



New Qualifications and
Competencies in TVET

LearnIT

Submitted by **CENFIM, Portugal**

BILT Innovation and Learning Practice



For individuals in the workforce who want to access additional or continuing training, options that allow for flexibility in terms of when, where, and how to study are increasingly sought after. Employers too seek attractive training solutions that offer suitable training times for their employees. For TVET training providers to capitalize on this, offering individualized learning options allows participants to manage their personal and professional commitments and satisfies the requirement of industry for customized training. One such example is the Learning Tools and Routes for Individuals (LearnIT) initiative at CENFIM, in Portugal. LearnIT provides individual learning approaches for trainees in the metal sector that utilize a shop floor concept to simulate environments that replicate real work situations.

- Start date: 01/2015
End date: 06/2017
- Type of implementing institution:
Governmental Organization or affiliated
- Target group:
Adults, particularly people in the metal sector, and youths

CENFIM, Portugal

CENFIM is a vocational training centre for the metallurgical and metalworking industry in Portugal. It promotes the vocational training, orientation and professional enhancement of adults and youths in the metallurgical, metalworking and electromechanical sectors.

Description of activities

The Learning Tools and Routes for Individuals (LearnIT) project individualizes training in the field of Computer Numerical Control (CNC). This is realized by building new shop floor spaces with individual 'Learning Spots' where trainees at different stages of learning, with different learning styles and paces can share the same physical context. Additionally, all associated didactic resources were redefined to allow for a more autonomous learning process.

Key elements include:

- Rebuilding of shop floor layouts based on 'Learning Spots'
- Development of Information Technology tools for shop floor availability scheduling and tracking of activity
- Trainers' pedagogical preparation and support
- Redesign of CENFIM's training in the metal sector based on learning outcomes
- Development of teaching contents and resources

The project was originally financed by the Erasmus+ KA02 Programme. Once complete, the development and effective implementation of the outcomes continued due to CENFIM's internal support effort.

Added value

What current challenges does your initiative address?

Increasingly, trainees in continuing and lifelong learning are seeking options that offer more flexibility for how, when, and where their studies are completed. Offering individual learning approaches allows TVET providers to cater to the needs of each trainee so that time, availability, and content are adapted to the background and knowledge of the individual.

Why is this initiative a success?

As of the end of 2019, CENFIM has transferred the project results to six of its training centres, undertaking the

physical and didactic implementation of these shop floors. One hundred individuals are trained and certified in a one-year period. The expectation is to double this number in 2020 as companies become more aware of this opportunity. Currently, three additional individual training projects are running in new technical fields at CENFIM, namely Metrology, Welding, and 3D Printing, so it is foreseeable that the scope and impact of this project will increase further. Importantly, participant feedback is extremely positive concerning satisfaction and acceptance by the professionals and companies of the sector.

One major lesson learnt is that human resources allocated to the training are crucial for such projects. The new methodology forces trainers to leave their comfort zone and to adapt to new ways of conducting training.

What is the added value of this example?

The project improves practical learning in programming, setup and operation of CNC industrial machine tools. People with this qualification are in high demand in the metal sector, as this requires a high level of technical skill and competency.

Additionally, individualized learning contributes to raising the attractiveness of lifelong learning and training. The learning resources developed with this project include digital content, self-assessment and shared assessment environments, project-based activities, and self-guided learning opportunities. All of these make learning truly more exciting, as confirmed by all trainees. The new learning resources are not tied exclusively to the shop floor learning environment but can also be used in traditional training contexts.

Impact on curricula

What implications does this example have for current or future curricula?

Within the project, the implementation of CENFIM's training was re-designed based on learning outcomes. Because this is implemented only by CENFIM, the project does not interfere with national curricula or training regulations.

While individuals can build their own learning paths on the training shop floor, traditional courses, such as group approach and pre-defined schedules, continue to be delivered at CENFIM on the same theme of CNC and with the same level of qualification.

How does this example impact TVET systems?

The results of this project are implemented on a national scale at the different sites of CENFIM. At a systemic level, the situation is different, as most of the national

qualification standards do not yet follow the concept of learning outcomes that underlies the design of this project. It is therefore necessary to update national qualification standards to allow for a smooth application of this type of approach on a systemic level.

How does this example respond to industry and social demands?

The motivation of this project was to find appropriate responses to current industrial and individual training needs. Importantly, the main deterrents to accessing training is lack of time or resources of learners, particularly when it comes to the active population who are already in employment. As industry is interested in employees with modern qualifications, access to training can be facilitated with individualized training.

Transferability

Which components of this practice may have practical value to other UNEVOC Centres/TVET institutions?

