

Vocational Education and Training for Sustainable Development

Train the Trainers in Germany

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Abstract *The topic of sustainability and the concept of Vocational Education for Sustainable Development (VESD) play a major role in dual vocational education and training in Germany, especially due to the modernised occupational profile items on environmental protection and sustainability introduced in 2020. This article presents didactic approaches to the design and organizational embedding of measures aimed at developing and expanding the skills of VET personnel related to sustainability. Furthermore, an outlook is provided on an implementation project in the training occupation of gardener, demonstrating how the content of sustainable management can be integrated with qualification programs for in-company and inter-company trainers.*

Title *Vocational Education and Training for Sustainable Development. Train the Trainers in Gardening and Landscaping in Germany*

Keywords *vocational education for sustainable development, train the trainer, gardening and landscaping*

1 Introduction

In view of the changing social, educational policy, and economic framework conditions, as well as climate change and energy crises, further education and training for professionals are essential instruments for meeting the increasing knowledge intensity of gainful employment. Not least due to the adoption of the Sustainable Development Goals (SDGs) by the United Nations, Germany's participation in the European Green Deal, and

the expansion of the standard occupational profile item of environmental protection to include sustainability in dual vocational education and training (German Federal Government, 2021; Bundesinstitut für Berufsbildung [BIBB], 2021), it is clear that the topic of sustainability is also becoming increasingly important.

The companies providing training play an important role in preparing their trainees and apprentices for the current and future requirements and challenges of a holistic approach to Vocational Education for Sustainable Development (VESD). The basic didactic concept of VESD encompasses all processes of the value chain in the company and incorporates ecological, social, and ethical principles into economic decision-making processes (Mayer, 2020, p. 25).

However, translating the demand for more sustainability into binding vocational actions is challenging, as the ambiguity of the term *sustainability* and the high level of abstraction of the sustainable development concept complicate the implementation of sustainability-oriented vocational education processes (Kastrup et al., 2012, p. 119). For example, there are still hardly any formal training and further education programs for trainers on the topic of vocational education and training for sustainable development. Even when obtaining the *trainer aptitude certificate* in accordance with the German Ordinance of Trainer Aptitude (Ausbilder-Eignungsverordnung [AEVO]), future trainers hardly come into contact with sustainability. Additionally, there is no obligation to provide further pedagogical and didactic training following the formal acquisition of the trainer aptitude, which is why this often does not take place. As Schlömer et al. (2019, p. 488) argue, there is a lack of professionalization among training staff.

Nevertheless, skilled professionals are needed who can respond to current challenges in the labor market, recognize innovations, and contribute to transformation in companies (Hemkes et al., 2013). Sustainably oriented companies are becoming increasingly attractive for apprenticeships, especially for young people (Bellmann & Koch, 2019; Deutscher Gewerkschaftsbund Jugend [DGB-Jugend], 2021).

This article explores considerations for the didactic design and organizational integration of measures to develop and expand the knowledge and competencies of vocational education and training personnel in the field of VESD. Firstly, findings from pilot project research on the design of teaching-learning arrangements to promote sustainability-oriented educational processes are presented with a focus on the company as a learning location. Building on this, these principles are then concretized using the example of skilled work in the occupation of gardener, with a focus on the specialization of gardening and landscaping.

2 Connecting Work-Based Learning with Sustainable Practices

Dual vocational education and training in Germany is intended to impart the typical competences in an occupational profile in breadth and depth, and thus has more than just a qualification function. It should also enable trainees to actively participate in and help shape the world of work and society. Vocational education and training therefore includes the promotion and reflection of attitudes, inner values, or principles to which professional behavior is aligned (Beer & Frommberger, 2022, p. 77).

For vocational education and training, company requirements are thus linked to societal educational demands. This is where concepts of Vocational Education and Training for Sustainable Development (VETSD) come in. The core processes and value chains typical of the sector, along with their key problems, are identified and turned into starting points for sustainable and action-oriented teaching and learning processes. This takes place at the level of occupational and sector-specific skilled work and with regard to the development potential of education for sustainable development in occupational activities. Well-trained personnel in companies are indispensable for supporting and driving these developments forward.

When looking at vocational education and training staff in companies, it must be noted that they generally fulfil a dual function: More than 90 % of the trainers involved in vocational training within the dual apprenticeship system in Germany take on tasks both as skilled workers and as trainers. This means they are in a constant field of tension between company interests, their own employee interests, and the qualification requirements and expectations of the trainees (Grollmann & Ulmer, 2020, p. 536). Particularly in the in-company part of dual vocational education and training, it is usually a matter of creating the greatest possible overlap between the pedagogical demand for vocational socialization, employability, and personality development on one hand, and the business demand for economically useful and applicable skills for operational tasks on the other (Schlömer et al., 2019, p. 487).

