CHAPTER 2

Vocational education and training in transition: from Fordism to a learning economy

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2.1 Introduction

DURING THE PAST TWO DECADES, in highly industrialised western countries, systems of vocational education and training (VET) have been increasingly challenged by a major shift in the techno-economic paradigm. The Fordist industrial paradigm, which was the predominant mode of development from the middle of the former century until the 1980s, based on nation states, Tayloristic work organisation, and assembly line techniques was increasingly sliding into a crisis. In parallel with this decline, the outlines of a new techno-economic paradigm became apparent, characterised by information and communication technologies (ICTs), an increased orientation towards global markets, flat hierarchies in work processes, and lifelong learning. Some authors refer to the new paradigm as a learning economy (Lundvall & Johnson, 1994; Archibugi & Lundvall, 2001). Given this transition, the main argument of this chapter highlights the organisational and institutional challenges deriving from a new interplay between Vocational Education and Training (VET) and innovation, the core process of the learning economy.

Section 2.2 discusses the patterns of VET delivery in the Fordist industrial paradigm; section 2.3 analyses the broader political and societal context of VET, deriving from a newly emerging nexus between innovation and learning in the framework of a learning economy. This macro-level analysis is complemented by a closer look at the micro-level in section 2.4. Two alternative models, reflecting the interplay between VET and innovation at the organisation level are contrasted: the *social organisation of innovation,* based on cooperation, networking and an extensive development of human resources, is contrasted to an alternative trajectory of *technical organisation of innovation,* based rather on a reduction in product costs, by deepening the division of labour and tightening discipline in the factory. We will argue that both models are founded on their own idea of flexibility. Nevertheless, only the flexibility concept of the social organisation of innovation is compatible with the learning economy paradigm, and points to new requirements for VET. Section 2.5 is particularly focused on these new requirements and corresponding VET policies in a learning economy.

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2.2 VET in the Fordist[1] industrial paradigm

Despite the dramatic changes we are facing in the fundamental patterns of the economy and employment, the traditional Fordist industrial paradigm is still deeply rooted in our concepts and institutions of work, industry, education and social policy (Carnoy & Castells, 1997). A gap can be observed between the real changes and dynamics in the business processes and re-engineering strategies of companies, with crucial repercussions *for VET* on the one hand and rather traditional institutional set-ups and organisational rationales *in VET* on the other.

In this first part, we try to analyse the role of VET in the Fordist period, taking the Fordist/Tayloristic employment model as a starting point. As a result, we discover a predominantly hierarchical and polarised labour market paradigm related to a skill-producing system, which predominantly released companies from responsibility, and produced only a few transferable and rather poor technical skills (Boyer & Caroli, 1993).

2.2.1 The employment model of the Fordist industrial paradigm

In the Fordist/Tayloristic paradigm, work followed two fundamental principles: functional specialisation and hierarchical integration (Schienstock, 2000), pointing to hierarchical chains of command, narrow divisions of tasks and a large component of unskilled labour. As the core of the Fordist economy, large corporations have been structured on the principles of vertical integration and the institutionalised social and technical division of labour (Castells, 1996). The information flow in these companies typically contained channels in which only a vertical flow of information was possible, and through which the performance of hierarchically-arranged units was controlled. Management as a practice has been about being in control, exercising specific expertise, and maintaining clear lines of responsibility (Kelleher & Cressey, 2000). The Tayloristic organisation of labour had a tendency towards the separation of the conception and execution of work processes, and hence towards "the systematic incorporation of the know-how of technical workers in the automatic operations of machines" (Lipietz, 1994). The Tayloristic paradigm broadly excluded the direct producers from any involvement in the intellectual aspect of labour, hence industrial relations have been restricted to issues of wages, working time, and industrial safety. The hierarchical character of the Tayloristic division of labour has never been in doubt, nor has training been perceived as an issue for trade unions (Mayer, 1999).

At the macro-level, this paradigm was based on *"productivity gains obtained by economies of scale in an assembly-line based, mechanized process of production of a standardized product, under the conditions of control of a large market"* (Castells, 1996).

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[1] In contrast to Bell's general definition of the industrial society, characterised by the coordination of workers and machines for the production of goods (1973), the concept of Fordism – pioneered by the French Regulation Approach in the late 1970s and refined in the 1980s (cf. Aglietta, 1979; Boyer, 1992; Jessop, 1986; Lipietz, 1997) – is used to denote the specific phase of capitalist industrial development between the 1930s and the 1970s, reflecting *"loosely the pioneering mass production methods and rules of management applied by Henry Ford in his car factories during the 1920s and 1930s."* (Amin, 1994).

2.2.2 The skill-production model of the Fordist industrial paradigm

This work paradigm emerged in co-evolution with Fordist institutional set-ups like full-time employment, clear occupational assignments, and a well-established career pattern over the worker's lifespan, corresponding to the concept of a guaranteed "job for life". It was possible to work in a specific occupation for a lifetime, and requirements hardly changed: young people went to school, got a job and often did that job for much of the rest of their lives. Learning was clearly localised at the start of life; after initial education, training was seldom needed (Carnoy & Castells, 1997). Because of the stability on the labour market, the educational supply could continue to exist for a long period of time. Hence, education was designed within a context of certainty: the knowledge was judged as true and objective, and the instructional techniques were authoritarian, receptive, and nonparticipative.

Within this context, VET could be developed in an industrial way within the framework of the *'adaptation approach'*. Technological developments were assumed to be 'automatic', hence the requirements of the production process and the features of occupations just had to be anticipated, codified, and translated into different educational steps, qualification standards, and examination demands. In this process of *'backward mapping'* on the one hand, occupational analyses played an important role. On the other hand, the development of skill definitions and appropriate technical and vocational courses has often been controlled by professional groups at national level[2]. The resulting job structures and function profiles had the status of true canons (cf. Brown & Duguid, 1996) of the future demand for workers and skills, although the definition of these profiles is abstract and the result of a compromise, with a conservative flavour.

The Fordist mode of labour organisation, separating conception and execution, has been mirrored in the separation of general and vocational education, and the corresponding low prestige of vocational and occupational education compared to general academic education. *"Whilst vocational education might offer entry into occupational communities of practice, it was restricted in that the general education required for career progression or for dealing with the growing complexity in industry and commerce was not provided." "And universities have increasingly been seen as offering a better opportunity for career development"* (Attwell & Hughes, 2001). The tasks of vocational colleges in this paradigm were restricted to the implementation of prescribed criteria. Consequently, the student has been 'put through' the educational process: once chosen for a specific part (course) of the system, the educational process - well defined from start to finish - had to be consumed (Nieuwenhuis & Smulders, forthcoming).

In terms of further training, classical, continuing vocational training in companies (internal and external courses and seminars) has been important only for the upper segment of the labour market (management and engineers) and for individual workers who wanted to climb the promotion ladder. For the majority of employees in companies and organisations, classical on-the-job training (vocational adjustment training) was sufficient, and continuing training for the unemployed was not important either.

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[2] Trade unions and employers' organisations especially played their roles in the definition of vocational courses in the German and Dutch apprenticeship systems and in the formulation of national vocational qualification standards in the UK system (Nieuwenhuis & Smulders, forthcoming).