Practical application of theoretical courses

Problem statement

Addressed problem: Unmet expectations of practical training in vocational programmes

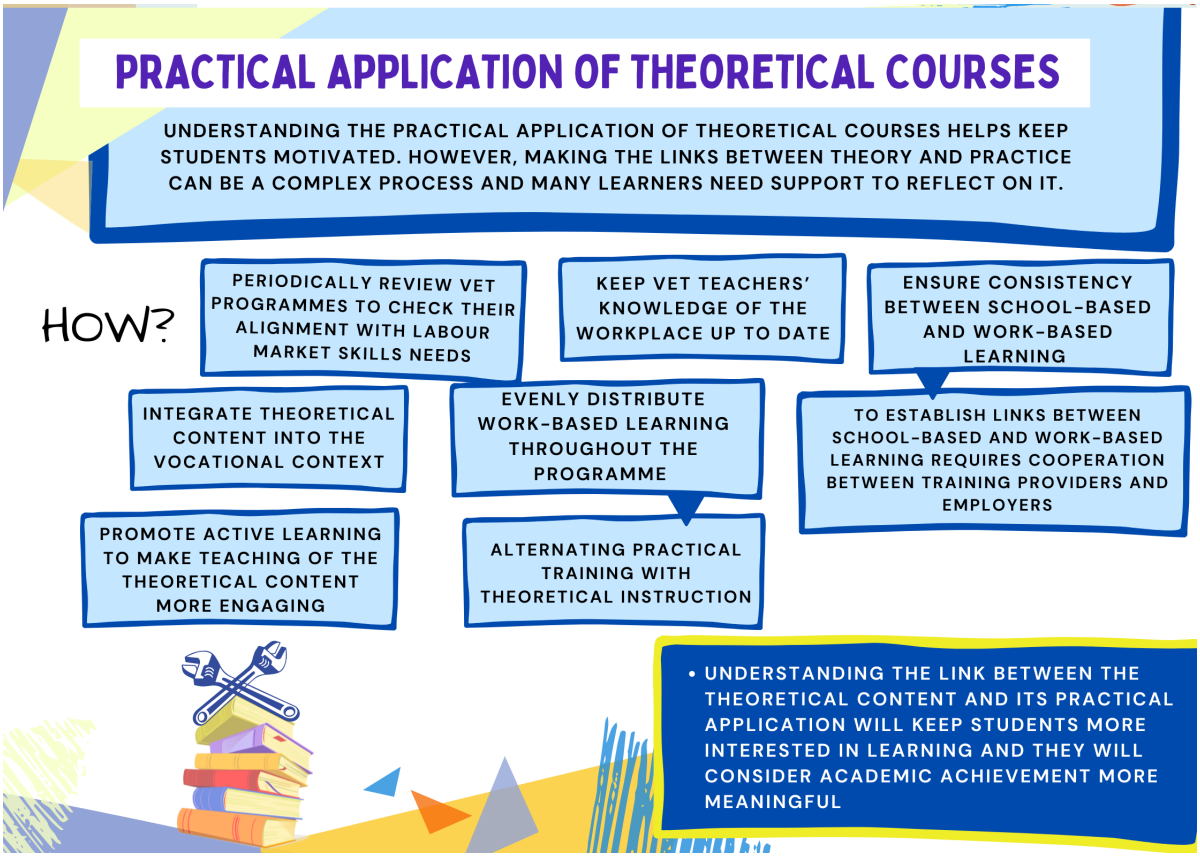
When young people choose a vocational programme, they expect learning to be practical, hands-on, and closely linked to real work. They want to develop skills that are directly relevant to a profession and valued by employers.

If these expectations are not met, learners can become demotivated and may eventually drop out. This can happen if the training content or equipment is outdated, or if students do not see how theoretical knowledge applies to real-world tasks.

Students are often discouraged when vocational programmes emphasize theoretical or academic subjects over practical learning. However, theoretical content cannot be eliminated entirely from VET programmes because:

- Vocational programmes aim to develop key competences and foundational skills that are necessary across professions.
- Technological advances have changed the nature of work, making many tasks more abstract or computer-based, which requires a stronger theoretical understanding.

Supporting students to understand and experience the practical application of theoretical courses helps maintain motivation. Linking theory to practice can be challenging, so learners often need guidance and structured support to make these connections meaningful.



Beneficiaries

- **Learners at risk of early leaving from education and training**
- **Learners who lack employability skills**
- **Low-performing learners**
- **VET students (school-based learning)**
- **VET students (work-based learning)**

A strong alignment between the skills acquired through VET and those required in the labour market is important for all learners. Equally, it is crucial that the connection between theoretical knowledge and practical application is clear. Learners who struggle with academic subjects often benefit most from seeing how their studies are applied in real-world contexts and understanding the purpose of their efforts.

