

Is a technical school a bridge between school and work?

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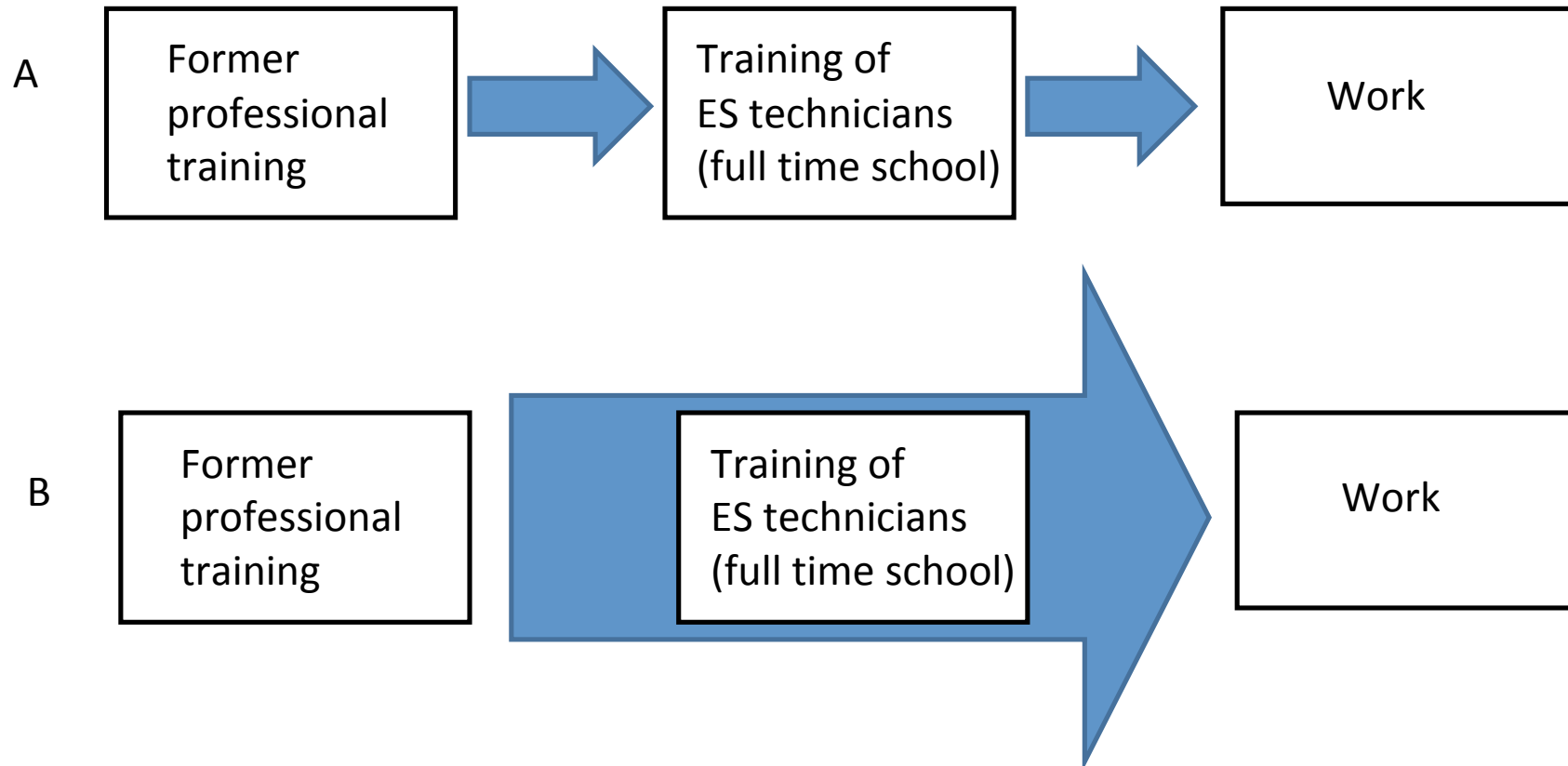
Introduction

Aims of our contribution:

- Revisit current studies on learning in professional training with a special attention paid to transition processes:
 - Perret, J.-F. & Perret-Clermont A.-N. (2004) *Apprendre un métier technique aujourd'hui, dans un contexte de mutation technologique*. Paris L'Harmattan.
 - Ludvigsen, S., Lund, A., Rasmussen, I. & Säljö, R. (Eds) (in press) "*Learning across sites, tools, infrastructures and practices*".
 - Knowledge Practices Laboratory "Kp-LAB", 6th E.U. Framework:
<http://www.kp-lab>.
- Pay a special attention to the training of ES Technicians within a Technical School (full-time).

