

Sustainability in initial and continuing vocational education and training

Dezember 2025

Funded by



German Office for International Cooperation in
Vocational Education and Training



on the basis of a Decision
by the German Bundestag

1. Introduction & terminology

In 1987, the United Nations (UN) Brundtland Commission set out an important marker in terms of our understanding of the notion of sustainability by defining *sustainable development* as:

“meeting the needs of the present without compromising the ability of future generations to meet their own needs.”



1.1 Four-dimensional sustainability

Ecological dimension

Environmental protection,
conservation of resources,
climate neutrality

Cultural dimension

Education, values,
societal transformation



Social dimension

Human rights, fair working
conditions, the common good

Economic dimension

Economic profitability, efficiency,
long-termism



1.2 Sustainable Development Goals (SDGs) of the UN

The “2030 Agenda for Sustainable Development” was adopted by the UN in 2015 and signed by all UN member states.



The 17 SDGs are specified by means of 169 sub-goals at an ecological, social and economic level.



1.3 European Union context

Exemplary overview of the ESG criteria

ESG criteria		
Environment	Social	Governance
<ul style="list-style-type: none">▶ Climate▶ Scarcity of resources▶ Water▶ Biodiversity	<ul style="list-style-type: none">▶ Employees▶ Health and safety▶ Demographic change▶ Food security	<ul style="list-style-type: none">▶ Risk and reputation management▶ Supervisory structures▶ Compliance▶ Corruption

Source: <https://wirtschaftslexikon.gabler.de/definition/esg-kriterien-120056/version-369280>



1.3 European Union context

ESG criteria from a company point of view

Environment

- ▶ Consumption of resources
- ▶ Biodiversity
- ▶ Noise
- ▶ Pollution of water, soil, air
- ▶ Greenhouse gas emissions
- ▶ Occupational health and safety

Social

- ▶ Responsibility for employees
- ▶ Fair payment
- ▶ Initial and continuing VET
- ▶ Equality, diversity, inclusion
- ▶ Social commitment

Governance

- ▶ Company management and control
- ▶ Compliance (“sticking to the rules”)
- ▶ Transparency
- ▶ Company values and ethics
- ▶ Cooperation with business partners
- ▶ Needs of stakeholders

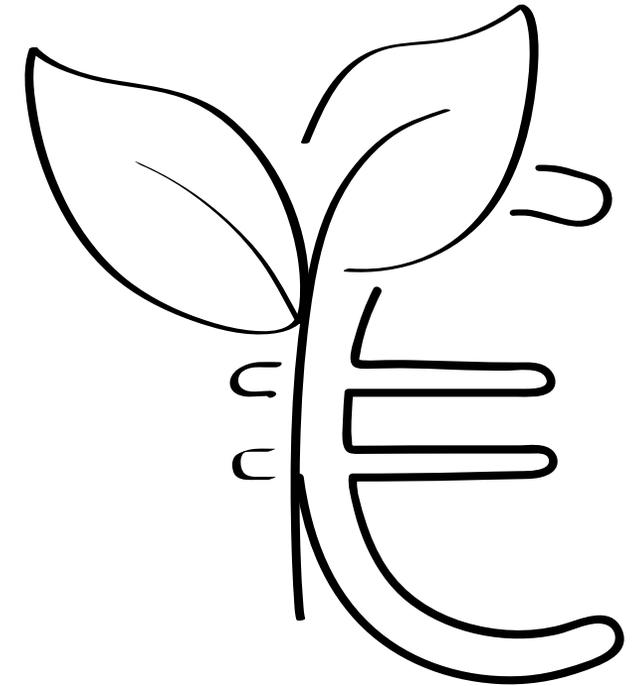


1.3 European Union context

Transforming the EU's economy for a sustainable future

Increasing the EU's climate ambition for 2030 and 2050

- ▶ Supplying clean, affordable and secure energy
- ▶ Mobilising industry for a clean and circular economy
- ▶ Building and renovating in an energy and resource-efficient way
- ▶ A zero-pollution ambition for a toxic-free environment
- ▶ Preserving and restoring ecosystems and biodiversity
- ▶ From 'Farm to Fork' – a fair, healthy and environmentally-friendly food system
- ▶ Accelerating the shift to sustainable and smart mobility



Sources and further information: European Commission (2024), EUR-Lex (2019)



1.3 European Union context

European Council – EU Green Deal

Corporate Sustainability Reporting Directive (CSRD)

- ▶ Requires companies to report on how the way in which they address social and ecological challenges.
- ▶ Aims to facilitate transparency on the part of companies vis-à-vis ESG issues.

