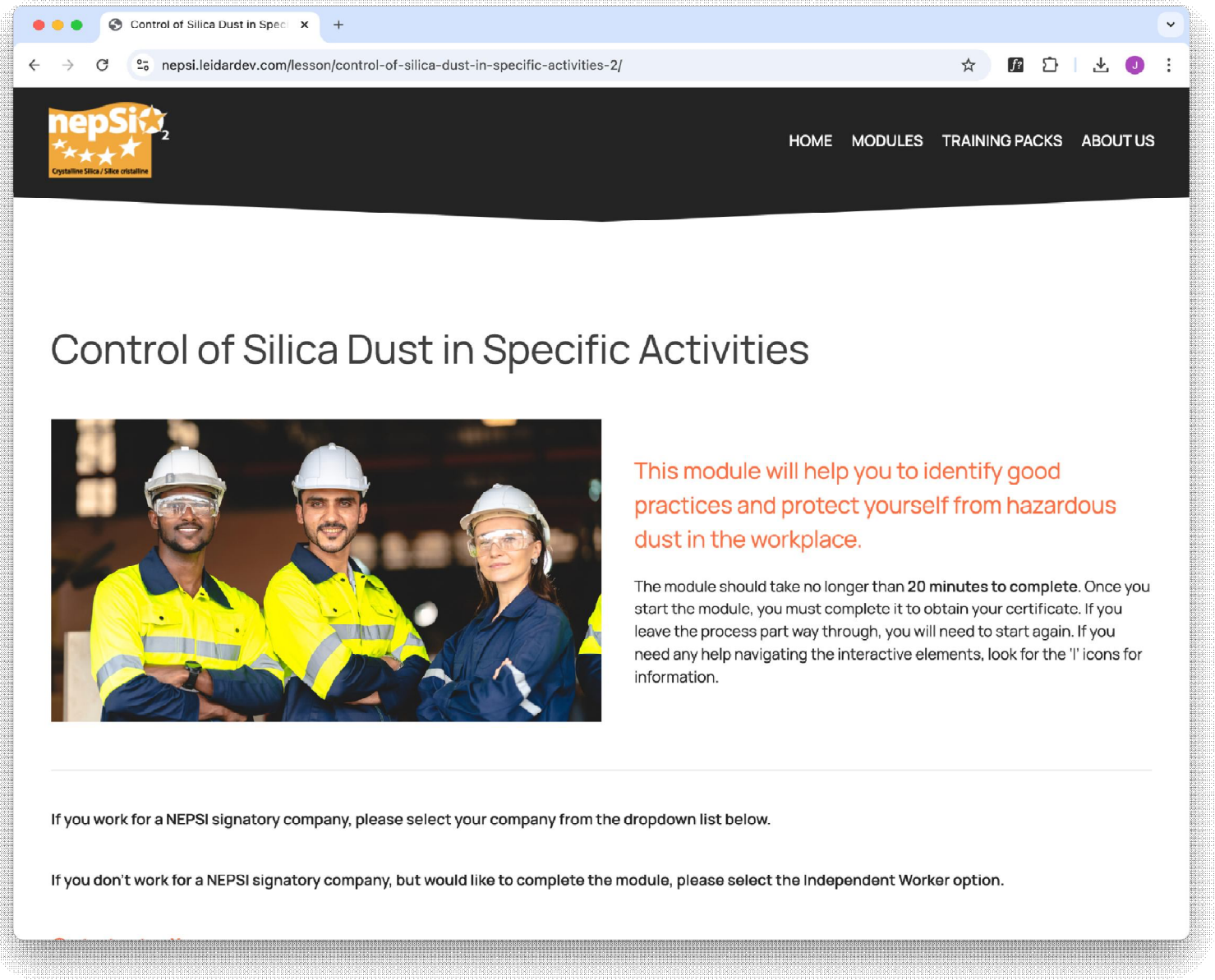
NEPSI e-learning Gen-2 platform landing



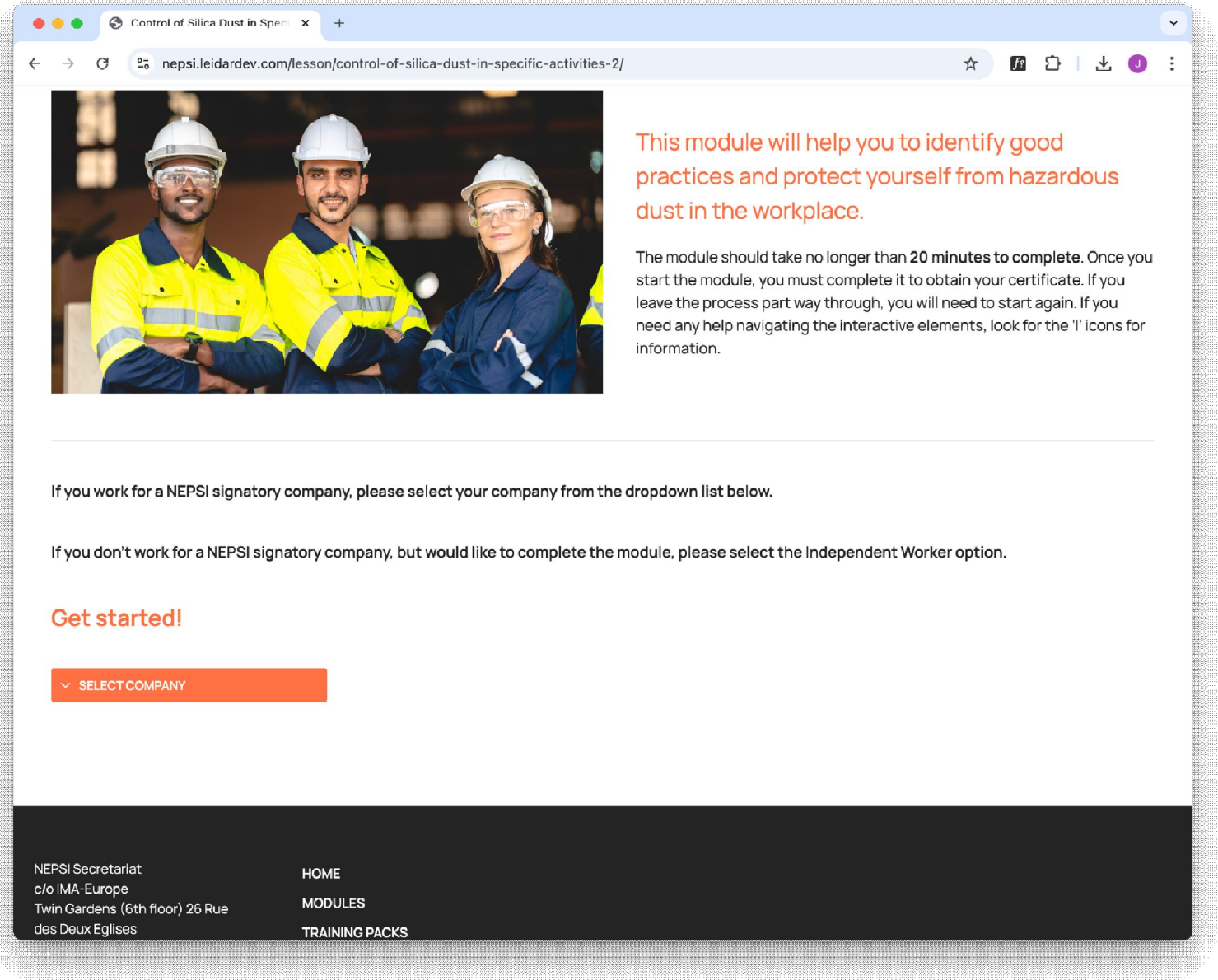
NEPSI e-learning Gen-2 platform modules



NEPSI e-learning Gen-2 platform module introduction

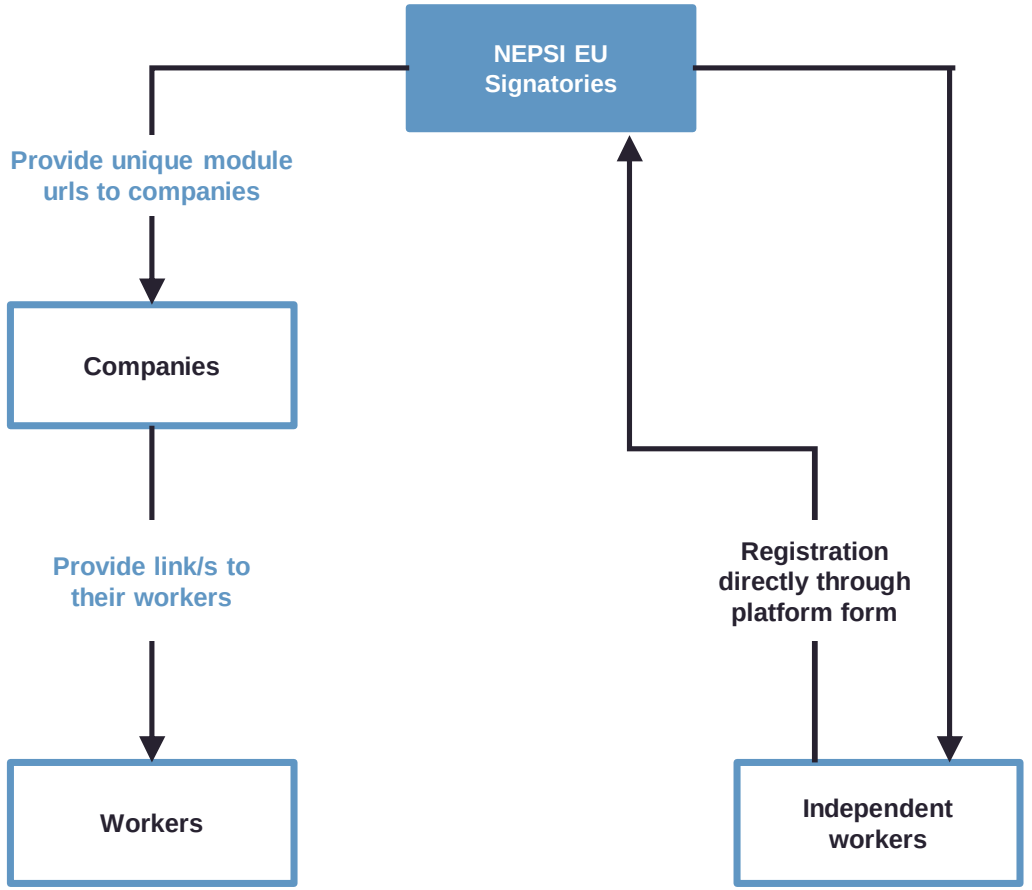


NEPSI e-learning Gen-2 platform getting started

