

The flexible professional in the knowledge society: conceptual framework of the REFLEX project

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The Flexible Professional in the Knowledge Society: Conceptual Framework of the REFLEX Project

REFLEX Working paper 1

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1. Introduction

Higher education policy has increasingly gained a European dimension with its own distinct influence over national education policies. It is clear that the Bologna declaration and the subsequent initiatives have put higher education in the centre of EU policy with the goal to create a “Europe of knowledge”. The EU’s stated strategic goal for the next decade is ‘to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion’ (European Commission, 2000). Universities play a vital role in this Europe of knowledge, as the recent communication of the Commission has made clear (European Commission, 2003).

Recently a major project was launched, the REFLEX¹ project, which aims to make a contribution to assessing the extent to which this ambitious goal is likely to be met, and to identifying possible stumbling blocks that may be encountered on the way. The project focuses first of all on providing a more detailed description of the demands that the modern knowledge society places on higher education graduates. A second major focus of the project is on assessing the degree to which higher education institutions in Europe are up to the task of equipping graduates with the competencies needed to meet these demands. Thirdly, the project looks at how the demands, and graduates’ ability to realise them, is influenced by the way in which work is organised in firms and organisations. Fourthly, because graduates are motivated by objectives that are broader than just the world of work, the project will pay explicit attention to the goals, aims and orientations of graduates. Finally, the project looks at the transition from higher education to work and later occupational outcomes, and at how these are affected by particular characteristics of graduates, higher education institutions, employers and the broader institutional, structural and cultural context within which all these actors operate.

The REFLEX project will be carried out in twelve different countries: Austria, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, Portugal, Spain, Switzerland and the UK. The major part of the project consists of a large scale survey held among some 50.000 graduates from higher education in these twelve countries. In each country a representative sample will be drawn of graduates from ISCED 5A who got their degree in the academic year 1999/2000. The data collection will take place in the spring of 2005, i.e. some 5 years after leaving higher education. The mail questionnaire will focus on educational experiences before and during higher education, the transition to the labour market, characteristics of the first job, characteristics of the occupational and labour market career up to the present, characteristics of the current job, characteristics of the current organisation, assessment of required and acquired skills, evaluation of the educational program, work orientations, and some socio-biographical information. Apart from this survey, a country study is conducted to identify the main structural and institutional factors framing the transition from higher education to work and a qualitative study to shed light on the main developments in higher education and in the economy that affect the acquired and required competences.

The REFLEX project adopts a multi-disciplinary approach to answering these questions. It will draw upon theories and insights from sociology, economics, psychology and educational science to develop an overarching framework. The present paper provides the basic elements of this framework.

2. The demands from the world of work

In recent years, three major trends have been identified that affect the demands that higher education graduates face. One obvious trend is the increasing emphasis that has been placed on education and training, which is seen by many as the most important factor affecting economic growth (see for example World Bank, 2002). The term *knowledge society* has been coined to indicate not only the expansion of participation in higher education or of knowledge-intensive or high-technology sectors of the economy, but rather a situation in which the characteristics of work organisations across the board change under influence of the increasing importance of knowledge (Teichler, 1999). Another trend relates to changes in labour market processes. Schmid (2000) introduced the concept of the *transitional labour market* to indicate how in modern society, the demarcation lines between work,

¹ The acronym stands for Research into Employment and professional FLEXibility. For detailed information on the project, see <http://www.reflexproject.org>

leisure time, education and care have been blurred, leading to increased mobility and flexibility patterns, to de-standardisation of the life course and to an overall focus on employability. The third trend relates to the internationalisation and globalisation of product markets and labour markets.

The abovementioned trends give rise to new demands on the competencies with which individuals need to be equipped. Higher education graduates have long been expected to become experts in their own professional domain. However, the dynamic nature of the labour market and increased mobility also implies a much higher degree of flexibility and the possession of broad generic competencies to ensure employability in a range of situations over their entire career. Moreover, the Lisbon goal includes strongly increasing the innovative capacities of the European economy, and an optimal use of the available human capital. Finally, the globalisation of the economy and society requires higher education graduates to be much more internationally oriented than before. Consequently, there are good reasons to believe that higher education graduates are expected to be more or less competent in at least the following five areas: professional expertise, functional flexibility, innovation and knowledge management, mobilisation of human resources and international orientation.