EU Taxonomy Regulation

- ▶ Defines which activities are deemed to be sustainable under which circumstances.
- ▶ Also applies to companies which are subject to the CSRD.

Sustainable Finance Disclosure Regulation (SFDR)

- ▶ Financial market participants must provide full disclosure regarding the sustainability of their products.
- ▶ Companies are required to provide appropriate information.

Objectives: reorientation of capital flows towards sustainable investment, inclusion of sustainability in risk management, fostering transparency and a long-term focus



1.3 European Union context

EU requirements (overview)

Directives are closely intertwined and mainly demand transparency in business activities.

Due diligence obligations in the supply chain

- ▶ Supply Chain Due Diligence Act (Lieferkettensorgfaltspflichtengesetz, LkSG)
- ▶ CSDDD Corporate Sustainability Due Diligence Directive

Disclosure

- ▶ CSRD Corporate Sustainability Reporting Directive
- ▶ EU Taxonomy Regulation

Product focus

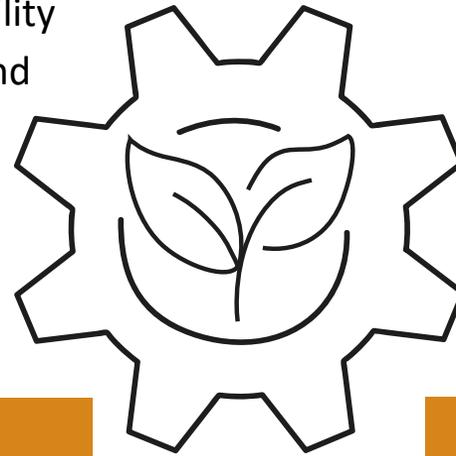
- ▶ EUDR EU Deforestation Regulation
- ▶ GCD EU Green Claims Directive



2. Implementation of sustainability at companies

Management commitment

- ▶ Development of an understanding of sustainability and an attitude towards linking sustainability and corporate strategy



Organisation and operationalisation processes

- ▶ Defining of areas of responsibility and collaboration between various functions and departments for the development of objectives and roadmaps for the sustainability topics

Mobilisation of the workforce

- ▶ Creation of a positive attitude to sustainability and of a willingness to take action

Establishment of knowledge

- ▶ Raising employee awareness and empowering staff with regard to the topic of sustainability as a prerequisite for the implementation of sustainability



3. Sustainability in challenging times



4. Sustainability in all German training programmes

Economic dimension	Ecological dimension	Social dimension	Cultural dimension
<ul style="list-style-type: none">▶ Precautionary management; circular economy▶ Material flow management, environmental management system▶ Environmentally compatible, innovative technologies▶ Ecological design (lifetime, environmentally friendly disposal, aesthetics)▶ True-cost pricing (including environmental and social costs)▶ Polluter pays principle▶ Regional and local marketing networks and fair trade	<ul style="list-style-type: none">▶ Economical use of resources▶ Nature's measures of time (regenerative capacity, appropriate interval)▶ Biodiversity▶ Circular economy (closed-loop systems)▶ Renewable energy▶ Precautionary principle▶ Prevention of damage to the ecosystem (reduction of pollutant inputs, emissions, waste)	<ul style="list-style-type: none">▶ Democratisation, participation of all population groups in all areas of life, promotion of human health▶ Equal access to natural resources and equal development rights▶ Internal social justice▶ Consideration of the vital interests of future generations▶ Networks; earning a living through work	<ul style="list-style-type: none">▶ Ethical safeguards▶ Sustainability-oriented lifestyles▶ Holistic perception of nature; aesthetic perception of sustainable development▶ Traditional knowledge; dealing with time▶ Culture of dealing with things▶ Consumer awareness; local public sphere; international exchange; global responsibility; cosmopolitan culture