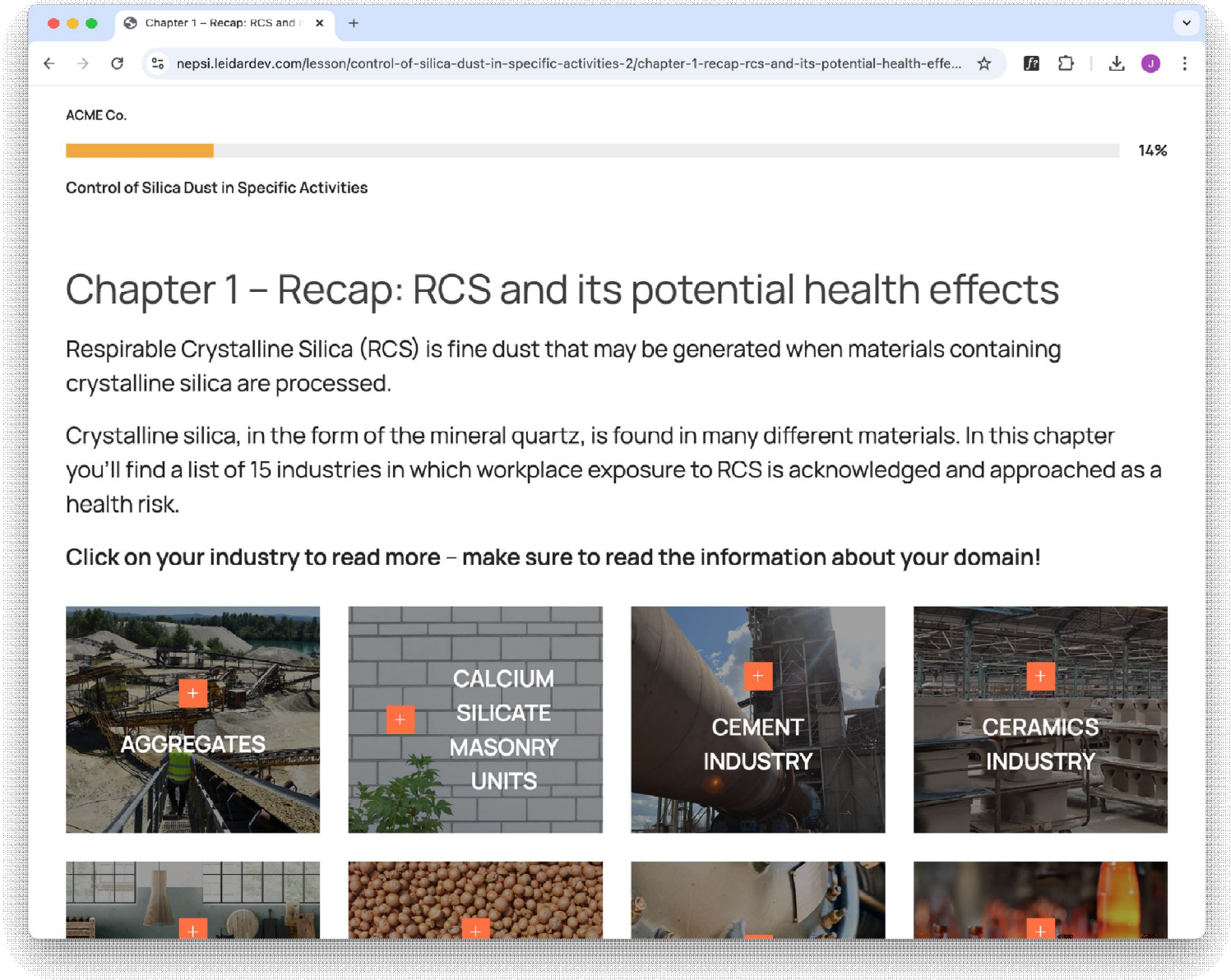


Simplified user structure

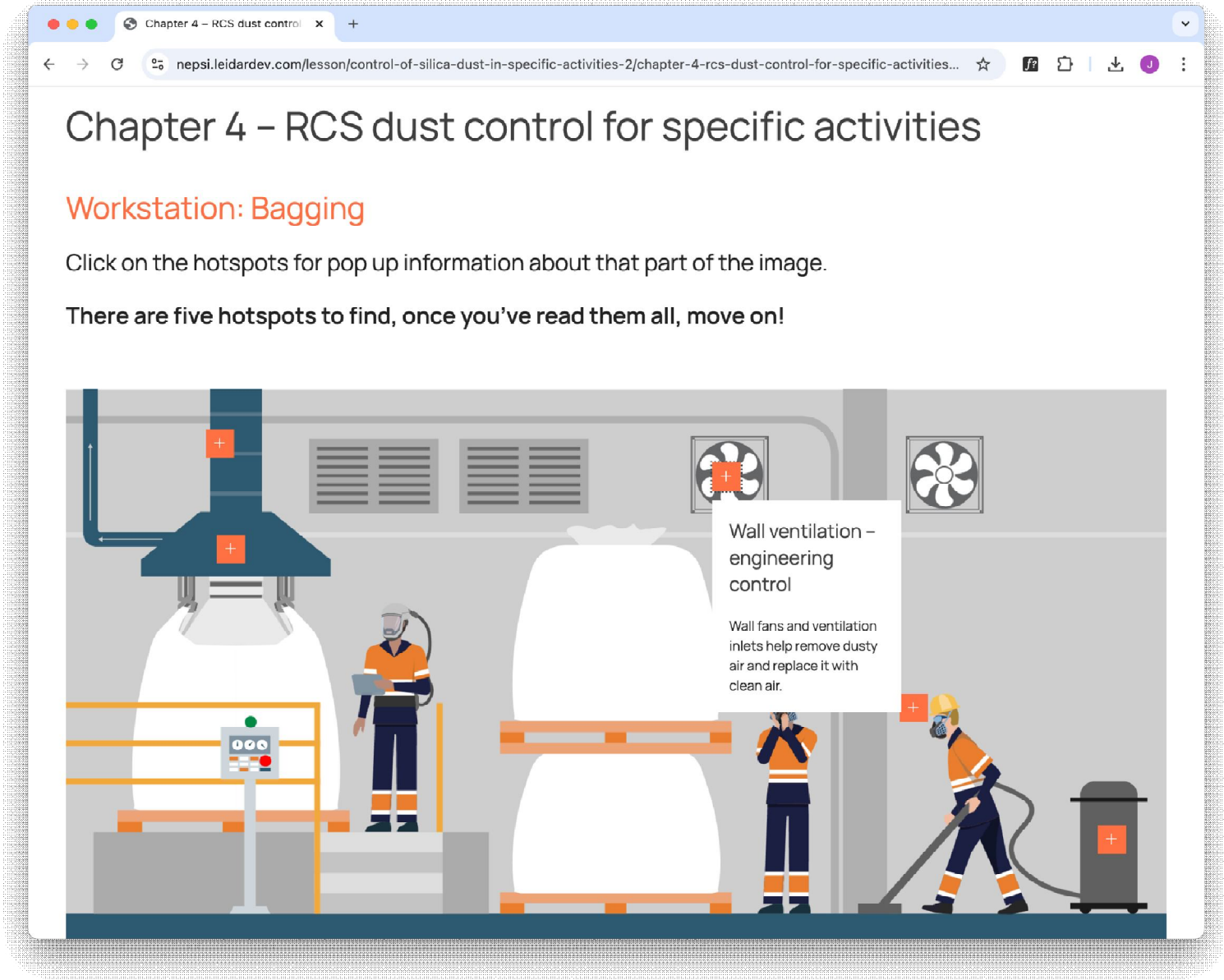
- No company worker registration required
- Easy worker company selection, from drop down and enters name and email at end of process to download or email certificate
- Company-specific links direct to modules
- Open access for independent workers



Gamified content – flip cards



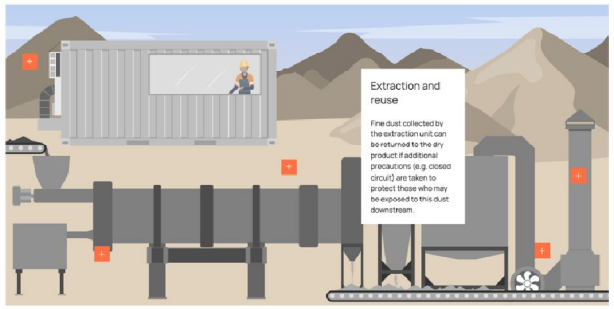
Gamified content – interactive workstations with pop up hotspots



Workstation: Drying

Click on the hotspots for pop up information about that part of the image.