Professional expertise:

Many higher education graduates are expected to become experts in their professional field. Experts distinguish themselves from novices by their superior mental organisation of, and ability to recall, domain-specific knowledge, and by the way they approach problems, make diagnoses, use automated procedures, have intuitive feelings about solutions and correctly infer conclusions and interpretations (Boshuizen, 1989). Expertise implies, first and foremost, a high degree of *mastery of the knowledge and skills* that are relevant in one's own domain of work. Mastery alone does not however make someone an expert. A second characteristic feature of experts is an ability to use this mastery to *diagnose and solve complex problems* in their own area of work. As graduates gain more experience, they will develop tacit knowledge and an ability to quickly recognise patterns. Finally, since experts are often expected to act as an authoritative consultant or advisor for others, they need to be able to *command authority* and act decisively in uncertain situations. It is usually assumed that it takes 5-10 years of relevant work experience to become an expert in this sense (Hayes, 1981; Ericsson & Crutcher, 1990),² so few of the graduates approached in our survey will have fully attained this level of expertise. It is however of interest to obtain a view of how far the graduates have progressed along this path, and of course the degree to which employers demand such expertise.

Functional flexibility:

The world of work is dynamic rather than static. Rapid developments in technology, markets, organisations and relevant knowledge make it necessary that higher education graduates are able to take up diverse challenges, many not directly related to their own field of expertise, and to quickly acquire new knowledge. They must be broadly employable and have the ability to cope with changes (Schmid, 2000). This may relate to changes in the job content, mobility within the organisation to another job or mobility to other organisations. In order to be flexible, graduates obviously need a well-developed *ability to adapt to changes* in the environment, for example by quickly learning new knowledge and skills, by possessing a large reserve of general or multidisciplinary skills, and an ability to cope with changes. It is important to note that such a response, which can be characterised as 'changing the worker to fit the job' is not the only way graduates can respond to change. Another possibility is that graduates *change the environment* in which they work, so as to make better use of their existing skills despite the changes that have occurred in the demands being made of them. Finally, flexible graduates need to possess a high level of *ability to deal with change in a positive way*, seeing changes as windows of opportunities rather than as threats, being eager to learn and to try new things, and using their work as a tool for acquiring new competences through experience.

Innovation and knowledge management:

In considering the importance of higher education graduates for the knowledge society, it is important to take account of the fact that such workers are often expected to do more than simply carry out a set of prescribed tasks. In many sectors of the economy, employers look to highly educated workers to provide ways of expanding and improving the way in which they provide goods and services. This relates not only to the innovation capacity of higher education graduates, but also to their ability to create an environment in which knowledge production and diffusion is optimised, and to implement

² It should be noted that we make an analytical distinction between 'expertise', which refers to the ability to perform in an expert manner, and formally designated professional roles assigned to 'experts' working in certain occupations. Of course, many 'experts' in the formal sense will also possess a high level of expertise and vice versa, but the two concepts are not identical.

innovation in their own job as well as in the organisation as a whole (Cörvers, 1999). Hence the term *innovation and knowledge management* to indicate the whole process from developing ideas to implementation. There are thus various ways in which graduates can make a contribution. First of all, graduates who possess a high degree of *innovative capacities*, creativity, curiosity, a willingness and ability to question the status quo and so on can directly contribute to the development of new knowledge and ideas for the organisation to use. Secondly, since, not all innovations need to be developed within the firm or organisation itself, graduates can contribute to innovation by *gaining access to new ideas* developed elsewhere. For this reason, an ability to notice new opportunities, access to relevant networks and networking skills, ICT-skills, foreign language abilities and communication skills in general can be of crucial importance for the introduction of new ideas to the organisation. Related to this is the ability to *synthesize information* from different sources, to draw connections between apparently disparate subjects and to transfer existing ideas to new applications. Finally, since even the greatest ideas rarely implement themselves, an *ability to implement ideas*, to take an idea from the drawing board to the work floor, requires a high degree of organisational abilities, negotiation skills and assertiveness.

