

Dedicated to stimulate demand for sustainable
energy skills in the construction sector
D4.3 Guide for Methodologies and Pedagogical Training Tools

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Report:	D4.3 Guide for Methodologies and Pedagogical Training Tools
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Summary

This “Guide for Methodologies and Pedagogical Training Tools” intends to enlist the disposal of tools of the BUSLeague project partners and to provide advice for their selection regarding the awareness raising and training interventions that have taken place during the project. It also intends to provide useful information to interested third parties, with the target to support and enable the application of short practical training modules (including on-site training) corresponding to the current needs of the construction sector for time-efficient and cost-effective upskilling of the workforce.

To this aim, the BUSLeague consortium has prepared an inventory of tools that starts with the classification of demonstration models, training platforms and training centres, representing suitable tools for the spatial arrangements and practical upskilling of the trainees. A variety of such tools is discussed, ranging from demonstration mock-ups, mobile training platforms and training centres, product demonstrations, written content, awareness and training videos, to comprehensive learning management systems. In addition, various teaching methods are also considered in a thorough literature review, among which the direct and indirect instruction models, the self-directed and constructivist model, and the skill transfer training approach.

The inventory of the tools available within the BUSLeague consortium consists of the instruments that support the conceptual and theoretical knowledge provision, demonstrating existing mobile and fixed training centres available in France, Ireland and Bulgaria, serving for both training and assessment purposes. Besides this, specific attention is given to various demonstration mock-ups, produced either through the support of international projects as Train-to-nZEB, Fit-to-nZEB and nZEB Roadshow, among others, or via direct market initiatives such as the Practee Formation tools described in detail in the report. These mock-ups, besides their value for short and on-site training activities, also display great potential for civil engagement and professional orientation campaigns, which make them suitable for multiple purposes and providing additional value for the operators of dedicated training centres.

Other training instruments, classified as audio-visual or written content, which can be used in learning management systems, are also presented in detail in the report. Specific examples for these tools are available from the practice in Ireland and in Bulgaria, while the most comprehensive system emerges from the BAUHAUS experience in Spain, where significant investments have been attracted to provide a comprehensive learning platform for both employees of the company and professional clients.

In conclusion, the country teams participating in the BUSLeague project have developed national strategies for further development of these innovative training practices. Around them, the team has identified different sources that helped to characterise these tools and their suitability to specific contexts, including an analysis of the barriers and challenges for their practical application. A specific focus is placed on tools developed to organise training and demonstrations on energy efficiency and sustainable products at the DIY/Hardware stores. These methodologies and tools are collated as a guide for future trainings, used alongside the



energy skills quality repository described in *Report on training content and resources*¹, developed at an earlier stage of the project. Further refining of the tools and channelling them to the specific professional occupations and qualification levels is expected to take place within the national discussion platforms and to materialise in the national qualification roadmaps to be developed under the ongoing BUILD UP Skills initiative, supported by the LIFE.

Methodology

This report goes into great detail and describes the main characteristics of the stock of tools and methods among the members of the BUSLeague consortium and especially of those involved in the task of organising and integrating upskilling activities to stimulate and meet demand for training of construction specialists. Interesting images and detailed instructions for using the tools are explained. The details included in these definitions intend to address the classification of the identified tools particularly, to provide useful information for the intervention designers which would help them to choose certain kinds of tools among others. As so, the identification of space constraints, financial resources, stock disposal, and goals of the action plan for the designers, should serve to guide the decision process towards an optimisation of the resources used for the intervention strategy.

The intergenerational transmission of knowledge and techniques is as old as the notion of society among human beings. This not only exercises permit to conserve the knowledge across the time but to encourage the improvement of the techniques of the enrichment of the knowledge. Borich (2017) summarises the modern strategies for the teaching in 4 big groups: Direct Instruction, Indirect Instruction, Self-Directed and Constructivist Learning and Cooperative Learning. These are elaborated in the main report.

The pedagogical tools listed in the main report are to serve as an example and inspiration for training courses, aiming at describing and illustrating at best the principles of planning and executing energy efficient buildings across the project partners.

Finally, lessons learned is a fascinating chapter which focuses on logistical, financial and effectiveness challenges of using the tools and methods and each country and has a description along the three areas of their experience.

Conclusions

Practical training continues to represent an enormous challenge for both the supply and demand of vocational training and educational services, still struggling to make their way in the mainstream educational systems and in the continuous professional development activities around Europe. However, the increasing demand from the construction sector looking for fast and quality upskilling of the workforce under pressure of time and cost limitations has prompted the development of various training instruments and methods, some of which have proven as extremely successful in the countries represented in the BUSLeague consortium.

¹ Trnka, Georg (2022) AEA Report on training content and resources. Deliverable 4.1 under the BUSLeague project, financed under Horizon 2020 programme of the EU under Grant Agreement No 892894. Available at: https://busleague.eu/wp-content/uploads/D4_1_full_version.pdf



In this respect, the examples from the BAUHAUS chain of stores in Spain, providing a comprehensive learning management system for both employees and clients, and the Practee Formation in France, serving construction-sector SMEs with mobile training and assessment units, are very important, given the fact that they are based on entirely market initiative and are more intriguing again as they do not depend on public financing. In France again, a wide variety of demonstration equipment and small-scale mock-ups have been prepared, which not only helps in training activities, but are also available on commercial basis for potential replicating partners and other training organisations.

Similar equipment is available in Ireland and Bulgaria, supported by public resources – mostly national, in the first case, and international, in the second. In Ireland, the network of fixed training centres under the education and training boards (ETBs operating Centres of Excellence for retrofit and nZEB) are already well integrated in the national qualification framework, providing upskilling courses to tens of thousands of construction sector workers annually. In Bulgaria the developments are still missing scale due to the lack of national-level public support and uptake, even though the collaboration with the professional chambers and the business sector are very promising. In both of these cases, small-scale mock-ups are also available, proving their worth within various teaching methodologies and awareness raising events. What is even more important is the analytical work for connecting the different tools and methods to tasks and learning outcomes defined in the BUSLeague Qualification Framework². This framework provides an excellent opportunity for smooth and unproblematic integration in the national educational systems and training practices of individual educational service providers.

On the other hand, besides the excellent BAUHAUS examples and good practices in Ireland, common activities of training and education providers with DIY stores are still not common and are mostly a one-off action rather than a streamlined campaign, which demonstrates the fact that the business models of these actors still do not coincide and further efforts to exploit synergies are needed. However, the first signs are very promising, as towards the end of the project (2023) the cooperation activities have been increased, resulting in even larger-scale partnerships as the joint event of the Bulgarian partner EnEffect with the biggest commercial centre in the Bulgarian capital Sofia scheduled to mark Earth Day 2023 (21-23 April). With these first big realisations already taking place, it is believed that the preparatory and analytical work done by the BUSLeague project will bring positive results in the years to come.

MORE INFORMATION

The full report of this deliverable can be found on the BUSLeague project website at the following link: <https://busleague.eu/outcomes/>

² BUSLeague project (2021) Qualification for the recognition of energy efficiency skills. Available at: <https://busleague.eu/outcomes/>. Last checked: 28.03.2023