There are six hotspots to find, once you've read them all, move on!

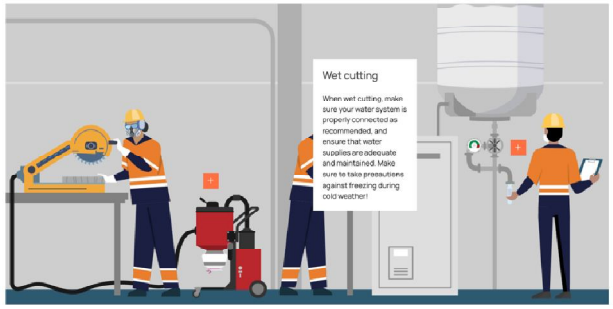


ⓘ If you click or tap on the indicated hotspots on the image, more information will appear in a pop up box.

Workstation: Cutting materials

Click on the hotspots for pop up information about that part of the image.

There are three hotspots to find, once you've read them all, move on!



ⓘ If you click or tap on the indicated hotspots on the image, more information will appear in a pop up box.

Workstation: Maintenance

Click on the hotspots for pop up information about that part of the image.

There are four hotspots to find, once you've read them all, move on!

ⓘ If you click or tap on the indicated hotspots on the image, more information will appear in a pop up box.

Workstation: Emptying bags

Click on the hotspots for pop up information about that part of the image.

There are four hotspots to find, once you've read them all, move on!

ⓘ If you click or tap on the indicated hotspots on the image, more information will appear in a pop up box.

Workstation: Mixing

Click on the hotspots for pop up information about that part of the image.

There are three hotspots to find, once you've read them all, move on!

ⓘ If you click or tap on the indicated hotspots on the image, more information will appear in a pop up box.

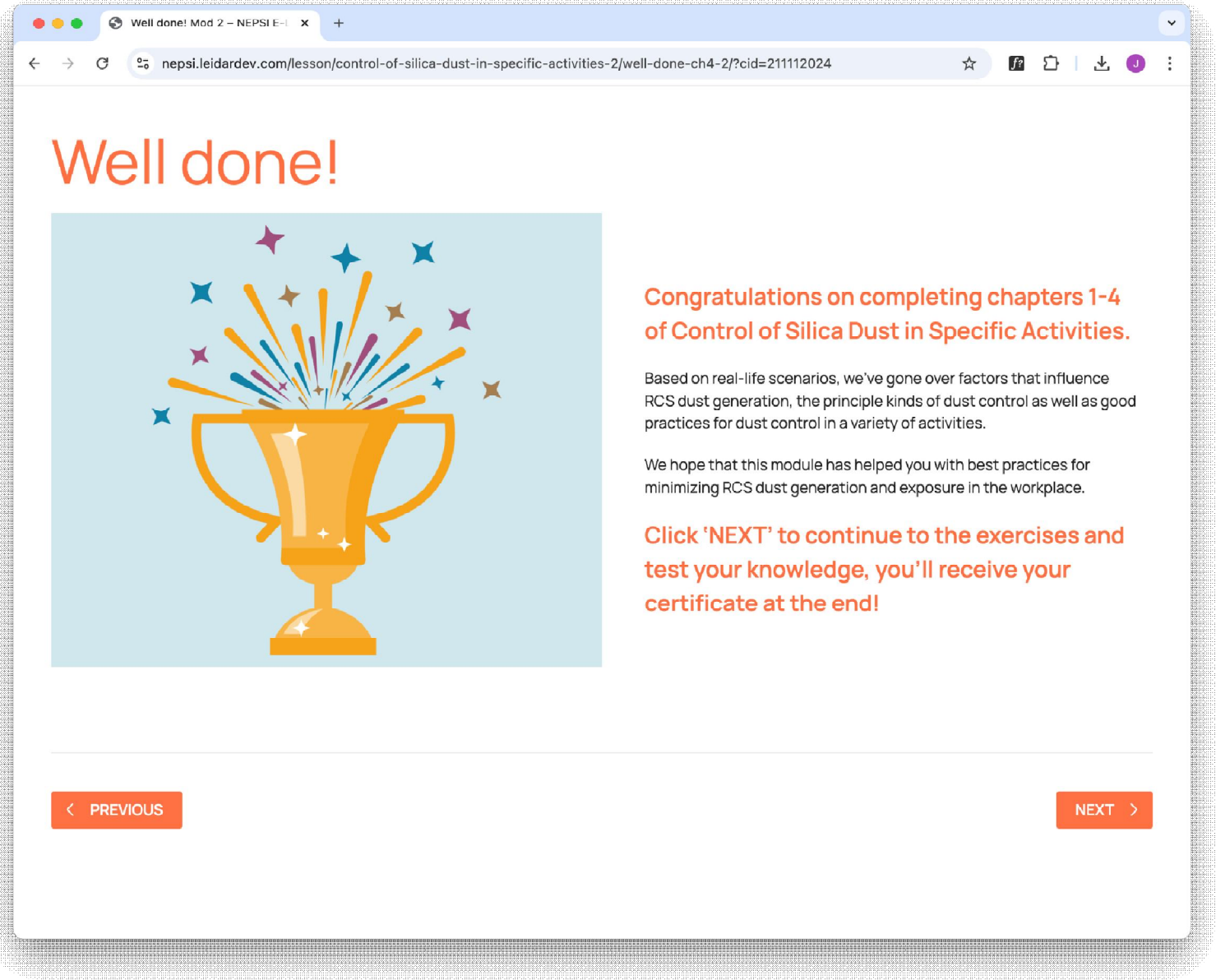
Workstation: Maintenance

Click on the hotspots for pop up information about that part of the image.

