

# **Co-operation between University and Firms: Building blocks for growth in a knowledge economy**

***Joseph Kessels<sup>1</sup>***

Human Resource Development  
University of Twente, Netherlands

University of Sofia  
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[kessels@kessels-smit.nl](mailto:kessels@kessels-smit.nl)

[www.kessels-smit.nl](http://www.kessels-smit.nl)

Dronkelaarseweg 13  
3784 WB Terschuur Netherlands

Phone Twente University: +31 53 489 3169

Phone Kessels & Smit: +31 30 239 4040

Fax: +31 342 461304

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<sup>1</sup> Prof. dr. Joseph W.M. Kessels is professor of Human Resource Development at the Universiteit of Twente. He is partner in Kessels & Smit, *The Learning Company*, a specialised consulting agency in the domain of Human Resource Development, Corporate Education and Knowledge Productivity. Joseph Kessels is an advisor to the Dutch Ministry of Education in the field of Dual Academic Education.

## **Industrious Academia**

Academia joins forces with Knowledge Intensive Organisations in dual programmes

### ***Joseph Kessels***

Academic education's dual training system inevitably enlarges the scope of education in a society that is becoming a knowledge economy. Cooperation between university and the workplace, also in education, is preferable to upholding an isolated academic ideal.

Such educational innovation, however, raises questions about maintaining the programme's academic standards, the employer's non-academic interests and academic training's occupational orientation.

Supporters and opponents embrace views that range from regarding dual academic training as a necessary condition for revitalizing universities and sincere concern about relinquishing the last remnant of academic freedom.

### ***Toward a dual system of university education***

This contribution reviews several powerful arguments for introducing duality in academic education. On the other hand, this educational innovation inspires fear and resistance as well. Recent observations leave little cause for fear and refute most rebuttals.

The dual university system, where students combine learning and working through a work-study agreement, is the most recent manifestation of the trend toward duality. The main characteristic is that the work term is a vital part of the academic curriculum: the workplace as a site of academic learning. This trend is new in the Netherlands and is not very widespread abroad either.

Dutch universities have long averted the duality debate by maintaining that academic education differs from occupational training. Many continue to view university education's academic nature as the university's foundation and essence. One of the main conditions for starting dual university programmes is that the academic component, whatever it may be, be preserved (HOOP 2000, 1999, PP. 74-75).

### ***Reasons for the dual training system at universities***

Various reasons underlie the dual university training system's emergence. The one most frequently invoked is early introduction to a complex and demanding job market. Moreover, educated individuals are expected to possess competencies that are difficult to acquire in lecture courses, such as communication skills, the ability to work together on a team and being comfortable in a work environment. A more pragmatic observation is that the typical full-time student has all but disappeared. Despite the immense suspicion of dual training systems, many curricula already combine work and study. The positive results of these programmes merit continuation. Observations from educational psychology justify closer consideration of the work-study combination. Finally, the implications of a knowledge economy are worth exploring: are universities losing their monopoly on knowledge cultivation, and have knowledge-intensive organizations become equally stimulating learning environments?

The following paragraphs elucidate these observations.

#### **Early introduction to the job market**

As an introduction to the job market, dual education inspires enthusiasm in students. In addition to viewing this form of study as an effective and focused way of learning, they indicate that they have an edge on the job market compared with full-time students (OECD, 1999).

Although only a tiny minority of graduates continues studying to become a researcher, the demand for an early introduction to a workplace outside the university is a thorny issue, if only for fear of resembling occupational education. Accordingly, dual curricula are very scarce in university education.

Limouilou College in Quebec is one of the rare examples mentioned in the OECD study on the transition from school to work. The main benefits mentioned in this study are that all 250 students who have completed the new type of programme thus far had a job upon graduation, performance improved, and contacts increased between faculty and the working environment (OECD, 1999, p. 93).

#### **Competencies that cannot be acquired through a lecture course**

In addition to greater compatibility between education and the job market, the need to enhance social, communication and commercial skills underlies dual course curricula in university education (Commissie beoordeling

experimenten duale opleidingen wetenschappelijk onderwijs, 1998, 1999; Roobeek & Mandersloot, 1998). The context of an actual work environment is indispensable for acquiring these skills. On the other hand, the question arises as to whether students might master such skills just as easily on the job after their academic study. Scrupulous avoidance of learning situations throughout an academic programme for acquiring such generally acceptable competencies is even less justifiable.

### What has happened to the conventional full-time student?

A pragmatic reason for promoting dual course curricula is that the typical full-time student has all but disappeared. According to De Reuver (1999), 80% of all students hold jobs alongside their studies. The OECD report (1999) refers to a rising trend among students of combining study and work. The main reason is that many students need to earn money toward their tuition and cost of living. Other important factors include the independence and enjoyment they derive from work. The students also indicate that working while studying improves their chances of landing an appropriate job afterwards.

