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Steel industry’s training & skills challenges: the responsiveness of VET

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Steel 4.0 skills needs

- Increased importance on process/systems knowledge stemming from increasingly integrated production processes and use of digital technologies
- Increased importance of soft skills (communication skills, assertiveness, teamwork, are highly valued)
- Digital skills - - Green Skills: Twin Challenges
- Robust technical skills, better if coupled with IT
- Holistic approach to occupational training, requiring workers to have ‘wider and more adaptable skillsets’ (T-shaped skills)
- Incorporation of on-the-job training (placements or apprenticeships)

VET trends in Europe

- Strengthening the ties between IVET and the labour market (involving employers more in the design of the qualifications)
- Relaunching apprenticeships as a way to anchor training to actual jobs (e.g., ‘duality’)
- Broadening courses contents to equip learners with more transversal skills
- Extending and strengthening IVET provision at post-secondary and tertiary level

VET responsiveness: impulsive & adaptive

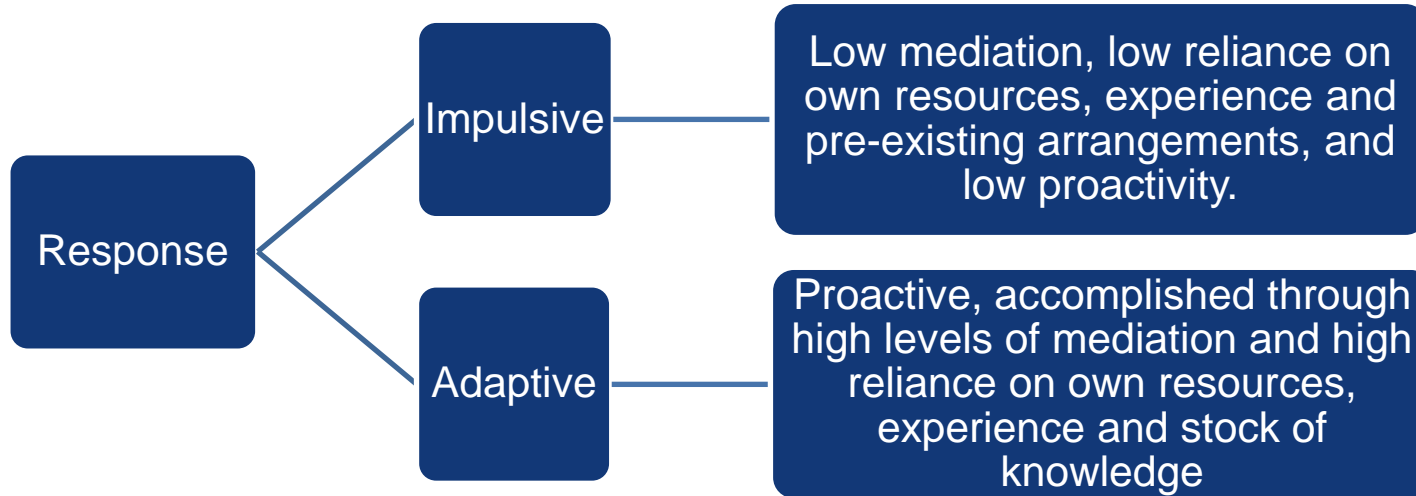
- Functionalist approach: VET as a sub-system of the social system.
- Produce knowledge, skills and competencies needed to act in different domains of society (focus on production here)
- The type and scope of responses feed back to the capacity of VET to fulfill its functions

VET responsiveness: impulsive & adaptive

Response: *Impulsive vs Adaptive*

1. **Mediation:** will or capacity to translate exogenous pressures into a national agenda, selecting a response strategy among many possible. Proactively anticipate potential challenges. Define a trajectory of societal change.
2. **Optimisation:** systematic learning, rather than ad hoc solutions. Problems are confronted building on one's own resources, experience and stock of knowledge, and pre-existing arrangements.

VET responsiveness: impulsive & adaptive



VET is embedded in a **wider institutional context** (industrial relations, labour market etc.). The way VET responds also depends on how the broader environment conveys and supports such responses

IVET focus

IVET is **foundational**: aim is to offer an analysis of the preparedness of VET for providing the steel workers of the future with skills that will help them to meet the requirements of Industry 4.0 and navigate further transformation.

- IVET should deliver solid and wide competencies on which companies can build further, specialist skills.
- IVET should provide a solid basis of competencies which enhances the adaptability and resilience of the workforce.