The Technical School as an institutional setting supporting transition from « student » to « professional »

Two perspectives on transition from school to work:



Transition

engages 3 types of interdependent processes:

- Acquisition of **knowledge** and **competencies**
- Processes of **identity re-definition**
- Processes of **meaning making** by which young people can confer **sense** to changes

Perret-Clermont, A.-N., & Zittoun, T. (2002). Esquisse d'une psychologie de la transition. *Education permanente*, 1, 12-14.

Hviid, P. & Zittoun, T. (2008). Editorial introduction: Transitions in the process of education, *European Journal of Psychology of Education*, 23(2): 121-130.

Zittoun, T. (2008). Learning through transitions: The role of institutions, *European Journal of Psychology of Education*, 23(2): 165-181.

**The Technical School:
a pedagogical setting meant
to support transition**

to be looked at from three perspectives:

- the school's
- the teachers'
- the students'

Our research question:

What is the importance of technical systems (tools and machines) in transition from one activity system to another?

Our hypothesis: ***they play a central role***

for:

- acquisition of **knowledge** and **competencies**
- processes of **identity re-definition**
- processes of **meaning making** by which young people can confer **sense** to changes

from the perspective of:

- the school
- the teacher
- the students

From the school perspective

The Technical School cares :

- to be uptodate, even cutting-edge, with its tools and technologies
- to choose tools and technologies that are adapted to training activities
- to sustain the development in students of transversal and general competencies (= not limited to the mastery of specific tools)
- to prepare the students for their future

From the students' perspective

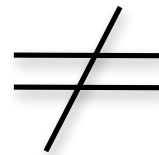
The students:

- look for their **identity**; they want to be now professionals (and not anymore only students)
- nevertheless they regress to the student position, and behave like youngsters, as soon as they **fail seeing links** between what they are asked to do at school and what they expect to be industrial life
- they value modern technologies when they expect them to be adopted by industrial firms, but at the same time they fear that these technologies **might threaten** their jobs and profession (devenir « presse-bouton »!?)
- they judge the school tools and technologies in relation to what they **imagine** about their use in firms.
- they want a guarantee that the didactic activities are professional activities
- they dislike « didactical tools » meant to help the learning of the trade. They want « real tools », **authentic** ones.

School and students have different perspectives sources of tensions and doubts

The school
values

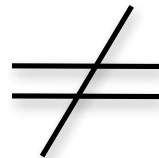
general and
transversal
competencies



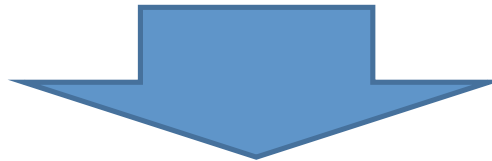
The students
value

the specific **identity**
conferred by the mastery
of a **specific trade**

tools adapted to teaching settings
(didactic tools)



« real tools » used by the firms
(authentic tools)



problems in **meaning making**

(« what is the meaning of this learning setting and its activities »?)

Understanding the **meaning** of the learning activities

Achtenhagen (2003) places the question of **authenticity** on 3 levels:

- tools
- tasks
- activity context

We observe that students:

- are centered on the tools only
- the school does not make sufficiently explicit the links between school *tasks* and industrial tasks
- the students are insufficiently familiar with the industrial *contexts* of activity and their evolution

Meaning from the students' perspective

- too centered on tools
- insufficient links to future activities
- insufficient opportunities to discover the technical evolution of the tools in workplaces

-----> Need for more visits of firms and exhibitions, internships, centered on the tools. More comparisons and technical explanations of the technological changes and their impact on activities and skills.

