HAN H2 EVENT 30 JANUARI 2026

ACE automotive center of expertise

ACE MOBILITY IS DRIVEN BY: Fontys HAN_UNIVERSITY OF APPLIED SCIENCES

together we create the future of mobility

HEIA-FR HTA-FR

UNIVERSITÉ MARIE & LOUIS PASTEUR

Interreg North-West Europe

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Van item op een EU agenda tot...
praktisch toepasbare kennis op de werkvloer

Chris Huijboom

automotive center of expertise

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PARIS2015

UN CLIMATE CHANGE CONFERENCE

COP21·CMP11

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Knowledge Need

Source: www.rapportwennink.nl

Source: www.nrc.nl

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Knowledge Need

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Source: wef

Knowledge Need

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Source: The Lightning Catchers, Bryan Allen

Source: wef

Source: Jeroen Bakker
https://jeroen.nl/blog/netcongestie-onderzoek-per-postcode-plaats-gemeente-en-provincie

Knowledge Need

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Source: www.nrc.nl

Knowledge Need

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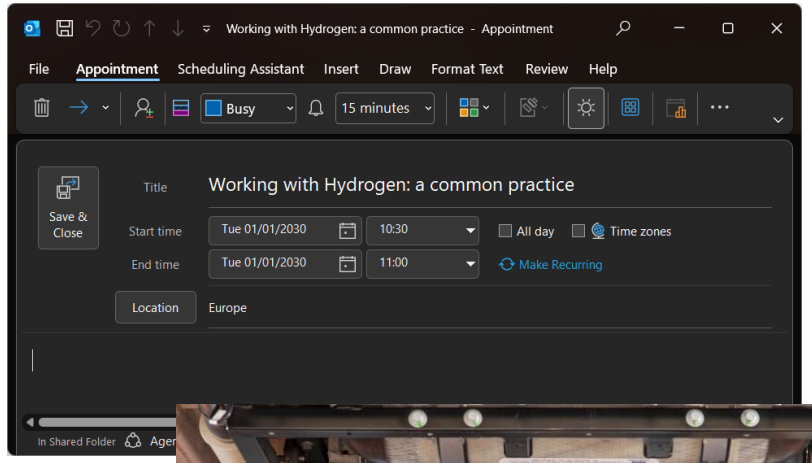

Source: bosch

Source: ad.nl & remeha

Knowledge paths

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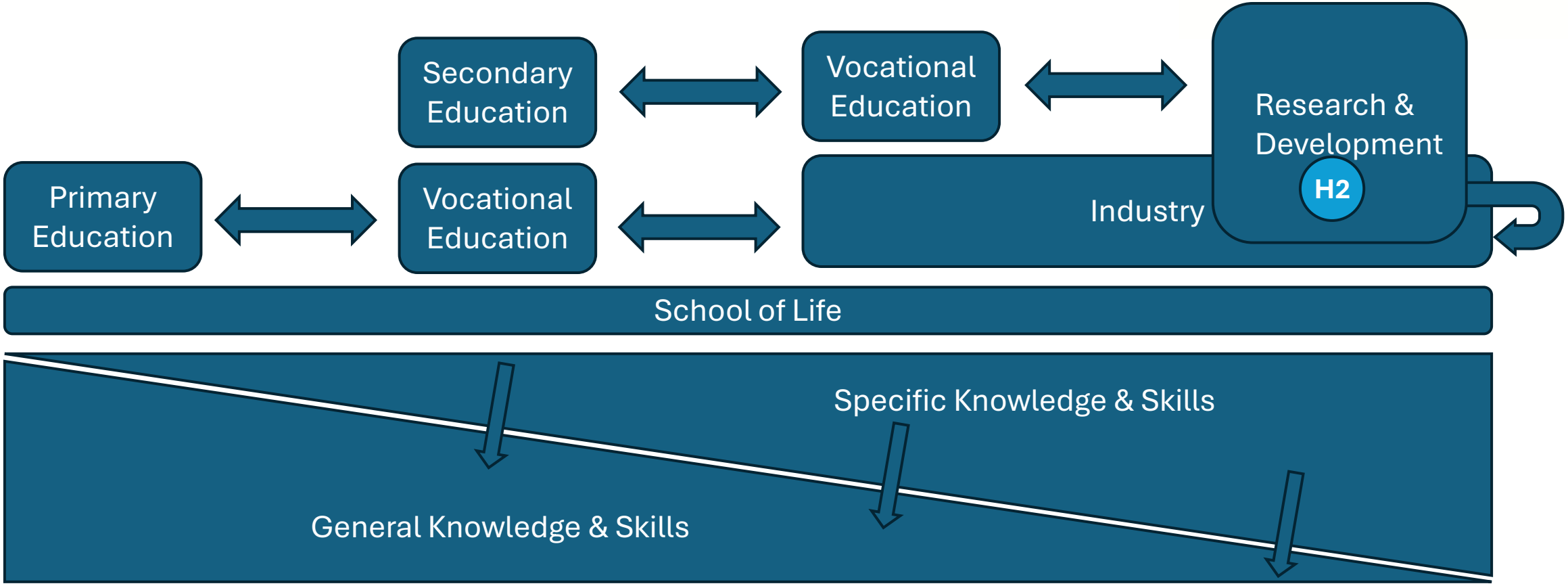