Mobilisation of human resources:

Higher education graduates are expected to have the ability to effectively mobilise their own competencies and actively steer and direct one's own work as well as that of others. Several aspects can be distinguished. First of all, graduates need to possess a strongly developed ability to mobilize and make use of their own competencies, which implies an ability to work autonomously when working alone, to cooperate fruitfully with others when working in a team, to manage their own skills, and to be motivated intrinsically by the work at hand. Secondly, graduates may be called upon to mobilize the capacities of others. This is associated with leadership skills, but the concept is broader, involving an ability to communicate ideas and inspire others, to plan and monitor work processes, and where necessary to be assertive and to take decisive action. Related to the first two aspects, graduates need to be able to organize work so as to make optimal use of the available human resources, creating synergies in teams, setting up clear lines of communication, and where necessary adapting the work environment to fit better with their own competencies and those of their colleagues or subordinates.

International orientation:

Globalisation and the blurring of national borders increase the importance of a strong international orientation. This requires not only a good command of foreign languages, but also an ability to understand and empathise with other cultures, a willingness and ability to appreciate the limitations of the own national context, in short the development of intercultural competencies.

It is obvious from this brief overview that the four demands are by no means mutually exclusive. There are for example good reasons to believe that expert knowledge is an important prerequisite not only for professional expertise but also for innovation and creation of new knowledge. Although the ultimate goal is different in each case, functional flexibility, innovation and knowledge management and mobilisation of human resources are all related in one way or other with graduates' ability to act as an agent of change. Moreover, there are overarching competencies like reflectivity (Rychen & Salganik, 2003) that may be important for meeting all these demands.

3. On the role of higher education

Graduates' ability to meet the demands that the knowledge society makes of them depends in no small part on the resources that they acquire through higher education. However, higher education policymakers face demands that are just as complex as those facing graduates. They have to consider how higher education can be designed so as to equip graduates with the competencies needed for successful performance in the knowledge society, or at least to lay the foundation for acquiring these competencies through work experience. In doing so, how do they strike a balance between the sometimes apparently contradictory demands made of graduates, such as the need for specialized knowledge and flexibility? How do they decide between investing in the competencies of the best and brightest, and making higher education more accessible to a broad range of young people? What further measures do they need to take to ensure that graduates quickly find their way in the world of work, for example by forging links with employers and employer organisations, by encouraging the direct acquisition of work experience during higher education, or by taking steps to improve the transparency and acceptance of higher education qualifications by employers? Finally,

given that education systems are each embedded within their own national constellation of institutions, laws, customs and so on, how quickly can they adjust to the essentially global challenges of the knowledge society?

There is strong evidence that higher education policy makers are well aware of the challenges they face. However, so far there is little evidence that this has led to an integrated view of the part higher education is required to play in the knowledge society. There rather seem to be competing perceptions of the problem. Notions of 'super-complexity' in society and economy (e.g. Barnett, 2000) suggest greater divisions of labour and a further fragmentation of academic disciplines in the university (Clark, 1996). On the other hand, notions of 'flexibility' in professional life suggest greater emphasis on generic 'transferable' skills in the workplace and interdisciplinarity and integration in the university (Mason, 2001). This tension can be resolved to some extent by offering a mix of specialized and more general programs. It is however noticeable that different countries arrive at distinctly different mixes, and that the relative merits of further specialization and greater flexibility are still subject of considerable discussion in most countries.

In addition to discussions on the types of competencies needed by graduates in the knowledge society and the ways in which these can be developed, debates have focused on the relative merits of strategies aimed at developing the talents of the top level of students, versus those aimed at increasing the accessibility of higher education. Proponents of the former viewpoint emphasize the economic advantages to be gained by a country whose higher education graduates perform at the cutting edge of new developments in science, technology and the economy in general, and the 'flipside' of this, the ever-present danger of falling behind in the race to be competitive with other countries. Advocates of the opposite view are more likely to emphasize the social and economic advantages of a large highly educated workforce, and the importance of accessibility to higher education from the point of view of social equality. In fact, increased participation in higher education has already led to a certain 'massification' of higher education (e.g. Scott, 1995; Gibbons et al., 1994; Trow, 1996, 2000). It is clear that higher education no longer *automatically* confers an elite status on its bearers. At the same time, there are strong indications that various 'elites' continue to play an important role *within* mass higher education in many countries, based on stratified higher education, protected labour market positions, or both (e.g. Brennan, 2002; Brown & Scase, 1994).

