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Social organization of knowledge in VET:
challenges for schooling and apprenticeship in Austria

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Agenda

- Introduction: „distributed knowledge"
- Innovation and „knowledge dynamics"
- Interaction of „know-dyn" & VET structure
- The Austrian case: tensions and policies

Significance of knowledge

Basic proposition
Knowledge is power („Wissen ist Macht“)
General knowledge is the vocational knowledge of the ruling class

A certain pattern of kn is institutionalised in ET-systems
knowledge types roughly: **academic, general, vocational**

This pattern includes a certain distribution of kn types...
horizontally (specialisations) & vertically **stratified**

...that influences **rationing** of access to those kn types
based on ideological beliefs (e.g., abilities)

This aspect was **neglected** by theory and seems to **change** with the new paradigms of kn ec&soc

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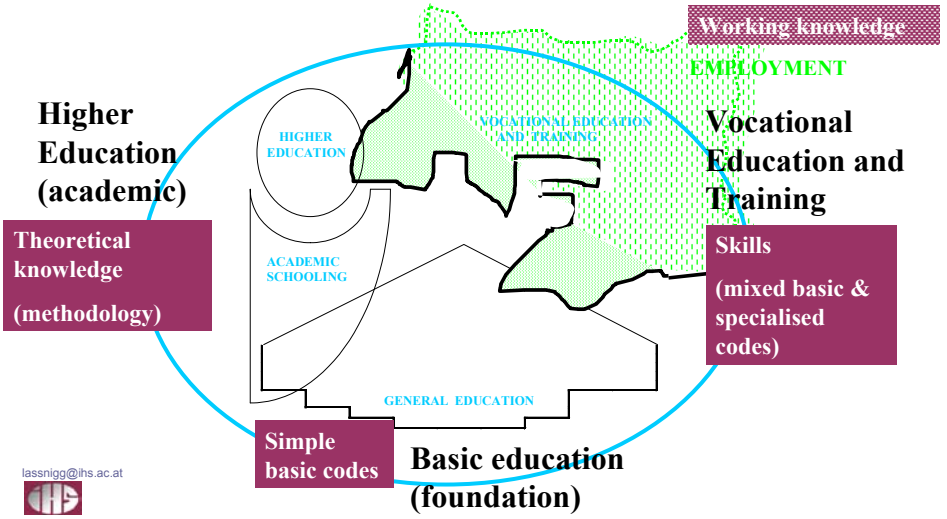
Model: “distributed knowledge”



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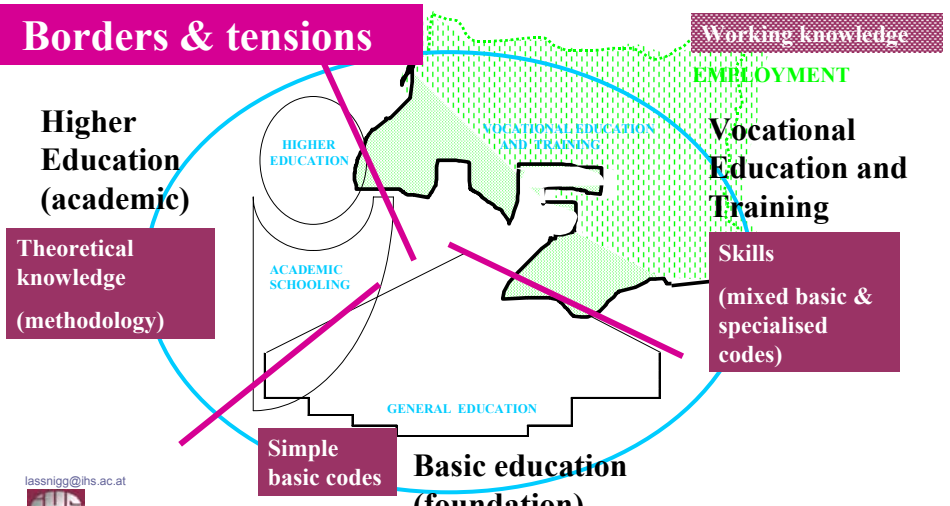
Model: "distributed knowledge"

Borders & tensions



Higher Education (academic)

Theoretical knowledge (methodology)

Vocational Education and Training

Skills (mixed basic & specialised codes)

Simple basic codes

Basic education (foundation)

