

Excellence Network Vocational Education for Sustainable Development in Europe

KA2 Small Scale Project



**Co-funded by
the European Union**

Hydrogen - a future topic in excellent vocational education for sustainable development (VESD)

Documentation of learning arrangement

Topic:	Teaching and learning situations in EQR4 at BBS Burgdorf
Network partner:	BBS Burgdorf
Vocational Field of the Learning arrangement:	Automotive mechatronics vocational education
EQF:	4
Learning group:	
SDGs:	Fuel cells in powertrains: examples of applications in the automotive industry for teaching purposes.
Future skills:	Integration of self-built high-voltage test benches for theoretical and practical teaching.

Description of learning arrangement:

The BBS Burgdorf will join the project by leading a three-hour workshop entitled 'Teaching and learning situations in EQR4 at BBS Burgdorf using the example of fuel cell vehicle malfunction', in order to provide practical examples of technical lessons in the field of automotive power trained by hydrogen systems, and demonstrate their integration into the vocational education framework.

Description of the activity taken

The Workshop entitled 'H2 in Learning Arrangements in Vocational Training (EQF 1–4): Teaching Learning Scenarios in EQF 4 at BBS Burgdorf' has been focused in order to classify the topic of hydrogen in the European Qualifications Framework (EQF) and presenting possible learning situations.

In particular, a lesson on the malfunction of a fuel cell vehicle will presented as an example.

The workshop should actively involve participants to join technical questions

concerning Hydrogen automotive applications in teaching, as well as questions about practical integration into the classroom, in order to allow interesting exchange of experiences and approaches.

The teamwork build the workshop in an informative and stimulating form of presentation follow with practical teaching units and examples of exercises sheets forms.

Description of contribution in Workshop (3 Hours)

Qualification portfolio

Classification of BBS Burgdorf courses within the EQR framework

Didactic action system in the dual vocational training system

Action orientation: basic, advanced and laboratory modules

Learning processes in action orientation

Fuel cell drive in a real system.

Description of a learning situation in a real action situation

Problem: Vehicle has a short range

Identification of the drive system

From real systems to learning models

Schematic representation of a fuel cell vehicle

The fuel cell subsystems in the vehicle

Teaching model

Selected student work assignments

Energy conversion process

Establishing the 'READY' operating status

Recording measured values on the fuel cell model

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