A COMPETENCY-BASED APPROACH TO COOPERATIVE HIGHER EDUCATION IN A KNOWLEDGE SOCIETY

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ABSTRACT

The emerging knowledge society is one of the main reasons that underlie the emergence of the interactive combination of learning and working in the university curriculum. Universities will be able to benefit from knowledge-intensive organisations when they become knowledge productive partners. The dual academic training can be an important instrument in developing knowledge networks in which universities and organizations participate. Though there are several other drivers for a cooperative dual university training system (the early introduction to a complex job market and the influence of recent educational psychology), this education form raises a lot of questions in the Netherlands. The fear for the loss of academic level and autonomy of the university-programmes inhibit the acceptance of coop academic education. Based on a literature study and secondary analysis of evaluation and policy studies with relation to coop academic education, the drivers for the development of coop academic education as well as the factors that inhibit the acceptance of coop academic education, are being distinguished. To further the conceptualisation of the dual system, a competency approach of academic education may play an important role. The advantage of competencies over traditional content descriptions is that such competencies can partly be developed and achieved outside the traditional university premises, in an authentic work environment. The competency-based curriculum of the master-programme on Human Resource Development at the University of Twente explores the possibilities that such a curriculum could have for the dual academic education system.

INTRODUCTION

Integrating work-based learning in the university curriculum seem to provides opportunities for higher education to connect with a knowledge society. Though, the coop academic education form, raises questions about what are the goals and outcomes of such education, and how to maintain the academic standards when part of the training takes place outside campus. Despite the arguments supporting expansion of the academic system to include a coop education option, fears and objections are abound. Many politicians, university administrators and faculty fear the demise of the academic values in university study. Academic education requires learning to make abstractions, to take distance, to encourage the imagination and to evaluate all opportunities critically. In general working environments are believed to not properly stimulate these qualities, as the daily grind prevails over creativity. The concern is that cooperative training systems will resemble less prestigious occupational programmes. However, 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 coop partners need to refute the level reduction argument. An approach that might reconcile the need for academic standards and the implementation of a cooperative educational programme is designing a competency based curriculum. The article reports on a number of studies on cooperative education in the Netherlands and the current development of a competency based curriculum at the University of Twente.

RESEARCH QUESTIONS

The main questions that will be answered in this article are:
1. What are drivers for the development of academic coop education?
2. What factors inhibit the acceptance of coop education in the university curriculum?
3. How can a competency approach support coop education?

METHOD

The article is based on a literature study and secondary analysis of evaluation studies of experiments on cooperative university education by the Dutch Inspectorate of Higher Education and ITS (the Institute of Applied Social Research in the Netherlands). The WDWO-research team (Cohen e.a. 2002) conducted a policy study for the University of Twente, which included a case study of the coop system of Aalborg University in Denmark. Coop education is introduced as an innovative strategy. Currently, a competency-based approach is being applied to the development of the new curriculum for the Masters programme on Human Resource Development.

QUESTION 1: WHAT ARE DRIVERS FOR THE DEVELOPMENT OF ACADEMIC COOP EDUCATION?

The main characteristic of the dual system 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. Various reasons underlie the dual university training system's emergence.

THE EMERGING KNOWLEDGE SOCIETY

The importance of knowledge in society and economy demands for a shift in higher education. When improving and innovating products, customer orientation and flexibility are key issues in European organisations (Tjepkema, 2002), organisations must learn quickly, drawing on information from internal en external sources (Kessels, 2003). Venkatraman and Subramaniam (2002) argue that the key resources that drive value creation are becoming knowledge and expertise, which are individual competencies. Higher education should contribute to the development of these competencies by creating learning situations that invite to curiosity, collaboration, involvement and sensibility (Kessels, 2002); learning situations like authentic working environments. Dual academic education provides opportunities to connect the traditional university premises to the working environment

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 both university-researchers and organisation-employers to participate in a dual training system. Cohen e.a. (2002) state that a the contact between universities and organisations might be of great importance to the knowledge productivity and applied research of the university. At Aalborg Universitiy the project work of the student provides possibilities for researchers to get impressions from practice more than once. The exploding number of corporate universities might be analysed as a need for closer cooperation between academia and corporations.