It should also be considered that in-company continuing education can take on a socialization function and serve to control value orientation—also “in order to increase acceptance of operational requirements and new technologies and at the same time align subjective learning interests and motivations with the achievement of entrepreneurial target categories” (Dobischat & Schäfer, 2022, p. 869). Trainers in vocational education and training, therefore, play a key role due to the dual function described above, as they “can contribute to a change in cultures as well as work and business processes through teaching-learning processes” (Schlömer et al., 2019, p. 492).

In line with findings from vocational education research, companies tend to prefer vocational and workplace-related training offerings that focus on learning objects originating directly from work processes and that offer usable opportunities for later use within the company (Dobischat & Schäfer, 2022, p. 863). Based on Lipowsky (2009), who examined the effectiveness of further training measures for teachers, and taking into account findings from pilot research in the field of VETSD (Beer & Steinkamp, 2023; Kuhlmeier & Kastrup, 2023), overarching conditions for the success of qualification programs for in-company training personnel can be described. Effective further training measures for trainers focus on technical content and have close links to the curricula (Lipowsky, 2009, p. 352), offering a high degree of connectivity to in-company training practice. This means that the topics, materials, and methods used should be categorized in the training context and interlinked with the training content—Lipowsky speaks of a “content focus” in this context.

When developing tailored training formats, it is essential to initially review and analyze the foundational elements and curricula underlying the respective vocational training (Kuhlmeier & Kastrup, 2023, p. 13). In a subsequent step, industry-specific job requirements and competency expectations for apprentices and other professionals must

be identified; this can only be achieved through close collaboration with trainers and other representatives from the business sector. Additionally, further training measures should address the domain-specific acquisition and understanding processes of learners in the context of training (Lipowsky, 2009, p. 353). This is not simply a matter of teaching didactic and methodological concepts, but of enabling training staff to develop their own teaching and learning concepts and adapt existing ones (Kuhlmeier & Kastrup, 2023, p. 15).

In order to establish VESD content in vocational education and training structures, the responsible stakeholders should have or generate a fundamental willingness to change. This willingness can be positively influenced if the measures and materials offered meet an actual need and have a high potential for benefit, if the company stakeholders believe that the changes initiated represent an appropriate cost-benefit ratio, and if the innovations can ideally be integrated into the current or future organizational development processes of an institution.

The project *Qualification for Sustainable Training and Management in Gardening, Landscaping and Sports Ground Construction (NAWiGaLa)*¹ is looking at how this can be realized.

3 VESD in Practice: The Implementation Project NAWiGaLa

The aim of the project is to strengthen sustainability-related vocational skills through the development and implementation of VETSD qualifications for vocational education and training staff in companies and inter-company training centres, as well as for future trainers and vocational teachers, with a focus on training as a gardener specializing in gardening and landscaping.

The profession of gardener can currently be learned in seven different specializations. The vast majority of all training contracts are concluded in the gardening and landscaping specialization—in 2021, this accounted for almost 75 % of all new contracts nationwide. In the 2022 ranking of chosen dual apprenticeships according to new contracts in Germany, the gardener is among the top 25 and has the highest number of trainees. The NAWiGaLa project, therefore, addresses an industry heavily involved in the vocational education and training of young people. Moreover, the skilled work typical of the sector offers many points of contact and interfaces with the topics of sustainability and VETSD in the context of the environment, climate, landscape, and natural balance in interaction with a liveable environment.

There is a significant need for adaptation and further training on the part of the companies, for example, regarding the materials and components selected for the construction of outdoor facilities, the machines used in gardening and landscaping, the conversion of petrol or diesel-powered machines to electric appliances, and recycling and waste management. There is also a need for information and further training in sustainable purchasing for gardening and landscaping. The economic requirements and specifications must not be disregarded.

1 German: Qualifizierung für Nachhaltiges Ausbilden und Wirtschaften im Garten-, Landschafts- und Sportplatzbau (NAWiGaLa), translated by the authors

Occupation-specific fields of action with a high degree of overlap with aspects of sustainable management include the use of materials, components, and plants of regional origin, the avoidance of tropical timber, and insect-friendly and diversity-conscious design. Additionally, VETSD based on skilled work can contribute to increasing the attractiveness of vocational education and training and thus to securing skilled labor—an urgent and highly relevant topic given the relatively high contract cancellation rates of more than 25 % (BIBB 2023, p. 1) in the gardener training occupation.