If so many students already combine their study with work, then perhaps universities could do more to arrange this work time to benefit the course of study substantially. Instead of stocking shelves at the supermarket, cleaning or working as a courier or chauffeur, they might organize work that is more compatible with the essence of their studies.

Law students would benefit from working at a law firm or court. Aspiring administrators might do well at municipal or provincial offices or a ministry. Future art historians will thrive at a museum. Successful coordination of work and study, as is the intent of dual training courses, will benefit all parties.

The university work-study combination is becoming common practice. In several programmes study and work go hand in hand and are rarely based on official work-study agreements. The physics programme would be inconceivable without laboratory work. A medical school that is not affiliated with a university hospital is equally difficult to imagine. Studying Japanese, archaeology or cultural anthropology without experiencing Japanese culture, doing excavations or performing field work in a non-western living environment would also be less than satisfactory. If learning and studying become as commonplace in fields such as business administration, psychology and other areas of specialization, then the transition toward a dual training system is easily made.

### Observations from educational psychology

The influence of constructivism shows that general knowledge and skills arise only from concrete experiences in specific contexts. Knowledge construction involves reflection and abstraction from several concrete and personal situations (e.g. Duffy & Jonassen, 1992; Boekaerts & Simons, 1993). Van der Sanden (1997) submits that training in occupational practice and learning at the workplace provide such realistic and meaningful contexts. Students will have an easier time acquiring abstract and generalizable domain knowledge and metacognitive skills than in a programme intended to impart abstract, theoretical knowledge through lecture courses. The OECD study (1999) also mentions the opportunities of learning in a realistic context and learning through application as the strength of combining learning with working. In the recently held round table discussion about dual university education (Geelen, 2000), students report similar learning experiences. Such views and experiences are strong arguments supporting the dual training system at universities.

The curriculum innovation that Kats & Soons (2000) describe closely resembles the knowledge construction method presented here. It derives from the 'exploratory learning' principle previously introduced by Tillema (1998). This method conflicts with the main current of curricula based on subject-matter content. In the dual trajectory, students often lack the familiar structure of fixed class schedules and the order of credits and exam periods. Instructors sincerely worry about the lack of knowledge transfer on the basic material that is the solid foundation within their area of expertise. Even if combined learning and working gain broader acceptance in university education, abandoning academic subject matter content to acquire academic skills based on problems perceived in practice will be a difficult step for academia.

### The knowledge-intensive organization: partner or competitor?

Influenced by the emerging knowledge economy, universities have long ceased to be exclusive players in knowledge development. Companies, institutions, private research institutes and consulting agencies are becoming ever more explicitly involved in research and higher education. Academia long belittled this trend by noting that it concerned only applied research, and that most consultant researchers did only a 'quick and dirty' job. In an economy where knowledge productivity adds more value than classical factors, such as capital, raw materials and physical labour, distinguishing between exclusive scholarly education and societal oriented occupational education is not always desirable (Kessels, 1998). Universities

hardly benefit from ignoring knowledge-intensive organizations or by viewing them as competitors. They will do better to become knowledge productive partners. Based on this perspective of the knowledge economy, dual academic training can be an important instrument in developing knowledge networks in which universities and organizations participate. Moreover, the connection with a knowledge network is an important reason for employers to participate in a dual training system.

### ***Fears and objections***

Despite the arguments supporting expansion of the academic system to include a dual study option, fears and objections are abound. Politicians, university administrators and faculty fear the demise of the academic content in university study. In some cases they are referring to the level of the programme, in others to academic education or academic autonomy. Students also express concern about dual education and are less than delighted with the trend that the new experiments have initiated. Their arguments against dual training include the premature end of student life, the discipline required to keep working (even on a fine day), the weak correlation between study and work and the lack of freedom (Zuidweg, 1999).

### **Level of education**

Concern for the decline in the level of academic education often arises from the conventional distinction between theory and practice, with theory being more highly regarded than practice. After all, dual training is closely linked with practice at the workplace and does not qualify as a true scholarly programme according to this rationale. Once again, the concern is that dual training systems will resemble less prestigious occupational programmes. University occupational programmes are continuous subjects of debate, as if they impede a higher academic ideal.

The practical element, which is so important in the apprentice system and the more basic occupational programmes, has continuously cast its shadow of level reduction. Associating a university programme with the apprentice system automatically renders the debate about the level precarious. Observations from educational psychology that favour a greater focus on the concrete confrontation with practice in knowledge construction, even in programmes in higher education, and the rising knowledge intensity within the organizations of the dual partners need to refute the level reduction argument.

An entirely different phenomenon arises as well. In selecting their student employees, participating organizations look for critical and innovative talent. This external selection might even turn the dual system into a curriculum for a new elite of highly gifted individuals, leaving the regular full-time programme for the remainder. Such a trend would completely reverse the danger of level devaluation.

