

# RUTGERS

School of Management  
and Labor Relations

**EDUCATION AND EMPLOYMENT  
RESEARCH CENTER**

## LESSONS FROM EUROPE:

Shaping Career and  
Technical Education for  
the Future of Work





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## Importance to Future of Work and Workers/Technicians

- Technicians and other vocationally trained workers are and will continue to be key players in the changing nature of work and economic growth
  - Firm-and regional level innovations
  - Practical implementation of research and technology (Barley, 1996)
- How are states, employers, unions, providing vocational training?
  - States include school systems of both secondary and tertiary VET
  - What models work well (or could) that should be shared and built upon
- Not the first to do this
  - MIT Task Force on Work of the Future

## Looking to the EU

- Discussion and theory of EU VET based on Comparative Political Economy (CPE) (e.g., Varieties of Capitalism)
  - Revisiting the ideas of applying these models (or practices from them) outside of more coordinated market economies
- Move away from technological/market deterministic approach to skills development for the future
  - More attention towards a socially grounded system that directly involves and connects relevant stakeholders (Future of Work and Workers, MIT Task Force, etc.)
- Normative argument: what models work, or can be adapted to work, that can be effective for US CTE targeted at a broad range of workers (e.g., technicians)
  - Practices from these models may be feasible on a more local level

## The Study

- Focus on 6 EU countries: Austria, Denmark, Finland, France, Germany, and Spain
- Questions around structure VET system structure, providers, pathways to work and education
- What should be highlighted for future application, and adapted to prepare technician workforce for future of work?
- Extensive literature review on VET, Career Technical Education, Advanced Technological Education, technician training, etc.
- Interviews with at least one or more experts and researchers on VET from each country (e.g., faculty, state/local government representative, VET school representative; 11 total)

# EU VET IN CONTEXT: STRUCTURE, CONTENT, AND DELIVERY

**Institutional differences, recent policy changes, and future of work challenges for EU VET systems**

## Institutional Differences Across EU & U.S. Systems

- EU Vocational Education and Training (VET) more centralized and coordinated between key stakeholder social partners (State, Employers, Union and other Institutions)
- Provides flexibility for broad changes and adaptability as partners are part of the upfront process and help coordinate implementation
- U.S. liberal system emphasizes specialized training through competitive markets (e.g., community college, internships, employment), rather than institutional coordination
  - Quick employer innovations but training and other stakeholders may fall behind; employer investment in skills for workers limited
- Differences are important in the context of the future of work.

# Skill Formation Classifications Based on Countries' Primary Approach to Curriculum Development & Implementation

	Primary Approach to VET Development and Implementation	Skill Formation System <sup>1</sup>
<b>Germany</b>	Dual System (Employer-based)	Collectivist
<b>Austria</b>	Dual System (School-based)	Collectivist
<b>Denmark</b>	Dual System (School-Based)	Collectivist
<b>Finland</b>	Flexible State/School System	Statist
<b>Spain</b>	State/School System	Statist
<b>France</b>	State/School System	Statist

<sup>1</sup> Busemeyer, M. & Trampusch, C. (2012). The comparative political economy of collective skill formation. In M. Busemeyer & C. Trampusch (Eds.), *The political economy of collective skill formation* (pp. 1–38). Oxford University Press. <https://dx.doi.org/10.1093/acprof:oso/9780199599431.003.0001>.



## The US and Liberal Skill Formation System

- Market-Based
- General skills obtained in K-12
- Specialized skills obtained through community/vocational colleges, internships, and employment
  - Employer reluctance to invest in skills that can be used elsewhere
  - Training generally seen as a cost to minimize
- Limited coordination between state, employers, and other institutions (e.g., unions)—employers generally avoid unions and leverage employment at will
- Balance of power between employees and employers skewed heavily towards employers
  - Shrinking union density and worker voice
  - Implies reliance on individual, market-based, and potentially precarious VET opportunities

## The Significance of Employer/Worker Balance of Power (and State Support)

	Union Density (% of Workers that are Members of a Union as of 2018) <sup>2</sup>
Austria	26.3%
Denmark	67.5%
Finland	60%
France	8.8%
Germany	16.6%
Spain	13%
United States	<b>10.1%</b>

<sup>2</sup> OECD. (2021). *Institutional characteristics of trade unions, wage setting, state intervention and social pacts (ICTWSS)* [Data set]. OECD. <https://stats.oecd.org/index.aspx?DataSetCode=CBC>.

## Continued: The Significance of Employer/Worker Balance of Power (and State Support)

	Collective Bargaining Coverage (% of Eligible Workers Under a Bargained Contract as of 2018) <sup>2</sup>
Austria	98.0%
Denmark	82.0%
Finland	88.8% (2017)
France	98.0%
Germany	54.0%
Spain	80.1%
United States	<b>11.7%</b>

<sup>2</sup> OECD. (2021). *Institutional characteristics of trade unions, wage setting, state intervention and social pacts (ICTWSS)* [Data set]. OECD. <https://stats.oecd.org/index.aspx?DataSetCode=CBC>.

