Evaluation Report on the Educational Perspective

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Related Deliverable:	D5.4

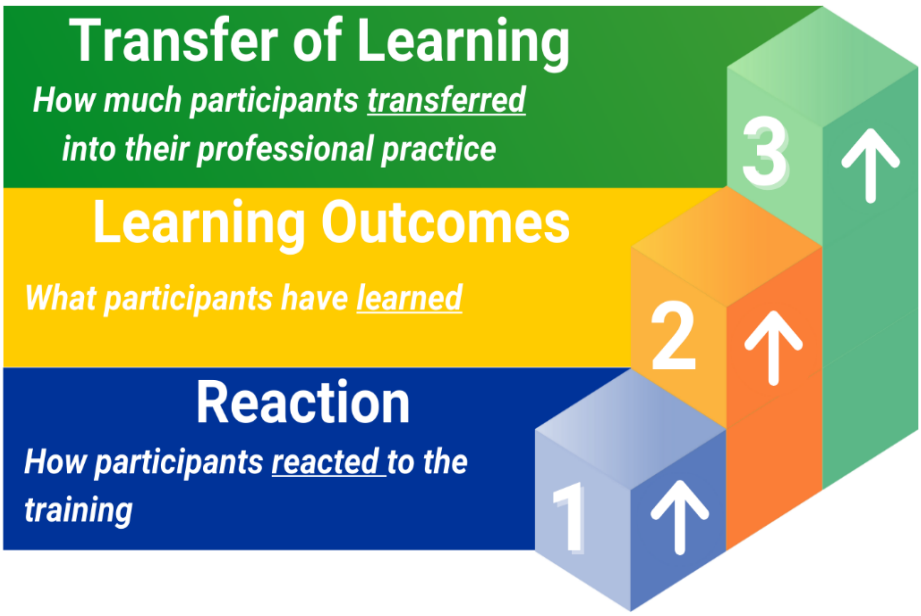

Figure 1 *Evaluation123 3-level model*

This project has received funding from the European Union's h2020 framework programme for research and innovation under grant agreement no 892894.

DESCRIPTION

The BUS League consortium has conducted upskilling interventions or trainings to address the stimulated demand for a skilled workforce in the energy transition. To design interventions for these activities and evaluate their effectiveness, it is important to identify what learning outcomes want to be addressed and what learning outcomes have been achieved.

Aside from their positive impact on self-regulated professional learning in terms of the informed selection of trainings and design of suitable trainings, only the focus on learning outcomes allows developing evaluations for acquired knowledge and skills, respecting the trade-off between evaluation benefits and efforts, and sharing resulting evaluation practices.

In the analysis of effectiveness and timeliness from the educational perspective, not only the objective learning outcomes and triggers are considered, but also the experienced outcomes: how were participants motivated, did they experience the intervention help them to progress and how did they integrate what was learned in their current practice?

However, the construction and building domain is missing an easy to use step-by-step guidance that considers evaluation goals as well as context and that makes accessible evaluation of effectiveness as well as timeliness from the educational perspective.

Therefore, in collaboration with the BUS League consortium, we designed the EVALUATION123 to guide the evaluation of use and outcomes of upskilling interventions. It consists of an evaluation framework suitable for a broad variety of interventions and a toolset to support its self-directed application. Aside from informing evaluation and respective guidance, the EVALUATION123 raises awareness about benefit and use of learning analytics and paths.

This report includes three chapters to explain the point of departure for effective evaluations, the co-design of support means and the achieved insights:

1. Overview of how upskilling interventions currently record learning outcomes and what research recommends in terms of understanding and measuring upskilling.
2. Guide the design and implementation of evaluations of upskilling interventions to support training providers.
3. Demonstrate evaluation designs and insights of selected interventions to inspire future evaluations in the energy transition.

MORE INFORMATION ABOUT THE EVALUATION123 TOOLKIT

The full version of this deliverable can be found on the BUS League project website at the following link: https://busleague.eu/outcomes/. The full reference guide and toolset can be accessed via the following Google Drive Link and copied for use and adaptation: https://drive.google.com/drive/folders/1sKn0ZBdj__neC8BdCpqW_d9NcabfCrM3.

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OTHER PICTURES

Measuring educational effectiveness: level 1 (reaction to training)

Items on level 1 of educational effectiveness of training to be scored by TRAINEES								
1.1	Satisfaction with training (Cunningham, 2007, slightly adapted to better match target group)	Not satisfying at all	Not satisfying	Neutral	Satisfying	Very satisfying	Not relevant	Unknown
	Mastery experiences							
	The opportunity to learn new skills							
	The degree to which I improved on particular skills							
	How much I learned about how to perform better in this activity							
	My improvement in performance							
	My opportunity to practice new skills							
	Cognitive development							
	What I learned concerning the technical aspects of the activity							
	How much I learned about the various strategies used in performing the activity							
	What I learned about the basic content of the activity							
	The knowledge about the fundamentals of the activity I have gained							
	The extent to which I learned the essential concepts of the activity							

Measuring educational effectiveness: level 2 (learning from training)

Items on level 2 of educational effectiveness of training to be scored by DESIGNERS OF TRAINING OR TRAINERS								
2.1	How it is assessed	Not applicable at all	Not applicable	Neutral	Applicable	Strongly applicable	Not relevant	Unknown
	Trainees are assessed by (pre and post) knowledge testing (performed by trainees themselves)							
	Trainees are assessed by (pre and post) skills observation (performed by trainer, manager or researcher).							
2.2	Level of learning (Bloom (Oliver et al. 2004; Bloom)	Not applicable at all	Not applicable	Neutral	Applicable	Strongly applicable	Not relevant	Unknown
	After the training, trainees are able to remember (i.e. recall facts from the training material).							
	After the training, trainees are able to comprehend (i.e. understand, translate, and interpret the training material material).							