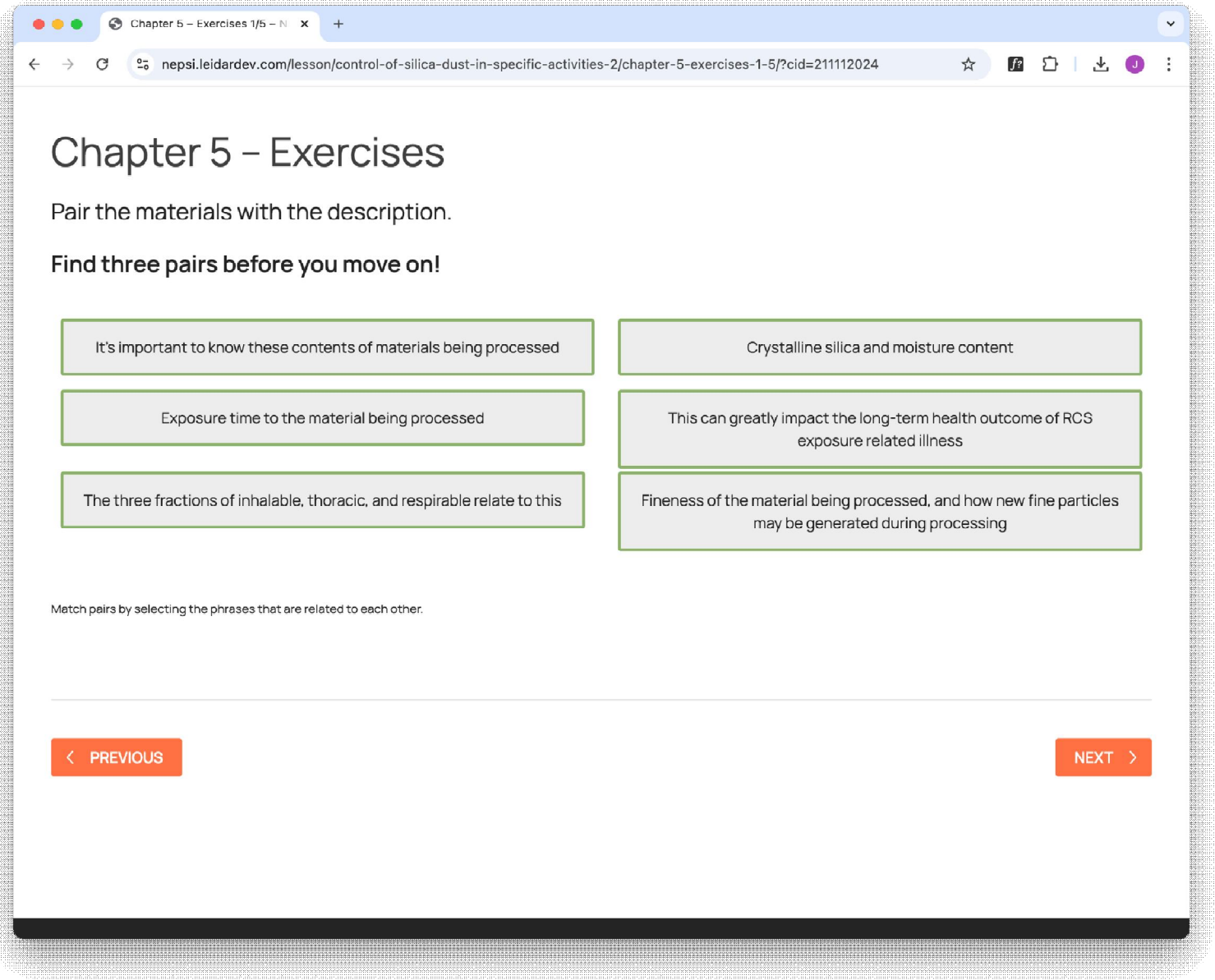
There are four hotspots to find, once you've read them all, move on!

ⓘ If you click or tap on the indicated hotspots on the image, more information will appear in a pop up box.