## Implications of Stakeholder Power Balance/Imbalance

- Significant social dialogue and bargaining between labor and employers at industry, sectoral, and organizational levels influences employee and union voice in wages, the development and implementation of vocational training, equitable skill distributions
- Stronger in EU than in US—providing more dynamic and multidimensional implementation of VET
- US employers generally avoid this dialogue and coordination, and are able to increase skill demands without necessarily paying higher wages or offering training
- Bargaining and coordination that is done in US is primarily at firm level and thus does not necessarily have wide impact

## Great Recession & EU VET Systems

- Mass wave of youth unemployment
- “Flexicurity” dominant employment policy prescription (made famous by Denmark).
- Implementation of active labor market programs—EU goal to ensure maintenance of worker employment through crises
  - Resulted in rapid increase in state spending on vocational training.
- Use of short-time work (i.e., reduction in hours) along with upskilling in some countries.
- Protracted challenges in maintaining work-based learning opportunities.

## Recession Responses: Flexibility

- Reduction in qualification numbers combined with a broadening in training content to emphasize transversal skills.
- Decentralization of governance over VET to better align with local labor markets and increase flexibility
- Increased permeability between higher education and VET systems.
- Modularization and greater individualization of learning outcomes (a good example is Finland).
- Related outcome: Young VET grads have better employment prospects than gen ed grads for their first decade on labor market

## EU VET & Future of Work Complex Challenges (Similarities in US)

- Widespread risks of automation.
- Many young workers overqualified for their current jobs (bias towards lower skilled jobs).
- Yet, relatively high youth unemployment
- Significant digital skills gaps among adult workers.
- Aging population.
- Low participation of adult workers in VET in certain areas in the region (Finland, France, and Denmark are exceptions).
- Labor market skill polarization is significant; theorists debate this as an explanation for inequality.

## EU Preparation for the Future of Work

- *European Commission 2020 Skills Agenda:*
  - **Advance Skills Pacts at regional and industrial levels involving key stakeholders focused on upskilling**
  - Strengthen **skills intelligence mechanisms** and dissemination (i.e., forecasting and communicating what skills are needed in the present and future labor market).
  - Establish a new **Europass online platform for training providers to offer digital diplomas, and for prospective employees communicate skills and connect to jobs**
- Commission is also launching new initiatives on **individual learning accounts** and **micro-credentials**.





# LESSONS FROM EU VET FOR THE UNITED STATES

**Flexibility-centered strategies to improve technician training in the U.S.**

## Some Background: VET Education Levels: Early Start

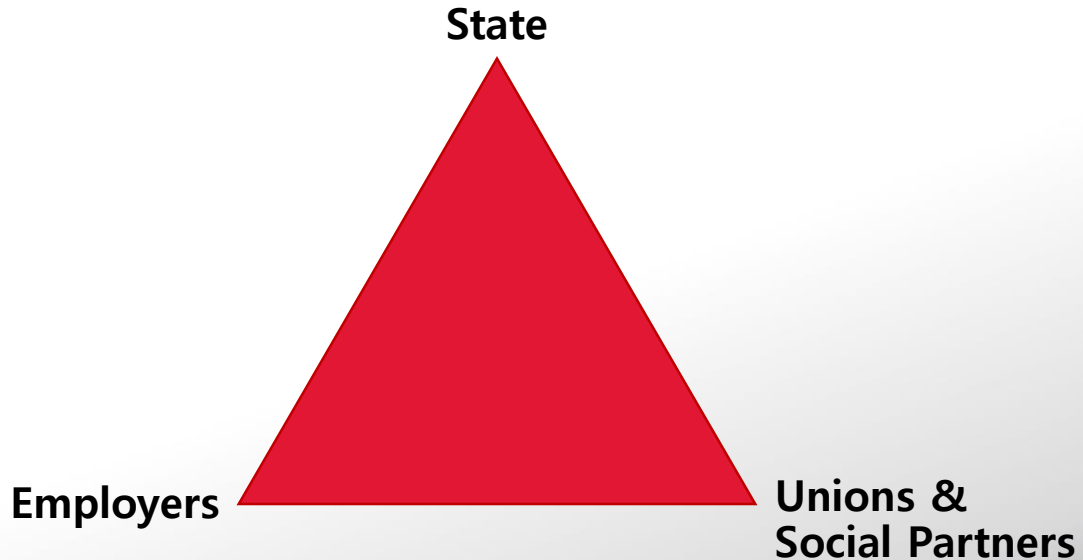
Level	VET Focus/Characteristics
<b>Primary (Ages &lt;11)</b>	Academic and general studies (minimal VET)
<b>Lower secondary (Ages 12-14)</b>	Mostly academic coursework, but some vocational skills training opportunities
<b>Upper secondary (14-17+)</b>	Preparing students for tertiary education and/or employment. Bulk of VET education occurs at this level.