Knowledge creation & embedding

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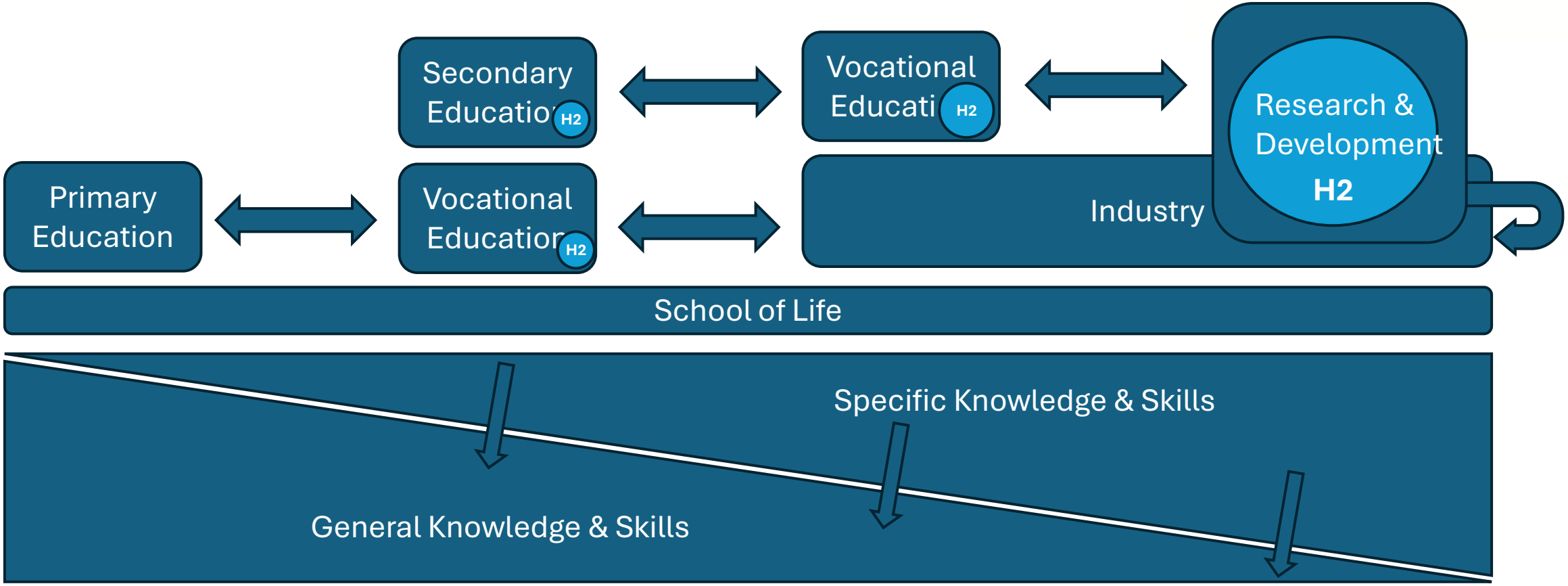