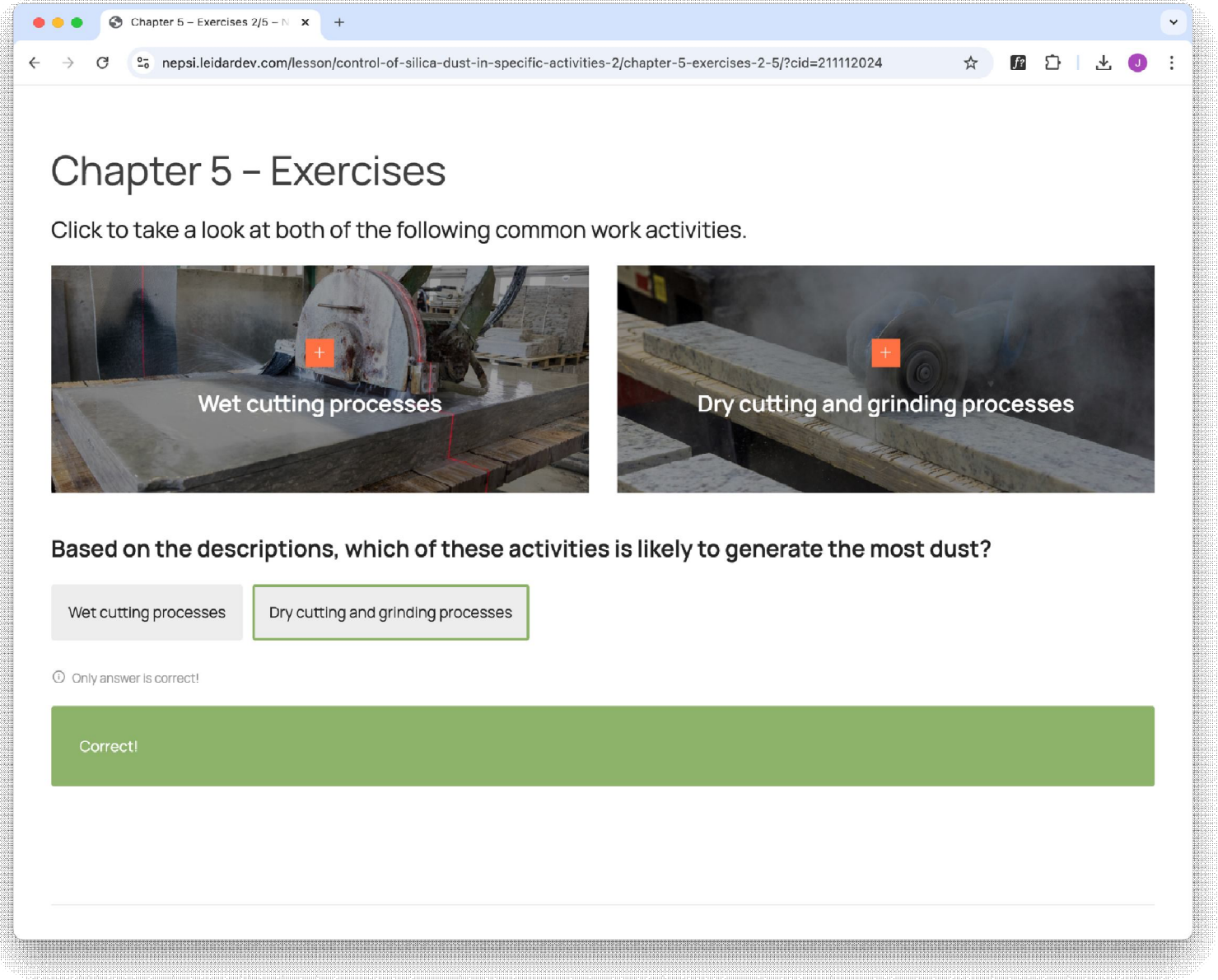
Celebrating achievement



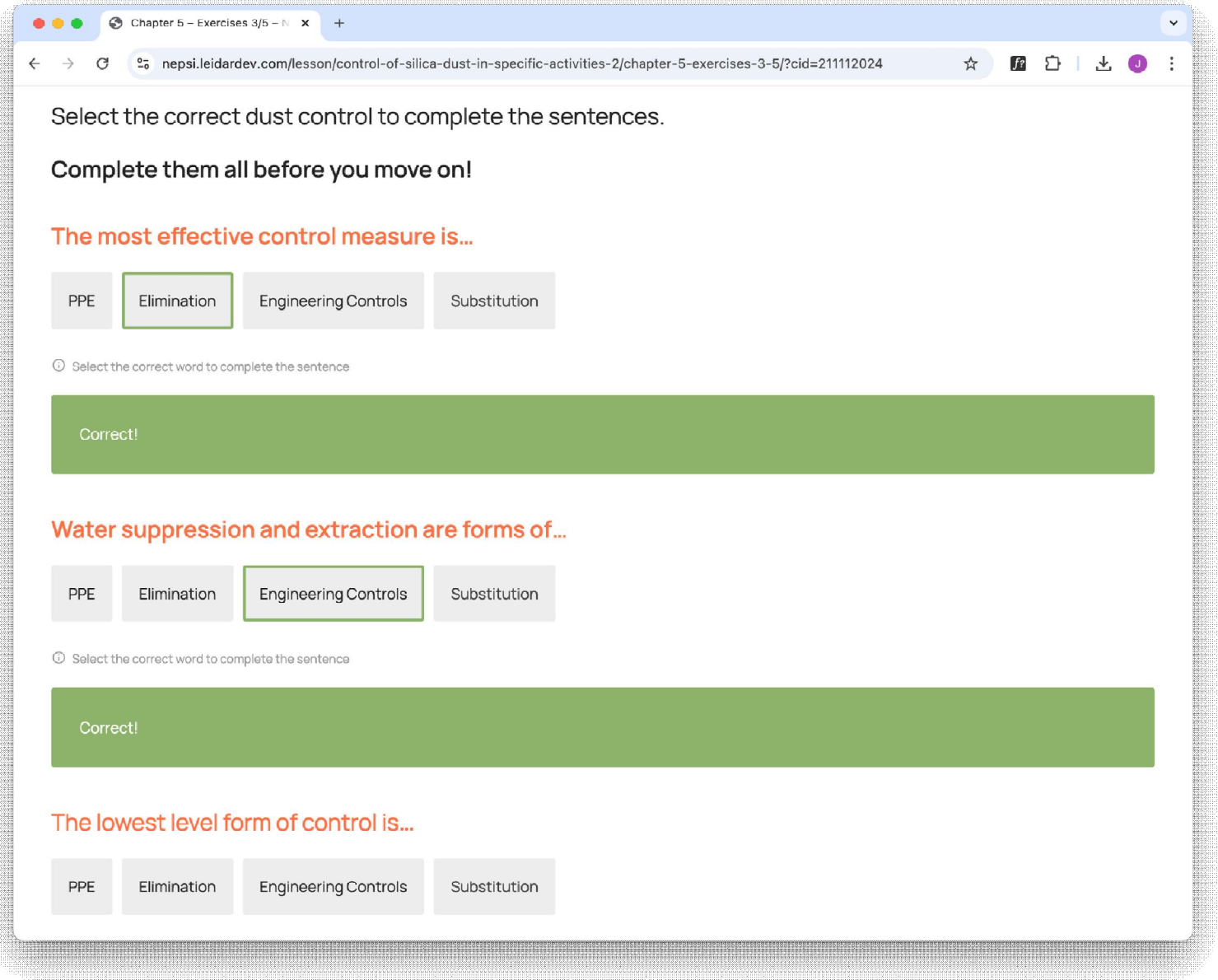
Fun exercises to test knowledge - match pairs