## Typical Age of Entry/Exit into Initial Vocational Education (IVET)

Country	Typical Age of Entry	Typical Age of Exit
<b>Austria</b>	14	18-19
<b>Denmark</b>	17	18-21
<b>Finland</b>	16-17	19-20
<b>France</b>	15	17-18
<b>Germany</b>	16-17	18-19
<b>Spain</b>	15-16 at lower secondary level; 17 at upper secondary level	18

May then enter workforce or post-secondary VET/higher education

# VET Development and Delivery through Tripartite Governance



## Delivery on the Ground

- Curriculum delivered primarily by state-run general education or vocational schools, by an employer, or some form of both.
  - E.g., France offers Initial VET through specialized vocational schools, while Spain offers VET through both academic and VET schools
- Largely state funded through taxes (e.g., employer tax)
- Balance between state and employers helps provide flexibility for the worker, as does the association with the school system.
- U.S. liberal system creates barriers to this kind coordination, but EU still underscore potential of greater collaboration.

## Educational & Career Pathways

- **Some combination of:**
- Multiple entry and exit points
- Dual qualifications (academic and vocational) with opportunities for partial qualifications to revisit later (modularization)
- Movement between vocational and academic pathways (both ways)
- Reskilling and upskilling.
- Flexibility for non-traditional learners
- Ample opportunities (and active state encouragement) of lifelong learning, including adults.

## Multiple Entry & Exit Points

- Often earlier start than U.S. school system (EU VET generally starts around upper secondary level at age 14-17, with some lower secondary options in certain countries like Austria and Spain)
- Greater ability to move across VET and academic pathways/programs in EU
  - Stronger in countries like Austria and Finland than in Germany
- EU Initial VET typically takes place:
  1. Within traditional school system or vocational schools
  2. Through apprenticeship/work-based learning
  3. Both (Dual VET)
  4. Through other special programs
- Less permeability between academic and vocational systems in the U.S.

## Dual VET: What Is It?

- Opportunity to do both academic work and VET work, including work-based learning experiences (workplace or simulation labs).
- Depending on country, generally can begin at upper secondary and duration is 1-5 years
- All countries require some form of WBL for VET (even school-based programs)
- Significant policy imperative at the EU level.
- Similar to apprenticeship in the U.S., although more common and socially valued in EU (e.g., culturally and socially engrained in Germany and Austria)

## Labor Market

Full-time  
VET  
School

Dual VET

General  
Academic  
Education



## Dual VET: Benefits

- Results in dual qualification, and can lead to more specialized post-secondary VET or traditional education
- Students are not siloed (learn both VET and academic skills)
- Impacts include
  - Lower skill mismatches
  - Lower youth unemployment
  - Improved competitiveness
  - Better integration of immigrants in workforce
- Easier adaptation to technological change—coordination
- Fosters collaborative partnerships between stakeholders.
- Critiques often center around equity as well as state subsidies and funding of private industry, and therefore high cost
- Extent to which flexible pathways are used by students varies

## Post-Secondary & Tertiary VET

- Typically focused on learners seeking to acquire a higher level of specialization (roughly equivalent to a Master's) in their field.
- Courses and programs vary widely; some countries offer short skilling opportunities through modularization of qualifications, others may focus on specific industries (e.g., healthcare)
- High demand and competition for tertiary VET in some countries, often to the point that demand exceeds supply.
- Though possible for tertiary VET students to transfer to academic pathways, the programs are largely separated in practice and use is mixed (i.e., goal of tertiary VET grads is work)
- But—adult education and retraining opportunities