The professional field uses 2 different types of technologies

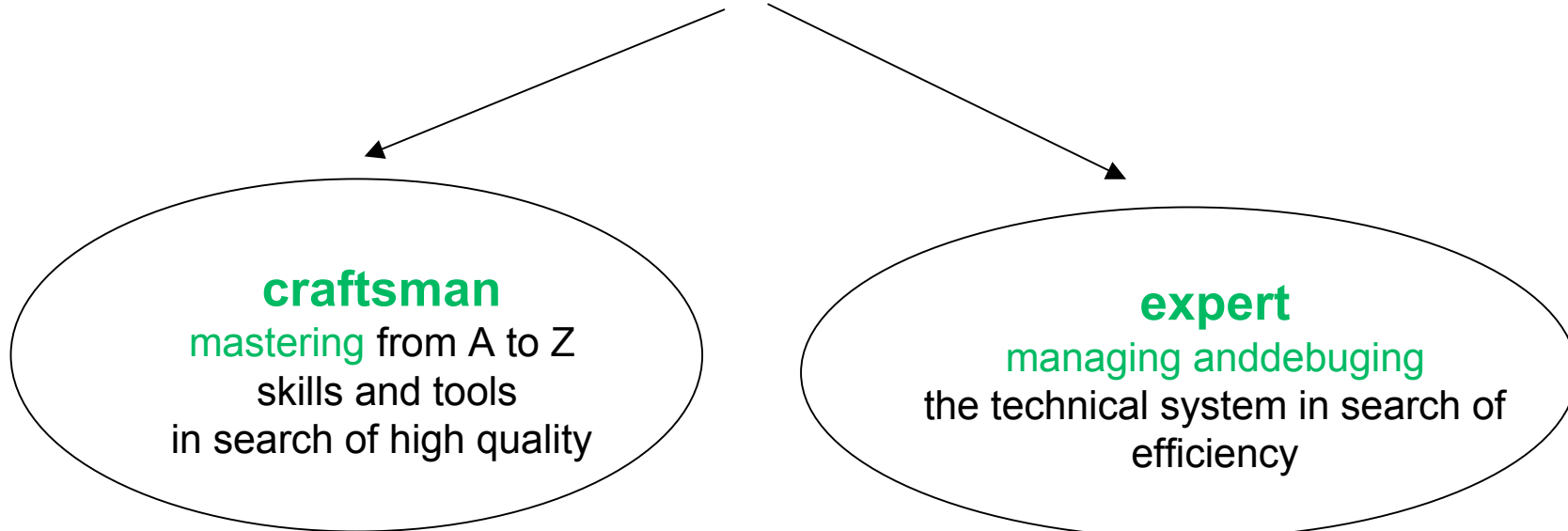
Classical technologies

mechanical and masterable
via individual training

Complex electronic systems

requiring adjustments, frequent
debugging, development, team work

different professional **identities and ethos**



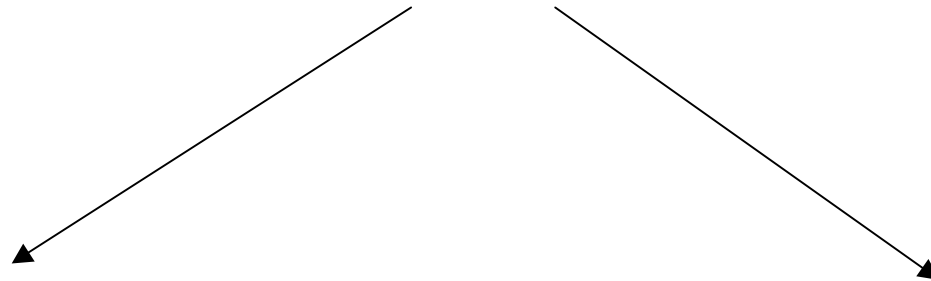
2 types of technologies

that require

2 types of **competencies**

learned within different

2 types of social relationships



imitation of
skills and know-how
of the **model** teacher

interaction with
the teacher **as expert**
(coach, solver, inventor, partner with resources)

Understanding better these 2 types of tools and technologies, students:

- give **meaning** to professional activities and the didactic activities that prepare them
- understand which **competencies** and **attitudes** they require
- develop an **understanding of the socio-technical context of activity and its evolution**
- **develop their professional identity within these activity settings**
- give **meaning** to their **identity** and **competencies**

A strong interdependancy exists between

- the perceived **meaning** of the activities
- roles and **identities**
- commitment
- and acquisition of **competencies**

There is a strong need to construct explicitly a professional **identity connected to the evolution of the profession**