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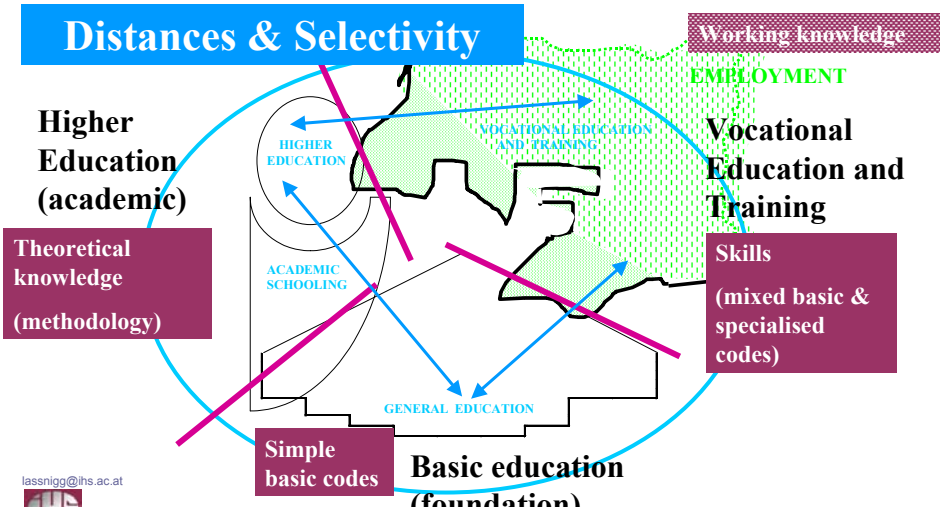
Model: "distributed knowledge"

Distances & Selectivity



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knowledge related conceptual changes

Concepts of **knowledge**: „internalisation“
constructivistic, process vs. entity, anti-rationalistic-nominalistic concept

Mode A - Mode B knowledge **production**
new status of academic knowledge vs. „applied knowledge“

Linear to systemic (complexity) model of **innovation**
new status of actors (e.g., university), and interaction among them

New growth theory, evolutionary **economics**
knowledge = factor, „firm as knowledge producing entity“, collective use

New macro-economic **emphasis** on competence
unknown how it works;TFP; impact of VET vs general competence (US-EU - growth gap)

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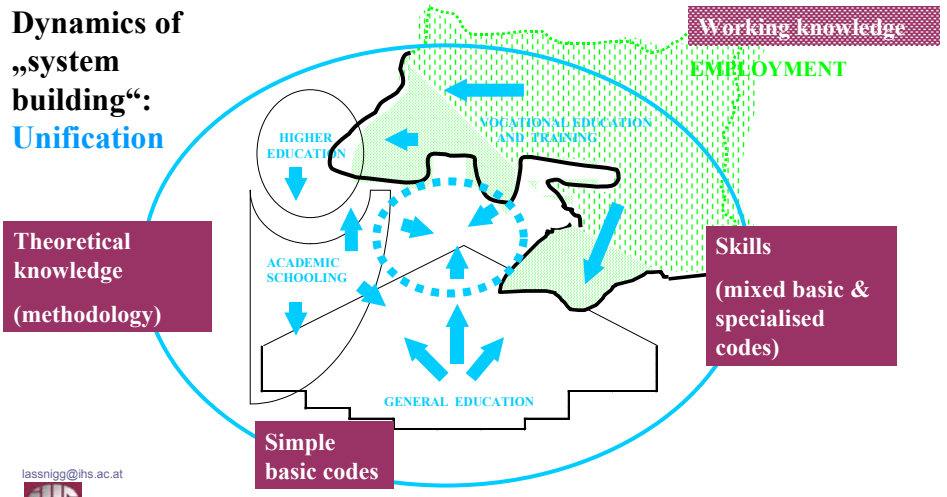
Dynamic: “distributed knowledge”

Dynamics of „system building“: Unification



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- Introduction: „distributed knowledge“
- **Innovation and „knowledge dynamics“**

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Innovation

Innovation, driven by technological change and market change, is a core process of the knowledge economy & society, and primary source for economic success

- Education and VET are important sources for innovation

however

Innovation **does not** produce sustainable and equitable social and economic well-being by itself

- Intervention is necessary to fight social and regional disparities

Innovation **seems not** to be the primary strategy taken by firms in the capitalist market

- Intervention is necessary to support innovative behaviour of firms

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Innovation

„Culture of innovation“ is a key concept in the EU policy debate, however, not very much defined

- **„positive climate“ towards change**
- **orientation to application of R&D**

Aggregate patterns of innovation regimes, mixture of

Security-orientation	**Risk-orientation**
- Incrementalism - Integration & lock-in - Standardisation	- Exploration (radical innovations) - Flexibility & openness - Diversity of products/process

The actual mixture of those orientations might be seen as an important part of “innovation culture”

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Innovation and knowledge

Knowledge is embodied in **people**, therefore people should be at the core of innovative strategies

Innovative **enterprise behaviour** is a key issue in theory:

- “high performance workplace”
- learning organisation
- knowledge-based economy

however:

It is not clear how enterprises spontaneously behave:

- rather cost-cutting, outsourcing, etc.
- than broad and inclusive innovative strategies

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Innovation, knowledge and VET

What are potential roles of VET in relation to innovation, and which kinds of contradictions are involved in those roles?