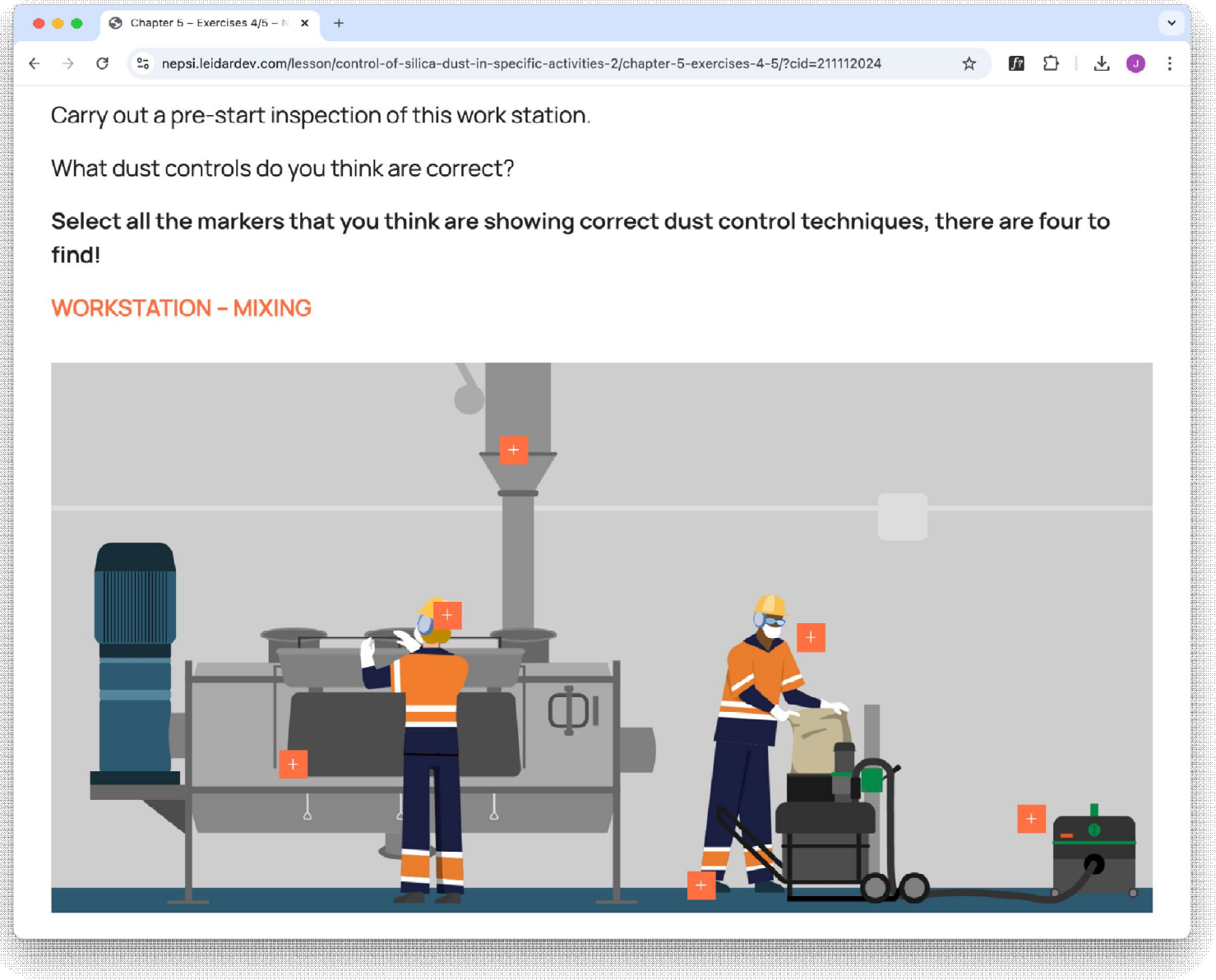
Fun exercises - combined interactivity with flip cards and answer identification