A close up: VET reforms in Germany

- In 2018, completed review and update of the curricula for 11 metalworking and electrical qualifications to meet the new industry and market challenges
- Introduced new 'Module' on 'Digitalisation of work, data protection and information security'
- Skills gaps related to digitalisation and environmental sustainability have been tackled in dual apprenticeships by introducing new 'standard modules' and by updating existing modules on labour law and collective bargaining, as well as on occupational health and safety. Coming to effect August 2021

A close up: VET reforms in Italy

- Post-secondary level, new higher technical training programmes (ITS) established in 2008. Designed to have strong links with companies and to keep into account the industrial characteristics of the Regions.
- In 2015, established the opportunity for learners to obtain a secondary vocational qualification or a diploma in a dual-mode
- Vocational schools' curricula updated in 2017
- IVET profiles (IeFP) updated and integrated in 2019 after a two-years review process

A close up: VET reforms in the United Kingdom

- Since 2015, apprenticeship frameworks being replaced by new standards developed by sectoral panels of employers, which are occupation-focused (rather than qualification-led) and combine on-the-job training and study
- Since 2017, development of new technical study programmes, T-levels, aiming to simplify and relaunch the national (England) IVET. T-levels are based also on the same standards as apprenticeships.

Implications for workforce development

Liberal/market driven
systems: tendency to
produce impulsive
responses

Risk of low engagement of
employers and/or workers

Risk of scarce recognition of
standards

Undermining overall recognizability
of the system

Risk of occupational dead-ends

Implications for workforce development

Coordinated systems:
tendency to produce
adaptive responses

Changes to curricula are recognised
nationwide

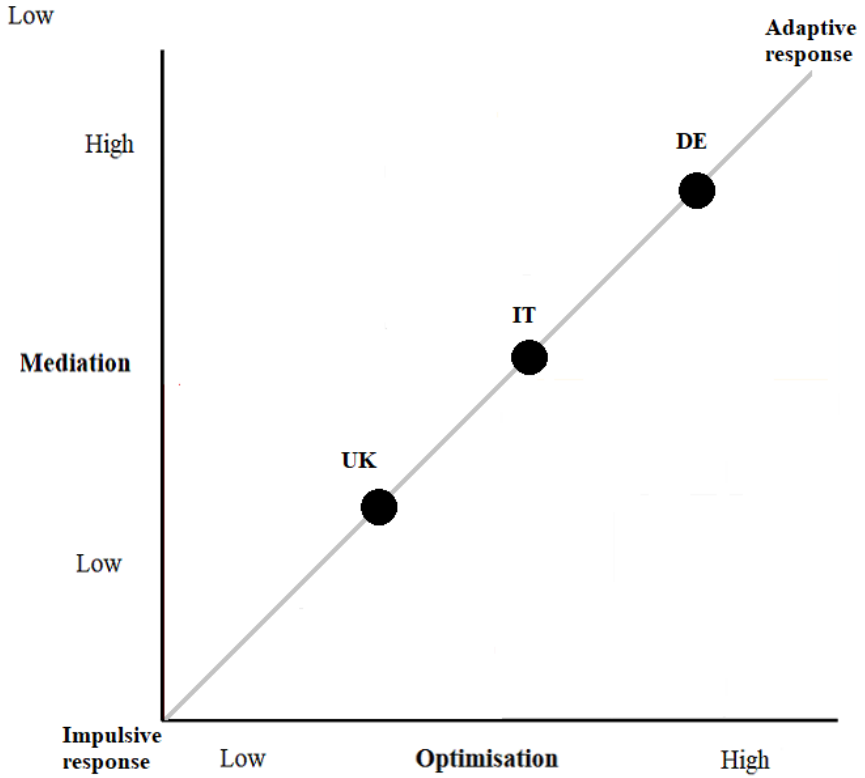
System consistency preserved

Longer-term time frame of curricula
and programmes

Convergence of interests

Consolidation of qualifications within
occupational families

Response model



Implications for workforce development

14.0 requires an IVET capable of intervening on the whole spectrum of occupational profiles, updating and upskilling them to meet new challenges and navigate further industrial transformation.

- **Impulsive VET responses** might address shorter-term business needs and risk undermining the perceived value of VET (e.g., producing dead-ends, low-quality training, low trust)
- **Adaptive VET responses** seem to provide stronger grounds for tackling prospective challenges (e.g., consolidating the system, enhancing trust, establishing a positive feedback loop between employers-workers-providers)



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