EDUCATIONAL PSYCHOLOGY

Observations from educational psychology justify closer consideration of the work-study combination. Constructivism promotes 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). Exposed to the realistic and meaningful contexts in the workplace, students will have an easier time acquiring abstract and generalizable domain knowledge and meta cognitive 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. Students in the Netherlands report similar learning experiences (Van den Broek, 2001; Geelen, 2000). Such views and experiences are strong arguments supporting the dual training system at universities.

THE JOB MARKET ORIENTATION

Finally, the one most frequently invoked reason for a coop higher education system is early introduction to a complex and demanding job market. Moreover, educated individuals are expected to possess competencies that are difficult to acquire in the traditional university lecturing room, such as communication skills, the ability to work together on a team and being comfortable in a work environment. Students have often the desire to learn about their domain of study from external experts (Van den Broek, 2001). A more pragmatic observation is that the typical full-time student has all but disappeared. 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, students indicate that they have an edge on the job market compared with full-time students (OECD, 1999). The main benefits mentioned in the OECD study on the transition from study to work are that students who have completed the new study-work programme of Limouilou College in Quebec thus far had a job upon graduation, performance improved, and contacts increased between faculty and the working environment (OECD, 1999, p. 93).

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, 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. In fact, scrupulous avoidance of learning situations throughout an academic programme for acquiring such generally acceptable competencies is even less justifiable. 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 remains a thorny issue, if only for fear of resembling occupational education.

A pragmatic reason for promoting dual course curricula is that the typical full-time student has all but disappeared. According to De Reuver (1999), Eighty percent of all students in the Netherlands 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.

Implementing the bachelor-master-system in European higher education may increase the number of (adult) university-students (Ministerie van Onderwijs, Cultuur en Wetenschappen, 2001). Regarding to trends as lifelong learning it is imaginable that students who already have jobs are motivated to develop themselves by studying on a bachelor- or master-degree. For the university it might be a great opportunity to offer education-programmes in which students would be able to combine their academic study with a job that is relevant to their field of study (Cohen, e.a., 2002).

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.

Despite the immense suspicion of dual training systems, many curricula already combine work and study. 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.

QUESTION 2: WHAT FACTORS INHIBIT THE ACCEPTANCE OF COOP EDUCATION IN THE UNIVERSITY CURRICULUM?

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 values in university study. In some cases they are referring to the level of academic education in others to academic autonomy.

THE ACADEMIC LEVEL

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. It is often submitted 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. In general working environments are believed to not properly stimulate these qualities, as the daily grind prevails over creativity. Once again, the concern is that dual training systems will resemble less prestigious occupational programmes. 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 (Kessels, 2000).

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 university faculty and employers explore.

An entirely different phenomenon arises as well. In selecting their student employees, participating employers 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.

The current experiments in the Netherlands give no reason for fearing academic level devaluation. The expectation that the dual system attracts highly motivated and talented students seems to be confirmed by the experimental programmes (Inspectie van het Onderwijs, 2001; Van den Broek, 2001).

ACADEMIC AUTONOMY

An often mentioned threat to the academic values resides in the potential loss of academic autonomy when implementing a dual system. In this respect Schuyt states: '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).

Justified interests among employers, students and university 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 employer has reason to highlight or – conversely – to obfuscate and distort certain research 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 scientific truth and economic interest.

Besides the feared influence on research results employers might be willing to influence the content of the curriculum in exchange for the salary they pay for the student-employee. When establishing a partnership between university and company for successful implementation of a dual training system, the learning potential of the work environment should become an integral part of the curriculum. In conceptualising, designing and developing such a curriculum the influence of the cooperating companies and institutions is obvious. However, this does not automatically mean a loss of academic freedom. From a point of view of quality assurance and accountability, the university staff should bear final responsibility for the academic qualifications. The study-work agreement between student, university and company should stress this typical faculty responsibility. A quality assurance system, that has not been established for dual systems (Inspectie van het Onderwijs, 2001), could provide an education licence for participating companies. Apparent lack of learning potential of the workplace, poor coaching of students and violation of the principal of academic autonomy would be reasons to recall the education licence. In the Netherlands several educational organisations have established the Foundation Hallmark Cooperative Education recently (Cohen e.a., 2002). This foundation is busy developing a system that could provide an education licence for working places that are offered by companies participating in the dual system.