### Academic education & academic competencies

The second fear surrounding dual course curricula is that academic education will be doomed. Schnijders is highly critical about this special quality of universities: “Academic education” has long been a cherished subject in university speeches without advancing beyond rhetoric and being included in the official objectives of Dutch higher education’ (Schnijders, 1971, p. 121).

Schuyt (1988) is also highly critical of the training offered at universities, to which supporters are all too inclined to add the ornamental modifier 'academic'. He identifies four components of academic education, summarized here as follows:

- mastering basic intellectual skills
- having ample knowledge of a certain discipline
- wanting to explore things, being able to initiate research, assess problems and having the ability and the courage to propose (and to verify) solutions to problems independently
- having sufficient knowledge of another discipline to become acquainted with and experience the relative contribution of each individual discipline; learning to identify the limits of disciplinary mindsets and acknowledging disputes between disciplines, transgressions, boundary adjustments and the like (Schuyt, 1998, pp. 25-26).

Considering dual university curricula obviously raises the question as to whether such trajectories promote or impede Schuyt’s four academic competencies. The previous considerations easily substantiate the argument that a curriculum of which the learning environments at the workplace and in academia are carefully synchronized supports basic intellectual skills, domain-specific disciplinary knowledge, a curious and critical research attitude and relativizing broad overview. Knowledge-productive work environments will welcome the ‘academic’ competencies formulated by Schuyt enthusiastically and will be pleased to help cultivate them. Staff in such work environments constantly seeks out relevant information, transforms it into useful knowledge and tries to apply it toward gradual improvement and radical innovation of work methods, products and

services. The stated academic competencies provide powerful support to knowledge productivity.

Schuyt, however, believes otherwise and raises two arguments against learning at work and working while learning. He submits that students have their whole lives to work. Academic education requires learning to make abstractions, to take distance, to encourage the imagination and to evaluate all opportunities critically. He feels that working environments do not properly stimulate these qualities, as the daily grind prevails over creativity (Schuyt, 1998, p. 37).

Fortunately, the mind-deadening grind of working environments, from which criticism and creativity have been exorcized, no longer dominates reality. Especially the ability to engage in reflection and to abstract, curious exploration and encouragement of creative turmoil characterize organizations operating in dynamic knowledge networks. In this respect, the academic competencies have lost their exclusivity and are the core of a broadly growing knowledge society. Both universities and knowledge-intensive organizations benefit from joining forces to enhance each other's expertise and opportunities (Van Ravens, 2000; Robertson, 1999). A dual learning system will not only benefit but will also facilitate the necessary partnership.

#### Academic autonomy

Schuyt bases his second argument against dual programmes on the principle distinction between truth and interest. 'Working for a firm basically means accepting the employer's justified interests and implicitly or explicitly underestimating the search for truth that figures in all scholarly disciplines' (Schuyt, 1998, p. 38). This argument reflects Huizinga's image of 'the breeding ground for scholarship,' as well as Leertouwer's desire for 'a vessel for the pursuit of the truth' (Leertouwer, 1988).

The courses of practical training have revealed that the interests of employers do not always coincide with those of the programme and the student. The initial experiences with concluding work-study agreements also demonstrate the need to make the mutual interests explicit and reach appropriate agreements enabling respect for each other's considerations (Dekkers, 2000; Kuitenbrouwer, 2000). Justified interests among employers, students and programmes, which may conflict in some cases, do not mean that the truth-seeking objective cannot or may not play a role in the intended partnership. Understandably, this thorny issue has already alerted scholars engaged in contract research (Köbben & Tromp, 1999). If the principal has reason to highlight or – conversely – to obfuscate and distort certain results



and is willing to use the means to achieve this end, the quest for the truth will be frustrated. Student involvement in such practices will certainly taint the dual model's reputation. If, however, the parties concerned share the same view about knowledge development, as intended by dual academic curricula, and record it in the work-study agreement, they need not blur the distinction between truth and interest.

The noble quest for the truth provides the opponents of the dual training system with a different resistance than the one embedded in university tradition: a say in education and research, academic freedom. This is probably why practical training is permitted at the end of academic study, while work-study agreements inspire tremendous suspicion. Practical training involves less of a commitment and protects individual autonomy; work-study agreements compromise the programme's influence and authority.

The old ideal of academic freedom is difficult to relinquish, especially if such action might suggest compromising the quest for the truth. For centuries, however, academic freedom has provided instructors with an alibi for resisting changes. 'The general impression inspired by nearly four centuries of higher education in the Netherlands is one of special reluctance to change and tremendous skill in blocking society's reformist urges' (Schnijders, 1971, p. 9).

### **Conclusion**

Academic freedom is obviously a very opportune argument for explaining the minimal willingness of universities to change, especially with respect to implementing a dual system of education requiring that academia be highly externally oriented. The dual training system, however, also enables academia to reconsider its role in a knowledge-intensive society, to take distance from familiar types of education and to stimulate the imagination in a critical exploration of new opportunities. It thus uses its renowned academic nature to design its own revitalization.

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