Measuring educational effectiveness: level 3 (change in behaviour due to training)

Items on level 3 of the educational effectiveness of training to be scored by DESIGNERS OF TRAINING OR TRAINERS 1 month/3 months/1 year after training								
3.1	How it is assessed	Not applicable at all	Not applicable	Neutral	Applicable	Strongly applicable	Not relevant	Unknown
	The trainees' transfer of skills (depending on the topic of the training) to the workplace is assed by *observations* in the workplace (performed by trainer, manager or researcher).							
	The trainees' transfer of skills (depending on the topic of the training) to the workplace is assed one month after the training by *log/ user data* in the workplace (that is automatically generated).							

Figure 2 *Rubric for the evaluation framework - Excerpts of evaluation level 1, 2 & 3*

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	Abilities	Description of category
Conceptual Knowledge	**Recognize** and **retrieve** relevant **knowledge** **Constructing meaning** from instructional messages	Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas.
Procedural Skills	**Carry out** or **use** a procedure in a given situation	Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.
Analytical Thinking	**Breaking down** information into **component parts** and their **relation** **Making judgements** based on **criteria** and **standards**	Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria.

WHEN	WHO	SELECT	Conceptual Knowledge	WHAT
After the training	*participants*	*will be able to*	calculate	the energy efficiency coefficient of a building.
After the training, participants will be able to calculate the energy efficiency coefficient of a building.				

Figure 3 *EVALUATION123 - Learning Goals Tool*

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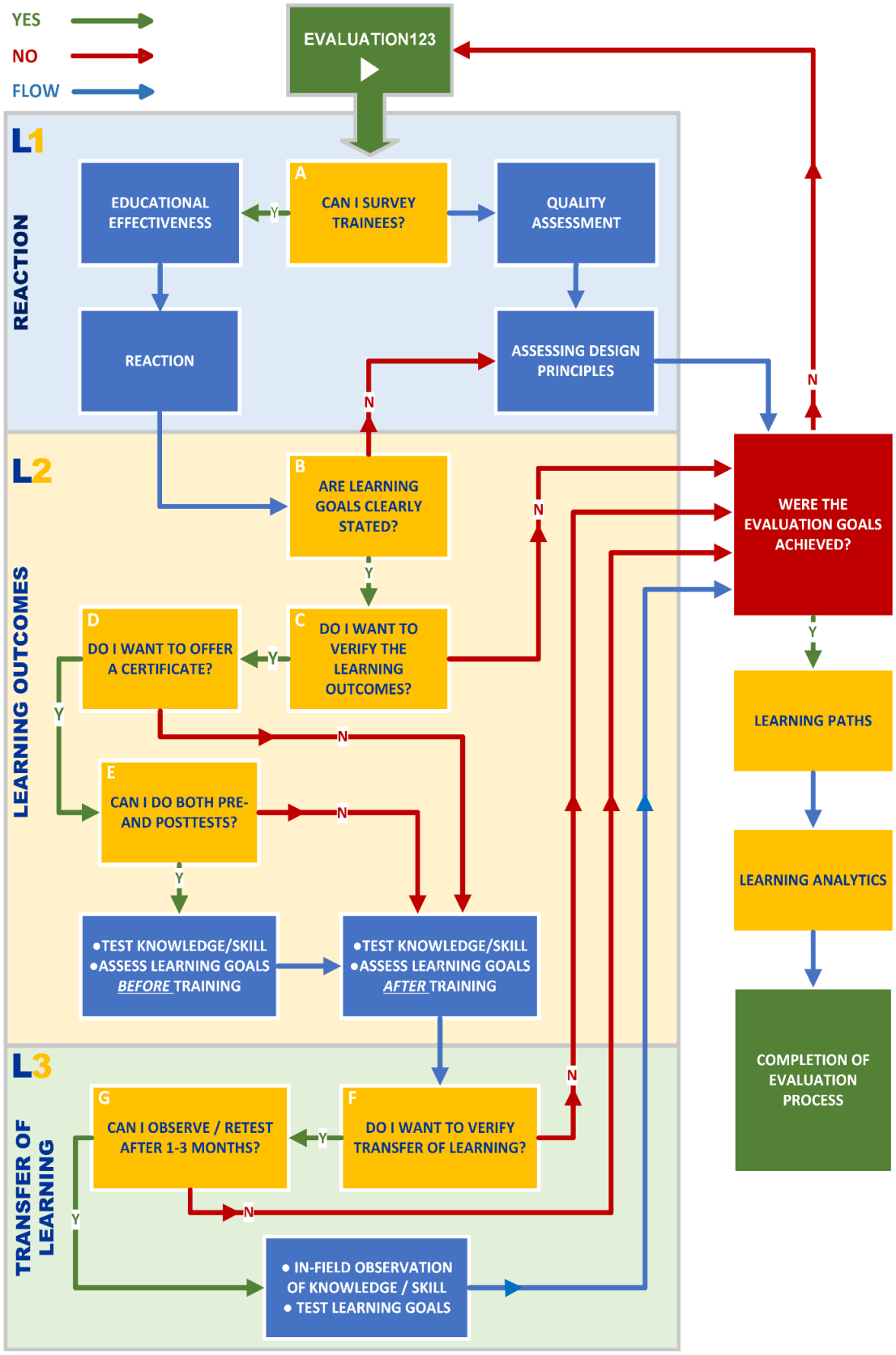

Figure 4 *Evaluation123 - Decision Tree*

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