4. Sustainability in all German training programmes

Climate-related occupations

- ▶ Plant mechanic; electrician, electronics technician
- ▶ Heating engineer, gas engineer, plumber
- ▶ Plant mechanic for sanitary, heating and air conditioning systems
- ▶ Electronics technician for energy and building technology
- ▶ Electronics technician for building system integration
- ▶ Roofer specialising in energy technology for roofs and walls
- ▶ Painter
- ▶ Industrial clerk

Environmental occupations

- ▶ Water supply engineering technician
- ▶ Sewage engineering technician
- ▶ Pipe, sewer and industrial service technician
- ▶ Recycling and waste management technician

Commercial occupations

- ▶ Wholesale and foreign trade clerk
- ▶ Management assistant for retail services

Environmentally friendly packaging

- ▶ Paper technologist
- ▶ Packaging materials technologist

Electromobility (20 occupations)

- ▶ Electrical occupations in IT, industry, the craft trades and the motor vehicle sector
- ▶ Railway worker specialising in operational service (train driving and transport)
- ▶ Driver
- ▶ Rail and road forwarding clerk, transport services clerk
- ▶ Railway worker specialising in train traffic control, rail track builder

Green occupations

Training occupations in the agricultural sector, the “green 14”, environmental and climate protection in relation to soils, plants and animals and modern technology



4. Sustainability in all German training programmes

Standard occupational profile positions

German vocational education and training has enshrined sustainability, digitalisation and artificial intelligence (AI) in framework curricula and training regulations.



Mandatory inclusion

Teaching of relevant competencies is compulsory.

Relevance to the examination

Already forms part of the examination in some occupations.

Practically oriented implementation

Projects and elective modules for supply-chain optimisation



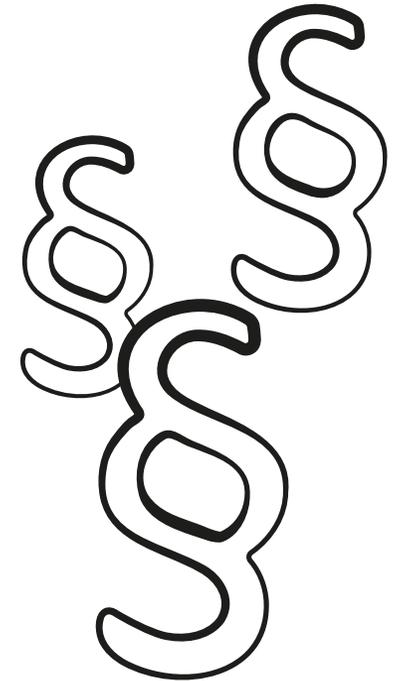
4. Sustainability in all German training programmes

BIBB Board Recommendation No. 172

“The BIBB Board further recommends that companies providing training and vocational schools should act now to **impart** these **modernised standard occupational profile positions** in training in all training occupations pursuant to the BBiG and HwO in an integrative manner together with the relevant specific skills, knowledge and competencies throughout the entire training period even if these profile positions are not yet included in all training regulations.

The Board calls upon all vocational education and training stakeholders to offer **active assistance** by making companies providing training and vocational schools aware of this Recommendation of the Board and of the significance of these new standard occupational profile positions for the world of work in a number of different ways and by promoting the implementation of the Recommendation whilst providing appropriate support.”

This recommendation goes beyond the regulations that entered into force on 1 August 2021.



Source: <https://www.bibb.de/dokumente/pdf/HA172.pdf>



4. Sustainability in all German training programmes

Competencies to be imparted integratively as an overall package

1 Organisation of the training company, vocational education and training, employment and collective bargaining law

- ▶ NEW: significance, function and contents of the training regulations
- ▶ Opportunities for occupational advancement and further professional development

2 Health and safety at work

- ▶ NEW: measures for the avoidance of risks and mental and physical stress to oneself and others including the adoption of preventive actions
- ▶ Ergonomic ways of working

3 Environmental protection and sustainability

- ▶ Cooperation in the interests of economic, environmental and social sustainability
- ▶ Development of proposals for sustainable actions in one's own work area