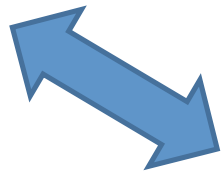
in order to reduce the students' fears in front of the technological changes that seem to threaten their professional **competencies**

and to facilitate commitment and consequently their learning

A major pedagogical challenge

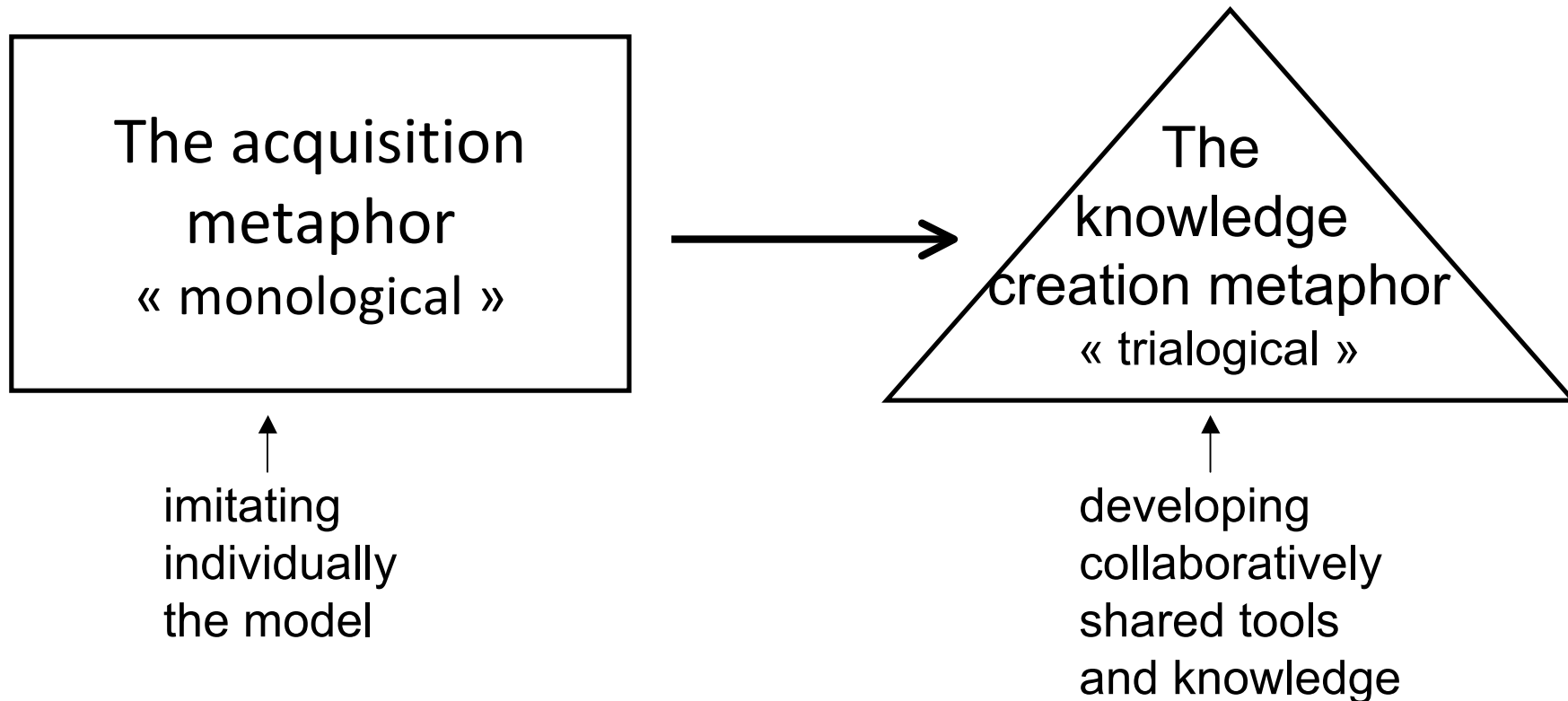
Manage the « contradiction » between:

teaching the full **mastery** of the tools of the trade for the crafting of high quality products



teaching the capacity to respond efficiently to the numerous **unforeseen** problems and bugs of complex technological systems; teaching students to become partners for technical adjustments and **developments** towards quality.

The school itself is going through a
transition
from a « monological » to a « trialogical »
pedagogical model



-Paavola, S. & Hakkarainen, K. (2005).The Knowledge cration metaphor –An emergent epistemological approach of learning.
Sciences & Education, 14, 535-557

- Knowledge Practices Laboratory "Kp-LAB", 6th E.U. Framework: <http://www.kp-lab>.