- VET might be seen as **part of an innovation regime**, contributing to the Status-quo (some supporting it, some critical to it)
- VET might be seen as an element in broader policy **attempts to change an innovation regime** (potential impact might be questioned)
- Roles of VET in relation to innovation might be seen as **conflicting with other missions of VET** (assessment of innovation regime, and of potential impact of innovation might be different)
- The changing role of knowledge in the economy and society might be seen **independently from innovation** in a narrow sense, as a secular process, interacting with VET

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Knowledge categories

	TACIT KNOWLEDGE	CODIFIED KNOWLEDGE
KNOW WHAT KNOW WHY		
KNOW HOW KNOW WHO		

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Source: Graphik Lassnigg after Lundvall/Borras 1997, 59

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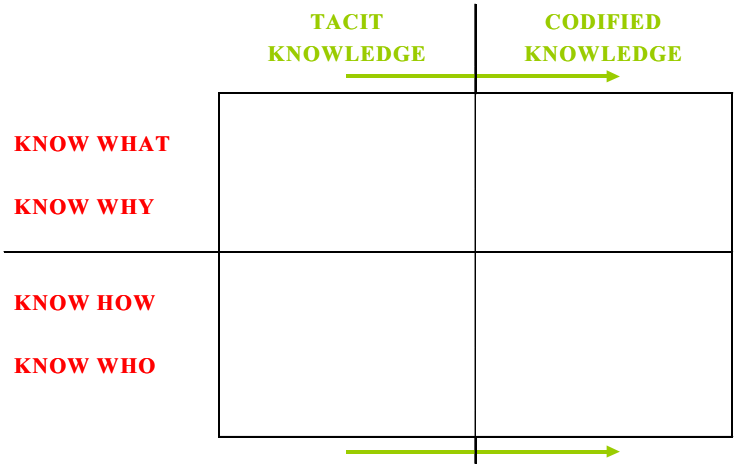
Dynamic 1: codification



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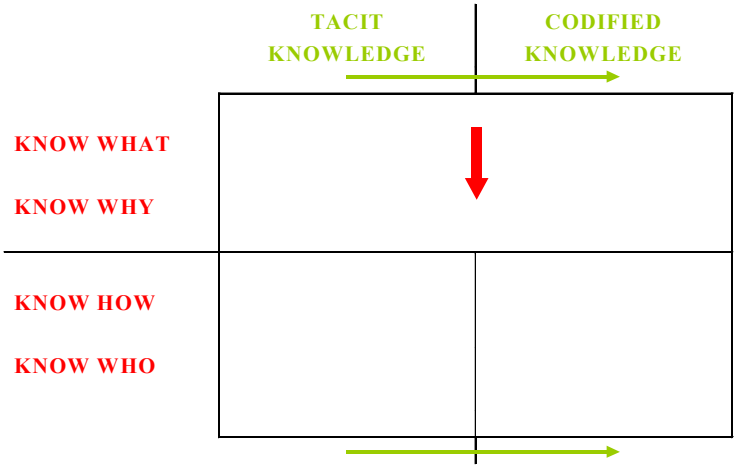
Dynamic 2: understanding



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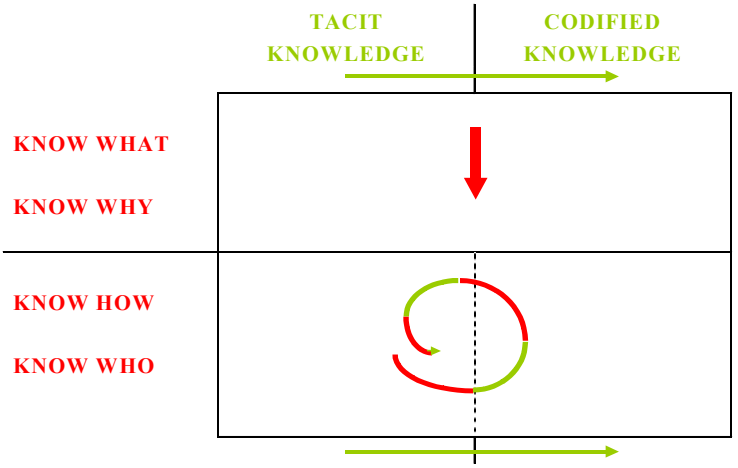
Source: Graphik Lassnigg after Lundvall/Borras 1997, 59

Dynamic 3: Renewal



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Knowledge and VET structure

The structure of VET systems is **diverse** and various **changes** are going on in VET systems:

- universal **access** to VET
- formal **upgrading** of overall systems by growth of higher education
- **diversification** of higher education by VET oriented institutions
- strengthening of **foundational** role of VET (e.g., double qualifications)
- growth of **continuing** VET, combination of formal, non-formal, informal learning
- interplay and i**ntegration** of initial and continuing VET

Is there a basic relationship between the model of knowledge dynamics and VET structures? Hypotheses:

- some parts of VET might serve certain knowledge categories
- certain dynamics might be supported/prevented by certain VET structures

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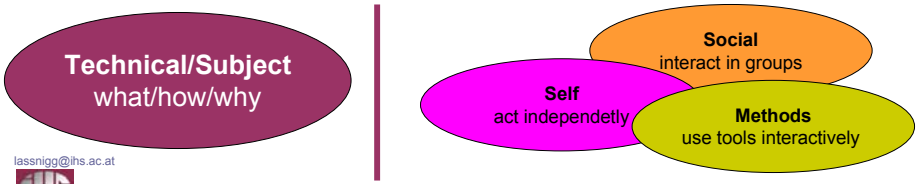
H1: VET & knowledge categories

Traditional relationship, intuitively:

know why	higher education
know what	upper secondary VET
know how	practical training, apprenticeship
know who	*missing*

Knowledge and competencies:

Cleavage between traditional VET and new dynamic competencies?



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H2: VET & knowledge dynamics

Policies and Trends related to knowledge dynamics

Codification of tacit knowledge
- combination of informal, non-formal, formal learning
- human resource strategies in the enterprise sector
- lifelong learning

Understanding
- upgrading towards higher education
- new forms of higher education
- upgrading of upper secondary programmes

Renewal
- work-based learning, strengthen dynamic competencies
- partnerships, apprenticeship

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Context

Low profile of innovation system (e.g., low R&D expenditure, traditional structure, high tech low level)

Strong emphasis on **medium level qualifications**, particularly apprenticeship, upgrading by VET colleges

Higher education small and traditional, low supply of R&D personnel

Overall: Low-risk incrementalistic pattern of innovation system, import rather than production of technology, some exceptions prove the rule

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Overview VET system

Challenges

de-specialisation
new competencies

low profile of apprenticeship
partly decreasing

upgrading within institutions

innovative role of polytechnics
theory practice gap

assessment of demand for CET

System traits

Strong VET system
fulltime schools at two layers
(double qualification, medium level)
and apprenticeship training

Enterprise sector strong in
apprenticeship, signs for withdrawal

Upgrading through change from
apprenticeship to fulltime schools

Higher Education relatively small
polytechnics growing
universities under critique

Continuing ET on average level,
strongly supported by enterprises

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Apprenticeship

- Key focus on **know how** and **tacit** knowledge
- Codification process badly developed, low level general competences
- Learning from past and current **practice**, low input from outside
- Paradigm case for **incrementalism**

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Full-time VET - schools & colleges

- Focus on rather specialised **know what**
- **Adaptation** to new developments difficult because of costs
- Difficult to implement the new competencies because of **overload** with „know what“ - technical and subject knowledge
- **Foundation** function increasing, however, limits because of overload and contradictory interests

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Polytechnics ("Fachhochschule")

- Built up from **bottom up**, on small scale & with low dynamic
- as **alternatives to universites** that were considered as being „too theoretic" and detached from practice
- Rigid **demand orientation**, to be proved by formal assessment
- **Low R&D profile** because of fear from "academic drift" and of small scale

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Lifelong learning

- Policy focus on **initial** education and training
- Small function of upgrading, mostly **short adaptation** courses and informal learning, provided by **enterprises**
- Low profile of lifelong learning **policy**, missing responsibility for co-ordination of actors, social partners certain role
- Diversified market driven adult education system, with several **tensions** (VET vs. general, public vs. private, etc.)

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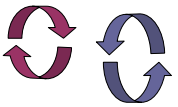
Conclusion

There are **two feedback loops** in the relationships between VET, innovation, and policy making:

1. Apprenticeship boosts successful incrementalist innovation, which is self-sufficient, and separates practice from theory, by not producing demand for R&D and by indirectly crowding out radical innovation



2. Research institutions seem without use the more they are theoretically oriented, which undermines the functioning of universites, and leads to bottlenecks in financing and political support for (basic) research

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Summary general

- Ideal of equal access to knowledge
- ET systems rationing access: „distributed knowledge“
- Dynamic towards unification in ET systems ...

... possibly in line with knowledge economy&society ...

... however not a spontaneous process, policy needed

- Interaction innovation dynamic and ET system
- The Austrian case points to negative feedback cycles:

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Summary Austria

- A strong & traditional VET system with big distances between knowledge types ...
- ... seems to interact with a security-oriented pattern of innovation ...
- ... in a way that supports a pattern of distributed knowledge with a high „rationing parameter“

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The End

Thank you !

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