4 Digitalised world of work

- ▶ Data protection and data security
- ▶ Information research and lifelong learning
- ▶ Communication
- ▶ Take social diversity into account in showing appreciation of others
- ▶ Joint reflection upon and structuring of tasks



4. Sustainability in all German training programmes

Environmental protection and sustainability

Throughout the entire training period

Identify opportunities within one's own area of responsibility for the avoidance of instances of environmental pollution and impacts on society caused by the company and contribute to the further development of these opportunities

During work processes and with regard to products, goods or services, give due consideration to the economic, environmentally compatible and social aspects of sustainability when using materials and energy

Comply with environmental protection regulations as these apply to the company providing training

Avoid waste and make substances and materials available for recycling or disposal in an environmentally friendly manner

Develop proposals for sustainable actions in own work area

Comply with company regulations whilst working together in the best interests of economically, ecologically and socially sustainable development and communicate in a way which is appropriate to the target group

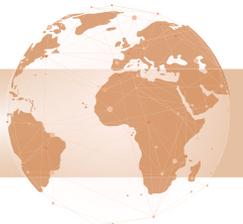
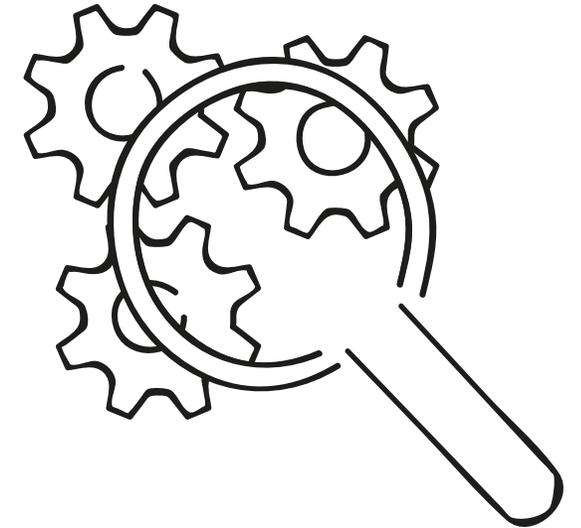


4. Sustainability in all German training programmes

Environmental protection and sustainability

During work processes and with regard to products, goods or services, accord due consideration to the economic, environmentally compatible and social aspects of sustainability when using materials and energy

- ▶ Origin and manufacture
- ▶ Transport routes
- ▶ Lifetime and long-term usability
- ▶ Ecological and social footprint of products and services or of value chains
- ▶ Quality marks and certificates, e.g.:
 - ▶ fair trade
 - ▶ regionality
 - ▶ organic production

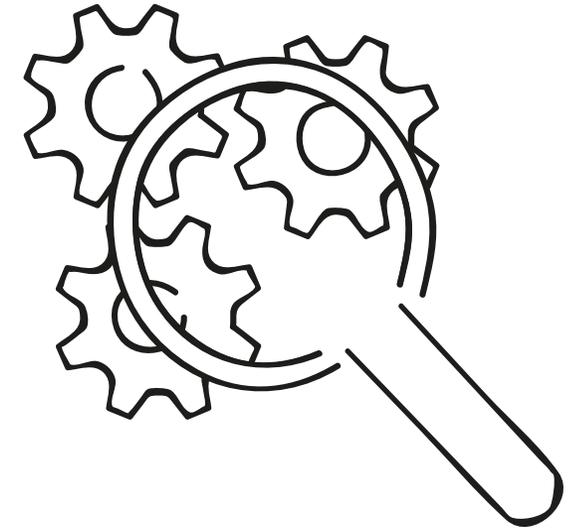


4. Sustainability in all German training programmes

Environmental protection and sustainability

Develop proposals for sustainable actions in own work area

- ▶ Conflicting objectives and correlations between economic, ecological and social requirements
- ▶ Optimisation approaches and action alternatives whilst taking ecological effectiveness and efficiency into account
- ▶ Benefits and drawbacks of optimisation approaches and action alternatives
- ▶ Effectiveness of measures
- ▶ Appreciation of innovative ideas



4. Sustainability in all German training programmes

Assumptions MoveOn scenario

1. Construction investments

1. Investment in “fast Internet“ (5G across Germany)
2. Improvement in rail infrastructure
3. Implementation of “smart” mobility concepts in cities and towns
4. National charging infrastructure for electric vehicles