The aim of the project is to develop, expand, and establish programs for training personnel in training and further education institutions. On this basis, the training and placement processes will be modernized to motivate employees in the companies and *take them along* on the transformation process towards sustainability.

In this way, the project is making a significant contribution to the development of a VESD-promoting framework in the gardening, landscaping, and sports ground construction sector. Additionally, the project aims to perpetuate the content and measures from the outset by involving relevant stakeholders and disseminating the various results at different levels, incorporating them into intermediate and final examinations. In this sense, sustainability is understood as a cross-cutting issue and viewed holistically: the goal is to make the training companies and other institutions in the sector competent in sustainability issues in all areas of their activities (*whole-institution approach*).

The materials to be developed are derived from and determined by the professional fields of action in horticulture and landscaping, as well as professional and scientific findings. Care is taken to ensure that the content is developed and communicated practically, oriented towards the needs of companies and vocational training staff.

To reach as many skilled workers as possible from the companies and inter-company training centres, qualification concepts are being developed that can be flexibly selected by the companies and employees. At the same time, care is being taken to ensure the greatest possible compatibility with existing qualification and further training seminars from the industry. Modular and compact qualification programs in face-to-face and online formats are planned to meet the different needs of the companies and their employees. In terms of content, the qualification program focuses not only on technical and specialist qualifications but also on the didactic teaching of industry-specific skilled work with a focus on vocational training for sustainable development.

NAWiGaLa is intended to reach companies and inter-company training centres as well as further education institutions and technical schools for master craftsman examination preparation courses in gardening and landscaping throughout Germany. As the training occupation of gardener is currently being reorganized, the project's chances of success are considered very good. Sustainability is a highly relevant topic, and it can be assumed that the reorganization will allow the potential for innovation to be used to add aspects of sustainable management and work to the occupational profile, thereby also contributing to the attractiveness of the profession.

4 Conclusion

VESD is a critical component of preparing the workforce for the challenges of the 21st century, including those related to sustainability, climate change, and environmental conservation. Integrating sustainability principles into vocational education and training is essential for equipping apprentices with the knowledge and skills needed for sustainable and environmentally responsible careers.

To achieve this goal, it is crucial to provide further education and professional development opportunities for trainers and educators in vocational education and training. Training measures should be tailored to the specific needs and characteristics of different professions and industries, as exemplified by the gardening and landscaping field.

The planned project aims to enable evaluations of the effectiveness of VESD qualification measures for in-company VET personnel and identify typical barriers to implementation. The project will also test how VESD aspects can be incorporated into regulatory work. The procedure will be documented and analysed regarding the gatekeepers, promoters, and possible *stumbling blocks* involved. Ideally, this will allow for generalizable conclusions about possible success factors and obstacles in implementing such processes in other occupations and reorganization procedures.

5 References

- Beer, M. & Frommberger, D. (2022). Nachhaltigkeit in der dualen Berufsausbildung – Potenziale am Lernort Betrieb [Sustainability in dual vocational training – potentials at the company learning location]. In B. Hemkes, K. Rudolf & B. Zurstrassen (Eds.), *Handbuch der Nachhaltigkeit in der Berufsbildung. Politische Bildung als Gestaltungsaufgabe* (pp 75–85). Wochenschau Verlag.
- Beer, M. & Steinkamp, H. (2023). Lernmodulgestaltung im Ausbildungsberuf Milchtechnologin/ Milchtechnologe als Verbindung von Lebenswelt, berufsfachlichem Lernen und BBNE. Der Modellversuch NaMiTec: Entwicklung eines Aus- und Weiterbildungskonzeptes zur Erhöhung des Beitrages zur nachhaltigen Entwicklung in der Milchtechnologie [Learning module design in the training occupation of dairy technologist as a combination of lifeworld, vocational learning and VETSD. The NaMiTec pilot project: Development of a training and further education concept to increase the contribution to sustainable development in dairy technology]. In M. Ansmann, J. Kastrup, & W. Kuhlmeier (Eds.), *Berufliche Handlungskompetenz für nachhaltige Entwicklung. Die Modellversuche in Lebensmittelhandwerk und -industrie* (pp 81–100). Barbara Budrich, Leverkusen.
- Bellmann, L., & Koch, T. (2019). Ökologische Nachhaltigkeit in deutschen Unternehmen: Empirische Ergebnisse auf Basis des IAB -Betriebspanels 2018 (IAB-Forschungsbericht 8 | 2019). [Ecological sustainability in German companies: Empirical results based on the IAB Establishment Panel 2018 (IAB Research Report 8 | 2019)]. Institut für Arbeitsmarkt- und Berufsforschung. <https://doku.iab.de/forschungsbericht/2019/fbo819.pdf> [