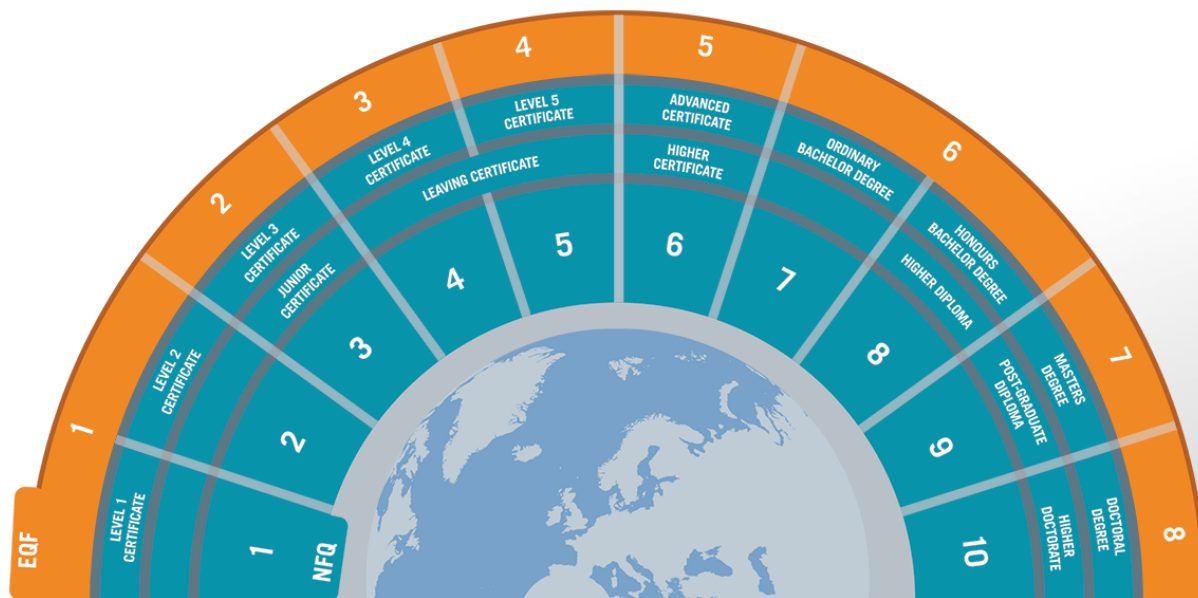
## Adult Education & Retraining

- Goals to reskill and/or upskill
- Durable public funding and policy support; often free or accessible with financial assistance (e.g., paid or subsidized leave for training; flexicurity)
- Employers sometimes subsidized to provide training.
- Unions play significant role in policymaking for adult education and collective training agreements
- Diverse field of providers, with state serving as the agenda-setter for policy and standards in coordination with other social partners
- Deep-rooted traditions in lifelong learning and broad social goals, but also with more immediate objectives to address labor market crises

## Qualifications

- State develops and standardizes VET qualifications to reflect skill attainment in unison with other social partners like employers and union associations
  - Similar VET qualifications may be obtained through both dual/apprenticeship programs or school-based VET (e.g., France)
- Typically conducted through National Qualifications Frameworks (NQF), typically modeled off the European Qualifications framework (EQF).
- EQF links qualifications from different EU countries together, including general, adult, vocational, and higher education
- Promotes individual mobility for education and work across Europe and lifelong learning
- For higher education, EQF is related to Bologna Process' three cycle system (i.e., bachelor, master, and doctorate)

## Links between EQF and NQF: An Example from Ireland



<https://nfq.qqi.ie/qualifications-frameworks.html>

## Qualifications (Cont.)

- NQFs provide a stackable structure and quality assurance, and are nationally recognized by employers
- Some portability across borders (EQF).
- Some ability to achieve a qualification through multiple pathways.
- However, regulatory potency of NQFs often varies based on country (e.g., private employers have own certs in Germany, and modularization has stalled)
- Significant gap within the U.S. non-degree workforce credential landscape (mixed recognition)

## Modularization

- EU imperative and labor market adaptation.
- Variety of benefits for learners (e.g., flexibility, partial skill attainment)
- Can sometimes be individualized to meet learners' needs.
- Recognition of prior learning
- Some countries have been resistant to EU modularization demands (e.g., Austria and Germany).
- Many U.S. training programs are not modularized, lack prior learning assessments, and portability remains rare and/or highly local.

## VET Teaching, Teacher Training, & Professional Development

- Teachers are generally paid well.
- VET teaching is culturally respected as an important part of the economy.
- Often required to engage in continuous education and training with ample opportunities for professional development
- PD can often include practical work in industries.



## EU VET Funding

- Ample public funding through robust taxation policies (little to no cost for students).
- Joint labor-management committees to identify skills areas to invest in (part of NQF).
- Significant paid time off for training leaves (e.g., flexicurity).
- In US, community college institutional structures offer some financial support, but, at least at the current moment, economic barriers remain for many students.
- US has limited secondary level vocational options

## Key Takeaways and Lessons for US

- Shared governance and greater coordination between social partners, with state involvement and public investment at national, regional, and local levels
  - Dialogue between employers (and unions in certain industries) and high schools, vocational schools, and community colleges (e.g., through grants but ideally through in-house paid staff/representatives)
- Multiple entry and exit points with modularized programs and partial qualifications
- Recognition of non-institutional learning (PLAs)
- Flexibility in educational pathways (CTE to gen ed and vice versa) within and beyond secondary and post-secondary education
- Widely recognized national and industry qualifications
- Work-based learning in a variety of formats (e.g., workplace, school labs)
- On going teacher training and professional development
- Robust VET financing (public and private)



# Questions?

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