Addressing the problem

Tips: How can we strengthen the links between theory and practice?

The following tips are offered to policy makers and practitioners involved in the design and delivery of VET measures. The information is based on Cedefop research into successful measures.

Tip 1: Continuously align VET programmes with labour market needs

VET programmes should be periodically reviewed to ensure that the knowledge and skills being taught are relevant to employers. Cooperation with employer associations and workplace representatives is essential in defining intended learning outcomes and required competences when updating curricula.

Programmes should integrate, among other, green skills and sustainable education as well as new technology, digital skills, and AI literacy to reflect the evolving demands of the twin transition in the labour market.

Clear communication of programme relevance helps learners make informed choices and remain motivated throughout their studies.

Tip 2: Keep VET teachers' skills and industry knowledge up to date

VET teachers must understand evolving labour market and skill requirements and incorporate them into teaching. Continuing professional development (CPD), upskilling, and exposure to current workplace practices are crucial.

Teachers should have opportunities to visit companies, accompany learners during work-based training, and observe how digital tools and AI are applied in real work environments. This ensures that theoretical concepts are demonstrated using up-to-date, practical examples. AI and digital tools can also be used as pedagogical allies, helping teachers to effectively bridge theory and practice.

Structured partnerships between VET schools and companies are a proven mechanism for keeping teachers' knowledge current. Research by Cedefop shows that most European countries have established formal links (e.g. agreements or contracts) between schools and companies providing work-based learning. These partnerships are most effective when they include active teacher participation: visiting enterprises, co-assessing learners, and collaborating with workplace mentors on curriculum delivery.

Beyond visits and placements, some countries have gone further by institutionalising 'hybrid teacher' models, where professionals work simultaneously in a VET institution and a company. This model ensures that industry knowledge is continuously renewed rather than periodically refreshed. The development of dedicated CPD frameworks and incentives to support such hybrid roles is indispensable to strengthen the sustainable integration of industry expertise within VET systems.

Tip 3: Cooperate with employers to link school-based and work-based learning

Strong collaboration between training providers and employers ensures a coherent learning pathway. Employers should be involved in designing and implementing training, defining intended learning outcomes, and coordinating practical activities.

Digital platforms can support this cooperation by enabling co-creation of simulations, virtual projects, and learning activities that integrate school theory with workplace practice.

Tip 4: Integrate theoretical content into the vocational contexts

Integrating theoretical and academic content into vocational training makes learning complete and meaningful for young people. This can be achieved by connecting theory to real or realistic work tasks, for example:

- Using authentic materials: Demonstrate theoretical concepts through practical work with relevant instruments in a laboratory or state-of-the-art workshops with advanced technologies.
- Using authentic contexts: Conduct learning at workplaces or outdoor environments that replicate real tasks, such as farms, workshops, or company sites.
- Working for real clients: Involve learners in delivering products or services to external customers or beneficiaries, such as NGOs.
- Using VR/AR simulations: Create immersive, realistic scenarios where students can apply theoretical knowledge without leaving the classroom.
- Structuring activities like workplaces: Organize tasks so groups of students assume roles of different departments in a simulated organisation.

These approaches help learners see the practical application of theory, engage actively with their learning, and increase motivation.

Tip 5: Distribute work-based learning evenly throughout the programme

Vocational programmes that deliver most theoretical content before learners experience practical tasks can be demotivating. Alternating practical training with theoretical instruction throughout the programme helps maintain engagement and reinforces learning.

Health and safety content must be covered before learners begin any workplace experience.

When physical placements are not immediately feasible, digital simulations and AI-based exercises can provide hands-on practice and prepare learners for real-world tasks.

Tip 6: Promote active learning and interdisciplinary projects

Learners are more motivated when they actively construct knowledge rather than passively receive it. Methods include:

- Project-based and problem-based learning: Learners identify problems, explore solutions, and apply theory in practical projects.
- Adaptive instruction: Tasks are tailored to learners' level of understanding and ability, supported by AI-powered platforms.
- Interdisciplinary projects: Combining skills from different subjects reflects real workplace challenges.
- Active learning encourages collaboration, critical thinking, and engagement while making theoretical content more relevant.

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Tip 7: Provide support for learners with weak basic skills

Some learners struggle with theoretical content due to limited literacy, numeracy, or digital skills.

Support should be tailored to the learners' needs. Some may benefit from pre-programme interventions, helping them develop the basic skills needed to follow the curriculum. Others may require ongoing support throughout their studies, which can be delivered through mentoring, tutoring, or embedded learning activities. Providing this support helps learners engage more fully with the programme and improves their chances of successful completion.