QUESTION 3: HOW CAN A COMPETENCY-BASED APPROACH SUPPORT COOP EDUCATION?

In view of the complex and demanding labour market, recent insights from educational psychology and the emerging knowledge economy, integrating work-based learning in university education is a relevant issue. The coop system can enrich the traditional supply of higher education and strengthen the cooperation between universities, industry and institutions.

A declining level of university qualifications is not in the interest of any of the parties involved. Students explicitly choose for the coop system to upgrade their qualifications, even when the study is prolonged and the curriculum is burdened with extra study obligations (Van den Broek, 2001). Faculty see means to enrich the curriculum by offering authentic and realistic learning opportunities in the world of work. Employers, who are willing to participate in the dual university system are not primarily searching for cheap labour; their interest lies with attracting highly motivated and bright knowledge workers and with establishing sustainable relationships with knowledge centres like universities.

However, the further development of a system of academic coop education requires a number of advancements, among others: further conceptualisation of this specific type of higher education, a quality assurance system that makes explicit what we mean by academic standards and how students can meet these standards, and a clear description of responsibilities and obligations of the various parties involved.

One of the most promising approaches for further development of an academic coop curriculum is to set the academic standards in terms of competencies to be achieved by students. Competencies describe the capabilities students need to solve problems, design and conduct research, and to advice clients. Often it is difficult and time consuming to describe all the possible competencies to be achieved in an academic curriculum. Here, the description of a limited number of critical problem situations, design matters, or research approaches is often recommended in stead of

trying to list an exhaustive series of desirable skills coupled with practical situations. The advantage of competencies over traditional content descriptions is that such competencies can mostly be developed and achieved outside the traditional university premises, in an authentic work environment. A curriculum that is based on the theoretical content of compulsory textbooks is not likely to be attained in a coop system. However, when described in terms of capabilities, problem solving skills, research, design or consulting skills, the academic standards often include the founding theory, but on a competency level. The outcomes of the curriculum are stated in productive capabilities instead of reproductive knowledge items. The development of such capabilities needs to take place in active workshops, laboratories, field work, and real life work environments. Coop education is likely to benefit from a competency based curriculum. One could even argue that a successful coop curriculum employs competencies as the outcome standards. The other way round, a coop curriculum is probably not feasible when the desired outcomes are not stated in terms of competencies.

In an academic curriculum these competencies require general intellectual capabilities in solving specific problems. They are embedded in an academic field of study. The curriculum needs to encourage the desire to investigate and to propose and test unconventional solutions. A combination of various domains of study is recommended (Schuyt, 1998). Several Dutch researchers and policy-makers have thought about most important academic competencies. Holleman e.a. (1999), for instance, distinguish subject matter related competencies, generic competencies and specific competencies. Although such distinctions may make sense, they do not fulfil the need for unambiguous statements and clear standards as is advocated by using competencies as educational oucomes.

In the recent redesign of the Masters curriculum in Human Resource Development at the University of Twente (Netherlands), the programme is – more concrete - based on four main competencies: a. Designing, researching and improving learning environments in knowledge intensive organisations; b. Investigating and analysing factors that impact on the policy building on human resource development; c. Acting as facilitator and consultant on training programmes, design studies, evaluation and assessment of educational programmes; d. Researching human resource development problems.

These four domains of competencies can be developed and achieved in a coop educational system. Students alternate between campus and the world of work. They study training situations in practice and reflect on their findings with colleagues and academic staff. This curriculum offers professionals who have already jobs in the HRD-domain to study for an academic degree. Fulltime students are offered opportunities to combine part of their study with (paid) work in their field of interest, obtaining credits for the assignments they complete in the work environment. The student is being assessed on the basis of the documents and products collected in a personal portfolio.

The competency approach is seen as one of the possible solutions to overcome the problems that are often associated with combining an academic study with relevant work experience. Gradually, the competency approach, widely adopted in vocational education, is also accepted in higher education.

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