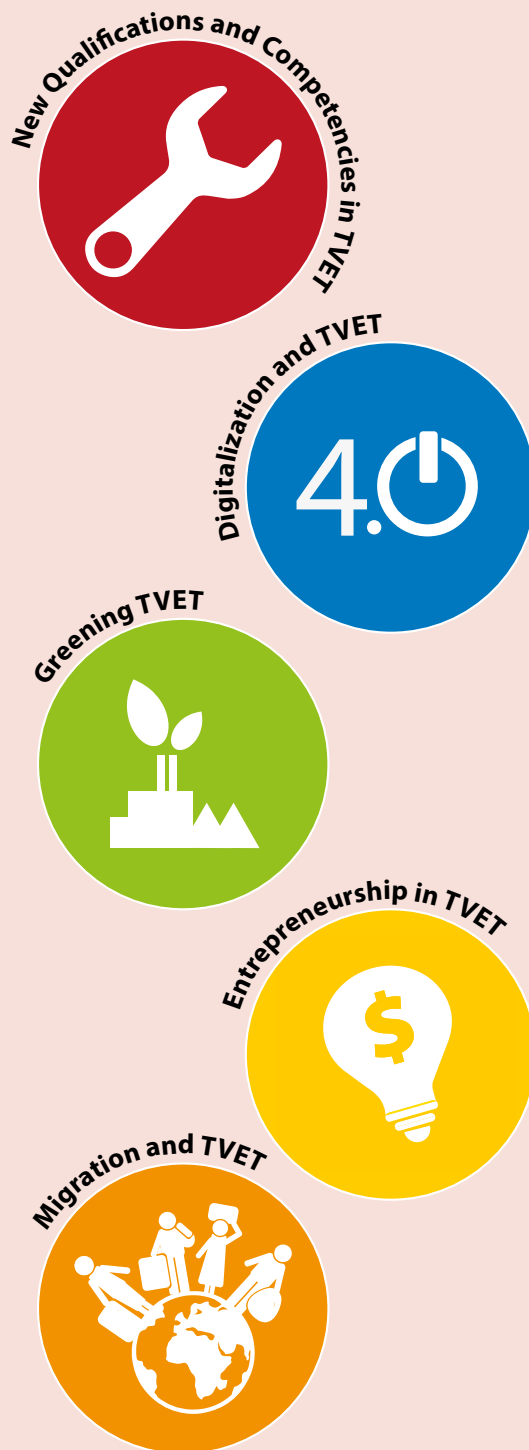
The resources and content developed in LearnIT are exclusively for training in Computer Numerical Control. However, a component transferable to every type of TVET programme is the pedagogical individualized approach. Additionally, the concept of 'learning spots' with accompanying learning resources related to specific learning outcomes or the IT tools to track the trainees and to manage the availability of the shop floor are transferrable elements.

What challenges do you see if transferred to another context?

It is important to note that such an intervention implies a drastic reorganization of training, refocusing it to learning outcomes and new assessment criteria. It also requires new training resources and training of trainers as well increasing their motivation. The participation of trainers involved in everyday training activities is crucial to develop such a project. Finally, some organizations might be more dedicated to the teaching practice, while this project requires a lot of work in conceptualization and development.

Part of the BILT project involves collecting Innovation and Learning Practices that address systemic challenges within the five work streams of the project, with the purpose to understand what elements lead to their success and can be transferrable to other contexts.*

Access more BILT Innovation and Learning practices in the thematic areas of:



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 - For more information about this practice:
www.cenfim.pt/project/show/377.html?id=377

*UNESCO-UNEVOC does not endorse any of the practices included in this database and is not responsible for their management or implementation.



The Bridging Innovation and Learning in TVET (BILT) project provides TVET stakeholders with a platform for exchange and supports them to address current challenges in TVET systems, which arise due to technological, social, environmental, and workplace changes.

Within BILT, the overarching thematic area is New Qualifications and Competencies in TVET, which is supported by four work streams:

- Digitalization and TVET,
- Greening TVET,
- Entrepreneurship in TVET, and
- Migration and TVET.

Through regular knowledge exchange, thematic project activities, and expert working groups, BILT offers opportunities for collaboration between UNEVOC Centres and TVET stakeholders in Europe, and a platform for bridging of innovation and learning between European UNEVOC Centers and TVET stakeholders in the Asia-Pacific and Africa regions.

The results of ongoing activities are accessible on BILT's web page and will be disseminated during a BILT Learning Forum.

The BILT project is carried out in collaboration with UNEVOC Network members, coordinated by UNESCO-UNEVOC with support of the German Federal Institute for Vocational Education and Training (BIBB), and sponsored by the German Federal Ministry of Education and Research (BMBF).

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