- Bundesinstitut für Berufsbildung (2021). VIER SIND DIE ZUKUNFT. DIGITALISIERUNG. NACHHALTIGKEIT. RECHT. SICHERHEIT. Die modernisierten Standardberufsbildpositionen anerkannter Ausbildungsberufe [Four are the Future. Digitalisation. Sustainability. Law. Safety. The modernised standard occupational profile items for recognised training occupations]. <https://www.bibb.de/dienst/publikationen/de/17281>
- Bundesinstitut für Berufsbildung (2023). DAZUBI Datenblatt für Gärtner (aller Fachrichtungen) [DAZUBI data sheet for gardeners (all specialisations)]. <http://www.bibb.de/dienst/dazubi/dazubi/datasheet/download/30-3680.pdf>
- Deutscher Gewerkschaftsbund Jugend (2021). Positionspapier: Transformation. Klima. Gerechtigkeit. Beschluss im DGB-Bundesjugendausschuss 25 Februar 2021 [Position paper: Transformation. Climate. Justice. Resolution in the DGB Federal Youth Committee 25 February 2021]. <https://jugend.dgb.de/ueber-uns/wer-wir-sind/dgb-jugend/bundesjugendausschuss/unsere-beschluesse/++co++3fbd0b3ae9c1-11ed-8e96-001a4a16011a>.
- Dobischat, R., Schäfer, A. (2022). Weiterbildung im Betrieb – Eine Domäne privatwirtschaftlicher Gestaltungshoheit [Continuing education in the workplace – A domain of private-sector organisational sovereignty]. In U. Bauer, U.H. Bittlingmayer & A. Scherr (Eds.), *Handbuch Bildungs- und Erziehungssoziologie* (second edition, pp 857–877), Springer VS.
- German Federal Government (2021). *German Sustainable Development Strategy – Update 2021*. <https://www.bundesregierung.de/resource/blob/998194/1942518/63826d442b98410c951a10f431ab0330/deutsche-nachhaltigkeitsstrategie-2021-langfassung-englis ch-download-bpa-data.pdf?download=1>
- Grollmann, P. & Ulmer, P. (2020). Betriebliches Bildungspersonal – Aufgaben und Qualifikationen [Company education personnel – tasks and qualification]. In R. Arnold, A. Lipsmeier & M. Rohs (Eds.), *Handbuch Berufsbildung* (third edition, p. 533–545). Springer VS.
- Hemkes, B., Kuhlmeier, W. & Vollmer, T. (2013). Der BIBB-Förderschwerpunkt “Berufliche Bildung für eine nachhaltige Entwicklung” – Baustein zur Förderung gesellschaftlicher Innovationsstrategien [The BIBB funding priority “Vocational education and training for sustainable development” – a building block for the promotion of social innovation strategies]. *Berufsbildung in Wissenschaft und Praxis*, 42(6), 28–31. <https://www.bwp-zeitschrift.de/de/bwp.php/de/bwp/show/7168>
- Kastrup, J., Kuhlmeier, W., Reichwein, W. & Vollmer, T. (2012). Leitlinien für die didaktische Gestaltung der Berufsbildung für eine nachhaltige Entwicklung [Guidelines for the didactic design of vocational education and training for sustainable development]. *lernen & lehren*, 107 (3), 117–124. http://lernenundlehren.de/heft_dl/Heft_107.pdf.
- Kuhlmeier, W. & Kastrup, J. (2023). Qualifizierung des Ausbildungspersonals zur Gestaltung nachhaltigkeitsorientierter Lehr- und Lernprozesse [Qualification of training personnel for the design of sustainability-orientated teaching and learning processes]. *Berufsbildung – Zeitschrift für Theorie-Praxis-Dialog*, (197), 13–16.

- Lipowsky, F. (2009). Unterrichtsentwicklung durch Fort- und Weiterbildungsmaßnahmen für Lehrpersonal [Teaching development through further education and training programmes for teachers]. *Beiträge zur Lehrerbildung*, 27(3), 346–360.
- Schlömer, T., Berding, F., Jahncke, H., Becker, C., Kiepe, K., Wicke, C. & Rebmann, K. (2019). Das didaktisch-methodische und professionelle Selbstverständnis von betrieblichem Ausbildungspersonal im Bereich des nachhaltigen Wirtschaftens [The didactic-methodological and professional self-image of in-company training personnel in the field of sustainable management]. *Zeitschrift für Berufs- und Wirtschaftspädagogik*, 115(3), 486–515.