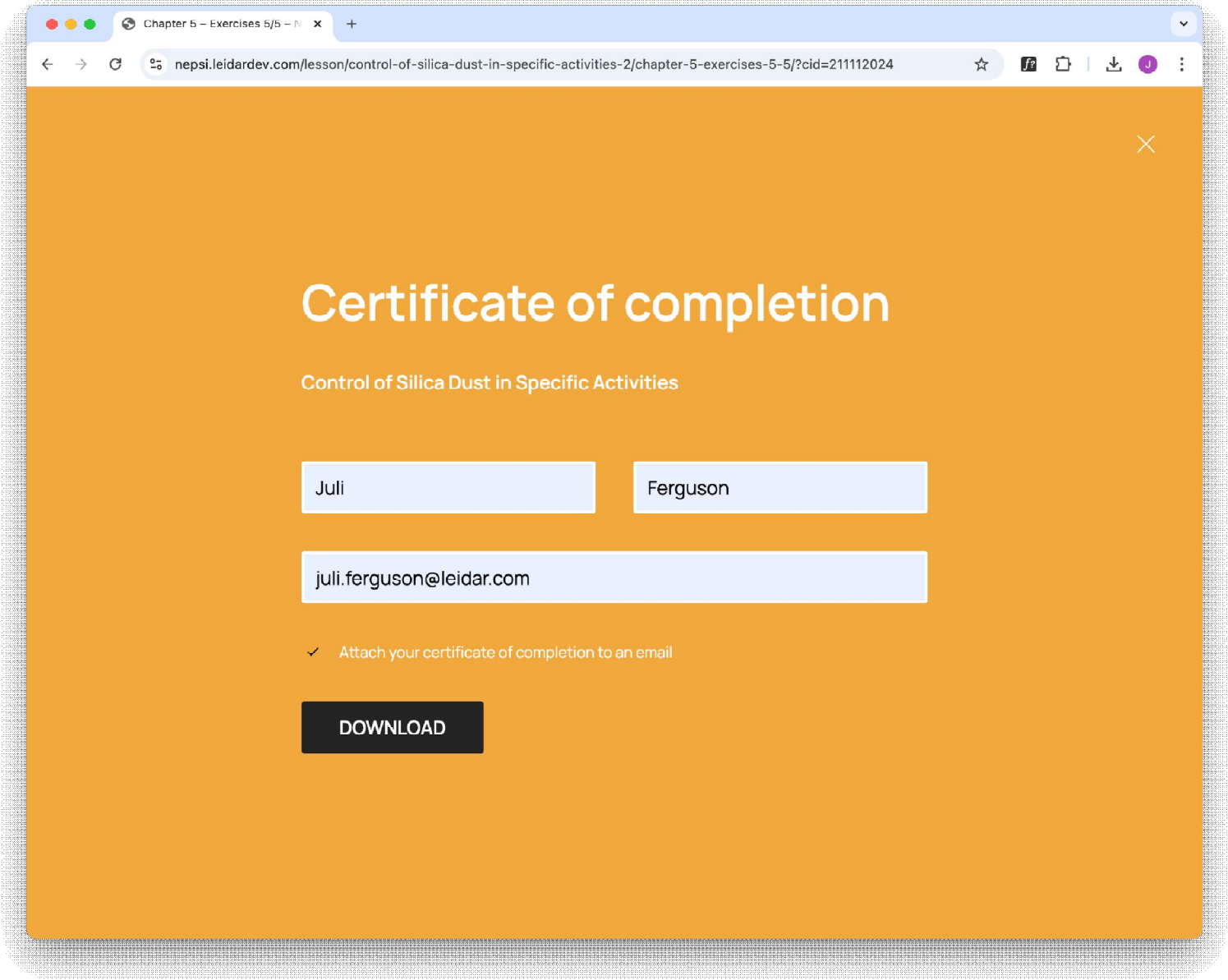
Fun exercises - complete the sentences



Fun exercises - image spot identification



Enter your name for your certificate, and an email address to send it to



What’s next for e-learning?

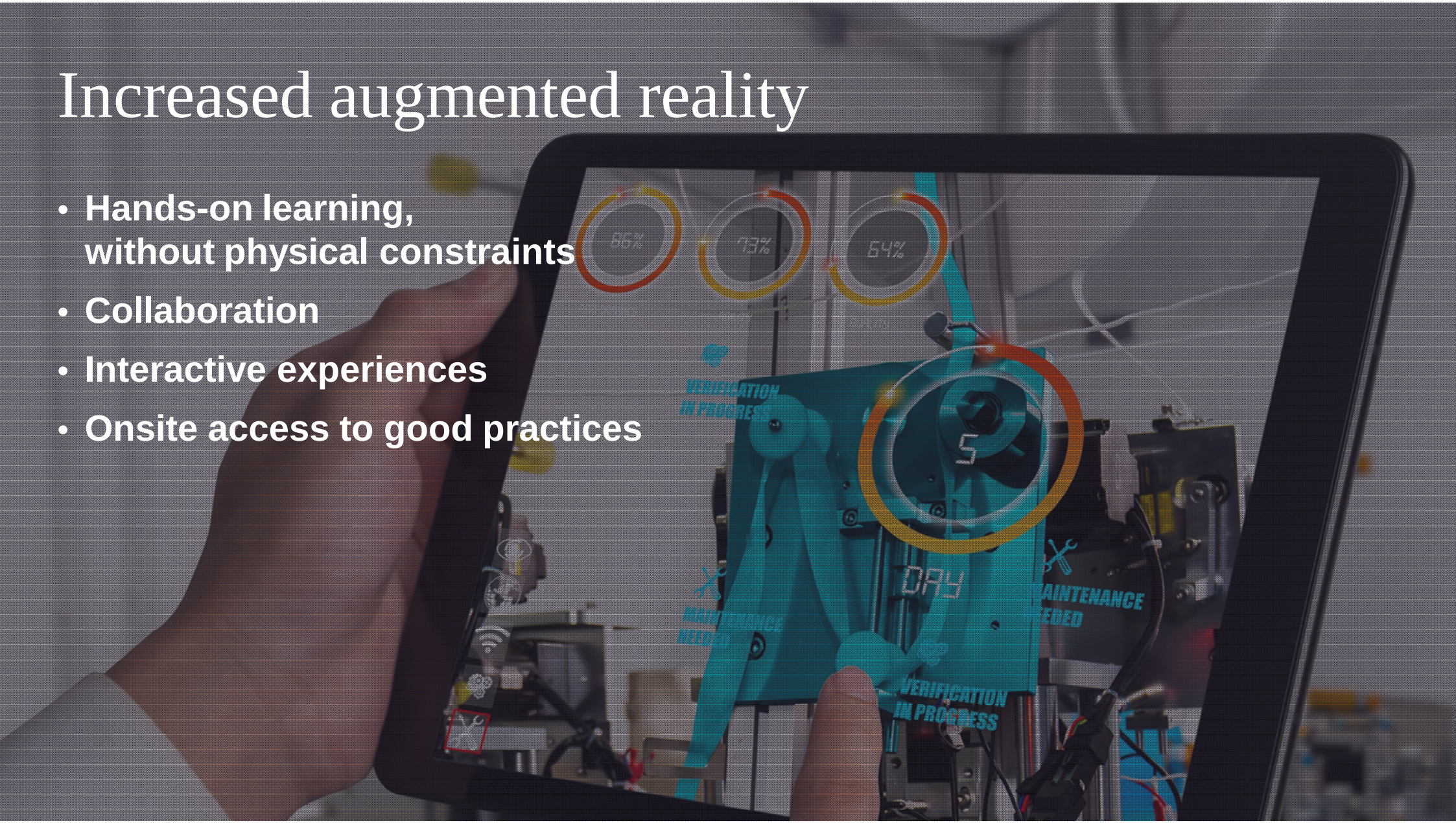
LEADERSHIP **NAVIGATION**

Smarter AI

- **Adaptive learning**
- **Advanced analytics**
- **Real-time assistance**
- **Content creation**
- **Language translation and accessibility**

Increased augmented reality

- **Hands-on learning, without physical constraints**
- **Collaboration**
- **Interactive experiences**
- **Onsite access to good practices**



Fully immersive virtual reality

- **Enhanced simulation accuracy in immersive environments for practical learning and safe experimentation**
- **Data analytics for personalised training experiences**
- **Remote and globalised safety training**
- **Better accessibility and affordability of VR hardware**
- **Integration with Augmented Reality for on-the-job assistance**

Conclusion

E-learning in the world of health and safety has transformed immensely already.

The future of e-learning will be driven by advancements in AI, AR and VR technology. AI-tailored learning will increase awareness and preparedness. The evolution will improve compliance, cost-effectiveness, scalability and most importantly, safer work practices.

LEADERSHIP **NAVIGATION**

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