2. Investments in equipment

5. Modernisation of the public transport vehicle fleet: Switch to electric buses
6. Expansion and modernisation of the rail transport fleet
7. Alternative drive systems in inland shipping

3. Mobility of people and goods

8. Change of the modal split in freight transport
9. Drive system change and digitalisation in road freight transport
10. Change of the modal split in passenger transport
11. Drive system change in motorised private transport

4. Production methods

12. Digitalisation of transportation service providers
13. Demand for motor vehicle repair services

5. Occupations

14. Changing demand for occupations in the wake of autonomous driving

6. State

15. State funding of public transport



4. Sustainability in all German training programmes

What company management can do

- ▶ Train VET staff to become promoters of sustainability at vocational education and training learning venues.
- ▶ Use full-time and part-time training staff to impart relevant occupationally specific and cross-cutting sustainability competencies and relevant aspects of sustainability in company teaching/learning environments.
- ▶ Train trainees to become junior experts in sustainability at the company.
- ▶ Appreciation of contributions to sustainability made by trainees and trainers and communicating this within the company.
- ▶ Internal evaluation of the systematic integration of sustainability in the training process and monitoring of development into a sustainable learning venue.

What trainees can actively do

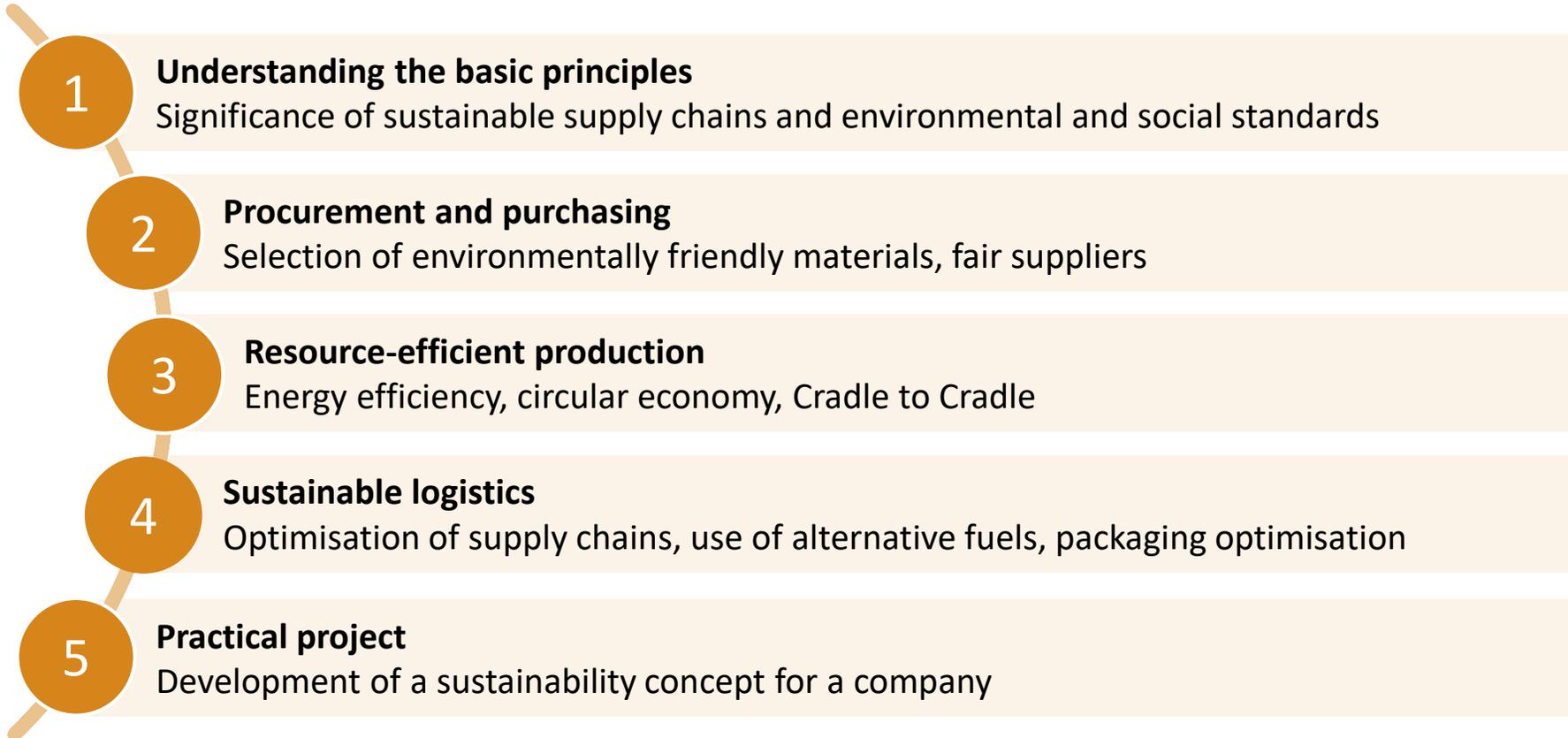
- ▶ Record videos and podcasts
- ▶ Create flyers and brochures
- ▶ Establish a Sustainability Team
- ▶ Human rights
- ▶ Mentoring
- ▶ Organise events
- ▶ 5-minute talks
 - ▶ Current developments in sustainability (trade and industry, policymaking and society)
 - ▶ Discussion of own points of view (personal and professional)
 - ▶ Simulation games in which trainees take on the roles of decision-makers in real processes.