Tip 8: Build soft skills and professional habits alongside technical skills

VET programmes should explicitly develop teamwork, communication, problem-solving, and time management skills. Integrating these competences across school and workplace activities enhances employability and ensures learners are ready for real-world professional contexts.

Tip 9: Facilitate workplace mentoring

In addition to school-based support, workplace mentors help learners navigate real-world work contexts. These mentors provide guidance on professional behaviour, task execution, and problem-solving, reinforcing the link between

theoretical knowledge and practical application.

Tip 10: Offer opportunities for feedback, reflection, and assessment

Regular feedback on both theoretical understanding and practical performance is critical. Structured reflection sessions, using journals, digital portfolios, or group discussions, help learners make explicit connections between classroom content and workplace practice.

Continuous evaluation ensures that VET programmes remain relevant and responsive to learners' needs, while providing data for iterative improvements.

Tip 11: Ensure flexibility to adapt to individual learners

Learners progress at different rates in theory and practice. Flexible scheduling, blended learning, and modular course design allow students to consolidate knowledge without losing engagement. Personalized approaches, supported by AI tools, can address individual needs while maintaining alignment with programme goals.

Expected outcomes

Connecting theoretical content to practical application helps learners see the relevance of their studies, making learning more engaging and meaningful. Learners are encouraged to recognise achievements that have practical value, which can improve motivation, self-confidence, and long-term commitment to education and training. Exposure to real work environments and digital tools also strengthens employability skills and career readiness.

The following outcomes can be expected at different levels:

INDIVIDUAL	INSTITUTIONAL	SYSTEM
• Positive attitude toward learning and education and training • Greater self-confidence and awareness of own abilities, aptitudes, and interests • Higher motivation through seeing practical application of theoretical concepts • Enhanced ability to create realistic and informed career plans, thanks to exposure to workplace settings • Development of versatile skills combining theoretical knowledge, practical competences, and digital literacy • Improved problem-solving, teamwork, and communication skills • Improved understanding of the purpose of theoretical content	• Stronger collaboration channels between VET providers and employers • Programmes reorganised to better respond to learners' needs • Programmes more attractive to learners, leading to higher participation and retention • Higher teacher satisfaction due to upskilling and professional development, including AI and digital tools • Modernised curricula that reflect both learner and employer needs • Improved capacity to provide personalised support through mentoring, tutoring, and workplace guidance • Enhanced capacity for digital and AI-enhanced learning	• Introduction or improvement of mechanisms to involve employers and social partners in the design of vocational programmes • Improved mechanisms for employer and social partner involvement in VET programme design • Increased relevance of VET curricula to labour market and learner needs • Higher learner participation rates • Increased completion rates and reduced drop-out rates • Greater alignment between education outcomes and labour market requirements • Stronger integration of digital tools and AI in VET at the system level • Higher employability and smoother transitions to work or further education

Related protective factors

Theoretical content linked to practical training in the vocational context

Related resources

Good practices

Good practice

ASLAM Cooperativa Sociale

The Italian cooperative ASLAM (VET provider) seeks to respond to the skills needs of the companies in the region of Alto Milanese, by closely cooperating with them.

Italy

Publications

Publications

Guidance for generative AI in education and research - UNESCO

Towards a human-centred approach to the use of generative AI

UNESCO’s first global guidance on GenAI in education aims to support countries to implement immediate actions, plan long-term policies and develop human capacity to ensure a human-centred vision of these new technologies.

EU level International

Publications

Engaging Young People? Student Experiences of the Leaving Certificate Applied Programme

A research study on the Irish Leaving Certificate Applied programme found that the main reason for students taking the programme was wanting to take more practical subjects.

Download the report here.

Ireland

Publications

Skill shortages and gaps in European enterprises

A Cedefop study recommends

Publications

Beyond academics

Linking teaching practices in Swedish schools to students’ achievements and

A Cedefop study recommends companies to cooperate with education and training institutions and participate in curriculum design as a way to tackle skills gaps. Download the report here.

EU level

mental health complaints

This research on teaching practices in Swedish schools reveals varying effects of teaching practices on students' academic success and mental well-being. The paper reviews the effects of three different teaching styles, teacher-centred, student-centred, and student-dominated.

Sweden

Publications

Intra-EU labour mobility

Annual report (Edition 2024)

The report highlights an increasement in working-age EU movers in 2023, who generally have higher activity and employment rates compared to nationals and third-country nationals.

EU level

Publications

The untapped potential of disadvantaged young people for apprenticeships in skilled trades

ILO Working Paper exploring barriers and opportunities in apprenticeship completion and skilled trades integration

This ILO working paper explores why socially disadvantaged young people are more likely to drop out of apprenticeships in certain skilled trades, identifying factors linked to poor retention and limited employability.

International