Knowledge creation & embedding

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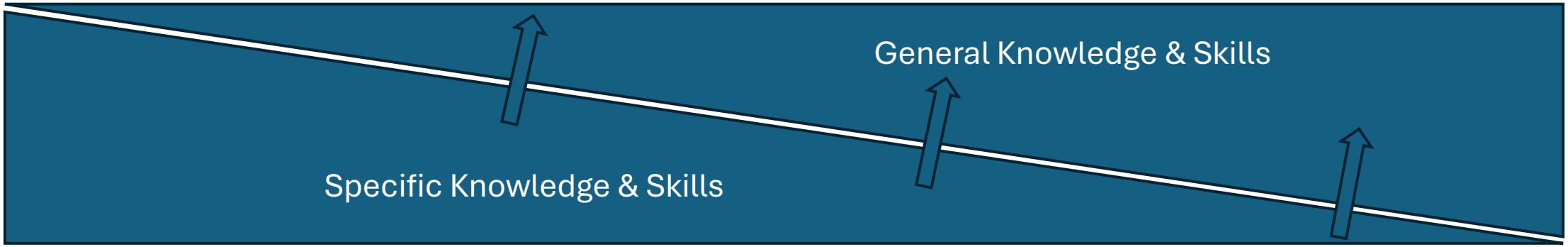
- Fundamental research
- Academic research
- Applied research
- Applied engineering

- Focus of Thesis projects
- Specific Modules in Masters
- Specific Modules in Bachelors
- Specific Modules in Vocational

- Part of Technical Masters
- Part of Technical Bachelors
- Part of Vocational Training
- Part of Secondary School Specialisation



Knowledge creation & embedding

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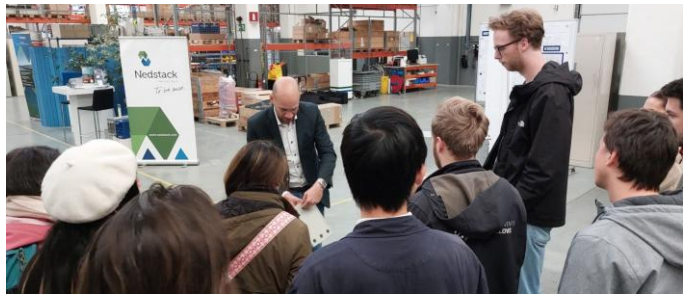
Green Skills and Knowledge for Hydrogen

Specific knowledge and skills

- Fundamental research
- Academic research
- Applied research
- Applied engineering
- Training the trainer
- Training the professional
- Training academics



Applied knowledge and skills

- Focus of Thesis projects
- Specific Modules in Masters
- Specific Modules in Bachelors
- Specific Modules in Vocational
- Industry specific training
- Application specific training

General knowledge and skills

- Part of Technical Masters
- Part of Technical Bachelors
- Part of Vocational Training
- Part of Secondary School Specialisation

