

# Competence-based Compatibility between Jobs and University Curricula

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**Summary.** In this paper, we put forward a mathematical and statistical model for measuring the “compatibility” between jobs and university curricula based on professional competences. Our model aims at comparing work requirements and the professional counterparts achievable at school. Even if the basic concepts might be valid for the analysis of outer educational realms, the model is devoted to the analysis of highly qualified jobs, and in specific those “from technical to managerial positions” that may be taught at university. Our model is general enough, too, to frame various studies on the job market and clarify the terminological, conceptual and operational entities of occupations.

**Keywords:** Competences; Labour market; Jobs; Professional profile; University curricula; Formative profiles; Degree Programmes; Compatibility analysis.

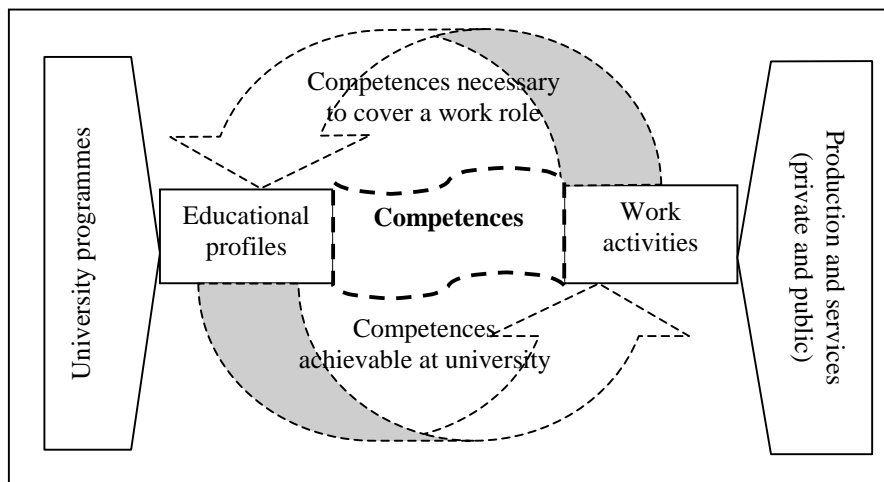
## 1. Work activities, jobs and university curricula

The professional competences required in global-market activities change rapidly. The changes concern the technical refinement of occupations, i.e. the ability of workers in relating with customers, dealers and colleagues, communicating internally and externally with their company, working in a team, solving problems and organising their own job and that of others.

The term *competences* encompasses the knowledge, skills and attitudes required to applicants for work. This topic is dealt with in Section 2. In the following, without loss of generality, we assume that school is where the competences, as part of a person’s personality causally related to superior job performances (Spencer & Spencer, 1993), are grounded.

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**Figure 1.** Type of relationships hypothesised between work activities and educational profiles in a “competence-based” society

Our relational model between work activities and competences stems from the hypothesis that the (bi-directional) links between the sites of production-reproduction of knowledge, whose edge is university, and those of economic production, represented by private companies, public bodies and professional offices<sup>2</sup>, are knowledge and skills an educated person has to possess to cover a work role. The basic hypothesis of these links, represented in Figure 1, is a “competence-based” social system.

We can describe the links between job demand and offer in mathematical terms and quantify it by focusing upon the pertinent social segment. In particular, each work activity requires competences peculiar to the size and activity of the concerned company and its economic sector. The possibility to quantify the relationships represented in Figure 1 could allow us to predict and harmonise the needs and actions of labour and education universes.

From now on, we will use the terms “educational profile”, or “formative profile”, to indicate the competences achievable at a study programme. A formative profile is a direct output of a university programme, even if a study programme may generate more than one profile and, on the contrary, different programmes may generate the same essential profile. Sometimes, we will name “curriculum” the formative path a student can go through during his/her university studies.

The terms “professional tasks” and “activities” denote the work roles in companies. The terms “job”, “occupation” and “professional profile” are the

<sup>2</sup> From now on, dealing with competences, we will not distinct between the private and public sectors of economy.