Source: based on BBNE, www.nachhaltige-lernorte.de



5. Example training module

Sustainability in the supply chain



Target group

- ▶ Industrial clerks
- ▶ Wholesale/foreign trade
- ▶ Warehouse logistics
- ▶ Process mechanic
- ▶ Information technology specialist



5. Example training module

Learning objectives of the training

Understand sustainability in four dimensions.

- ▶ Trainees classify processes in their occupation accordingly.

Know the 17 Sustainable Development Goals.

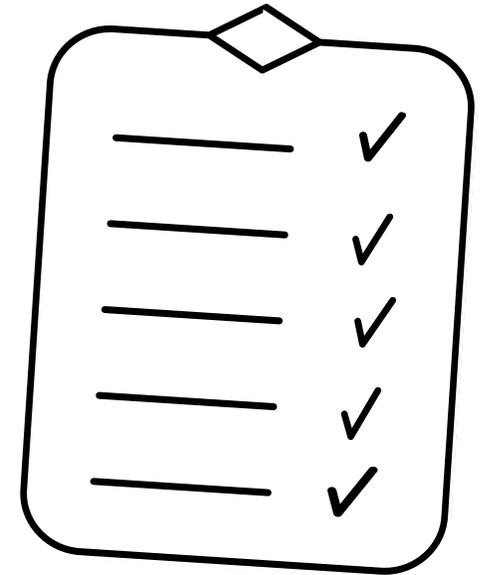
- ▶ Basic knowledge of the UN 2030 Agenda and its implementation

Evaluate sustainability models.

- ▶ Understand various concepts and be able to weigh against one another.

Practical application

- ▶ Assess the significance of sustainability for the craft trades and for trade and industry.



6. Participation & self-efficacy



This presentation, further presentations and information on German vocational education and training and international VET cooperation are all available on our website at:

www.govet.international

Sources

- ▶ Federal Government Report on Vocational Education and Training (BMBFSFJ) ([link](#))
- ▶ BIBB/VET research ([link](#))
- ▶ BIBB Data Report ([link](#))
- ▶ KMK ([link](#))
- ▶ BMBF Data Portal ([link](#))
- ▶ Destatis statistics on VET ([link](#))
- ▶ Institute for Employment Research ([link:](#))
- ▶ Research Institute for Vocational Education and Training (f-bb) ([link](#))

Further information on the Internet

- ▶ Report on Vocational Education and Training ([link](#))
AGBFN (Vocational Education and Training Research Network) ([link](#))
- ▶ CeVet ([link](#))
- ▶ BIBB VET Repository ([link](#))
- ▶ BIBB specialist publications ([link](#))
- ▶ BIBB Research Data Centre ([link](#))
- ▶ BIBB specialist journal BWP (Vocational Training in Research and Practice) ([link](#))



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