Source: www.rug.nl

Knowledge creation & embedding

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Program		13-10-2025	14-10-2025	15-10-2025	16-10-2025	17-10-2025
		Monday	Tuesday	Wednesday	Thursday	Friday
09:00 - 09:30	**Welcome**	Welcome by Host: S + S				
09:30 - 10:45	**Presentation 1 Practicalities**	**Hydrogen Ecosystem**	**H2 Generation: practicalities**	**Infrastructure: practicalities**	**Storage: practicalities and regulation**	**Fuel Cell and H2ICE: practicalities**
		An overview of the ecosystem we're dealing with. What are the roles of the different components in this ecosystem, how do they interact with each other and what can be said about their function. **RUG**	An in depth review of the different Hydrogen Generation methods. Looking specifically in to steam methane reforming, electrolysis and others. Comparing the methods and assessing the pros and cons. **RUG**	Getting hydrogen from one place to another. What does it mean to transport hydrogen. What infrastructure is available, what infrastructure is planned, what infrastructure can be repurposed? What means of transportation are available and what do they mean for the pricing, adoption and scaling of hydrogen. **HAN**	A broad overview in to the various methouds of storing hydrogen: liquid, gaseous, metal hydrides and chemically bound. What are the advantages and disadvantages of various options. What are the TRL levels, adoption rate and expectations. **RUG**	Current affairs on TRL levels for H2 application through fuel cells or ICE. Where do we stand, what are the projections and how can we advance through lowering adoption barriers on retrofitting. **HAN**
10:45 -11:00	**Coffee break**					
11:15 - 12:30	**Presentation 2 Modelling**	**Components, Infrastructure and Skills**	**H2 Generation: modelling**	**Infrastructure: modelling**	**Storage: modelling with CFD inclusion**	**Fuel Cell modelling for life cycle**
		Diving deeper in the functionality of different components, the supporting infrastructure and how to translate those to mathematical representations. **HAN**	Detailing the modeling of PEMFC/Elektrolyser. Where does it make sense to go in to detail, for what purpose and where to skip corners. Where does precision make sense? Where does academic lazyness serve efficiency? **UMLP**	What limitations play an effect in hydrogen transportation. How can those limitations help build a decision model matrix for applications? **HAN**	Getting the behaviour right: how to include forced convexion and joules thompson effects in to modelling gaseous storage by incorporating CFD elements. What are the effects of radius/length ratio's and filling entry points? Can design help lessen the refilling times and encourage adoption? Find out through modelling. **HAN**	Life cycle comparison translated to TCO expectations. What is an honest expectation for applying a fuel cell vs an ICE in industrial applications. What are the dominant elements to life expectancy and can they be controlled. **UMLP**
12:30 - 13:30		**H2 Tosti's (90-100)**	Lunch on site	Lunch on site	Lunch on site	Lunch on site: Hand in your evaluation form for lunch.
13:30 - 15:00	**Session 1 Hands on**	**Hands on:** Experiencing H2 applications, identifying required skills. (**HAN Hydromotive Racing, eOx, H2 Demonstrator, H2 Step, H2 Bakfiets, H2Lab**)	**Hands on:** Electrolyser kits, looking in to the bubbles.	**Hands on:** Safety aspects related to applying hydrogen in a combustion engine for mobile application. **Fribourg University of Applied Science**	**Hands on:** Storage and Joule Thomson	**Hands on:** EMS for FC. Adjusting activation for FC/Battery hybrid systems based on various load cycles. What does the IV curve and efficiency mean for an EMS.
		Extra Time Demonstrator if needed				
15:00 - 15:15	**Coffee break**					End of School: Hand out certificates.
15:15 - 17:00	**Session 2 Visit**		Visit: HyGear	Visit: Rijnstate Hospital Elst	Visit: Nedstack	
Evening Event						
18:00 - 20:30			Escape Room games + drinks			

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Module on Master Level
- Fundamental Aspects
- Economical Aspects
- Theoretical Aspects
- Math / Modelling aspects
- Company visits
- Practical Education

Autumn School 2026
- Fundamental Aspects
- Economical Aspects
- Theoretical Aspects
- Math / Modelling aspects
- Company visits
- Practical Education

Training Secondary School teachers
- Discussing stakes
- Discussing desires
- Discussing means
- Creating teaching materials
- Organizing Science Event

International participation

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- Facilitating steps from specific to general knowledge
- Allowing preparedness for a cleaner, more independent energy supply
- Welcome to join and support