The competencies acquired in higher education are only useful as resources to the extent that they are put to productive use after graduation, particularly in the labour market. Discussions on the role of higher education often fail to take into account the fact that education *sorts and selects* existing qualities of its participants as well as contributing to them directly, and that employers are often strongly dependent on this function of higher education when making key labour allocation decisions. Macro-level discussions often implicitly lean on the *human capital* theory (Becker, 1964), which claims that higher education graduates earn more because the competencies acquired in higher education have made them more productive. While this is probably true to some extent, at least in the aggregate, it tells only part of the story. Scholars such as Spence (1973) and Arrow (1973) have pointed out that the selection, allocation and rewarding of individual employees takes place on the basis of *signals* such as formal qualifications as well as on the basis of productivity. This is usually explained in terms of incomplete information and bounded rationality. The signals form a solution to this problem, as they are assumed to indicate the average productive capacities of the group to which they refer. The *labour queue* theory (Thurow, 1975) adds an interesting twist, pointing out that many relevant competencies are not even learned in education, but picked up through work experience on the job. According to this theory, education is an indicator of low training costs rather than of high productivity. This alerts us to the fact that higher education doesn't just provide ready-made knowledge workers who apply their skills at work, but rather provides a basis for the development and refinement of competencies throughout the career. Finally, some scholars have questioned whether higher education has any effect at all on graduates' ability to perform, pointing out that this relation is in fact weaker than that between education and rewards (Bills, 2003). This has led *credentialists* such as Collins (1979) to claim that higher education does not lead to superior competencies, but is used by 'gatekeepers' to legitimise the rationing of access to high-status, highly paid jobs.

In reality, there is probably an element of truth in all these theories. The crucial point then comes down to specifying the contexts under which one or the other mechanism prevails. The mechanisms are likely to differ according to the kind of job or position, labour market segment (private/public, economic sector), and country. There are several characteristics of higher education institutes or higher

education programs that are thought to be relevant. For example, the *reliability* of the selection process is a factor that determines the trustworthiness of signals (Van der Velden, 2003). This may be affected by the degree of *selectivity* of entry to study programs or institutes, since high selectivity produces more reliable signals to employers that graduates will not fall below a certain minimum level of quality. Similarly, a high degree of *stratification* of higher education (division into distinct levels or tracks: Allmendinger, 1989) leads to a more homogeneous output per stratum, which further increases the reliability of the signals. The *standardisation* (Allmendinger, 1989) of curricula and examinations may also be important, since nationally recognised diplomas will be better known to employers, and therefore easier to use as criteria in selecting and rewarding personnel, than qualifications that differ in content from institute to institute. There is strong evidence that in countries characterized by a high degree of selectivity, stratification and standardization, employers are more likely to select and reward employees on the basis of formal educational qualifications than in countries where education is less regulated (Müller & Shavit, 1998). Of course, these characteristics can also vary within countries, between study programs and institutes. For this reason the *prestige* and *reputation* of the study program or higher education institute is another characteristic that may be relevant in the allocation process.

As mentioned above, the demands raised by the knowledge society comprise an essentially global challenge. There is however considerable debate as to whether globalisation leads to convergent national solutions to the challenges of the knowledge society, or whether different societal models will continue to coexist side by side. The Bologna Declaration signifies an attempt at an integrated policy response to the challenges and opportunities associated with globalisation, but the effectiveness of this response and the broader consequences for international collaboration and mobility, and for territorial cohesion within Europe and the wider world, are uncertain. If, as some have claimed, there are really different 'societal equilibria' (Maurice et al., 1982), attempts to harmonise only one societal domain while leaving others unchanged are likely to be fraught with difficulty.

The test of whether higher education is up to the challenges posed by the knowledge society will lie in the actual educational practices employed, and the concrete results achieved. The changing demands for graduate competencies in the knowledge society is reflected in the development of educational theories on instruction and learning outcomes at the level of individual study programs. Recent research suggests that there is a strong relation between the development of competencies and particular characteristics of the learning environment (Vaatstra & De Vries, 2004). It would go too far to fully discuss all educational theories on instruction and learning outcomes, but we can note a number of recent developments:

- *Situated learning* theories (CTGV, 1990; Glaser, 1991) emphasize that competencies and competence development are context-specific. They stress the importance of coherence and context-relevance (e.g. real life experiments, simulation, practical work experience) in the design of the curricula in order to develop professional expertise.
- *Self regulated learning* theories point to the relevance of meta-cognitive abilities and information processing strategies of students (Kolb, 1984; Vermunt, 1992). Learning styles differ between students ranging from a memorising and rather atomistic way of learning towards a more constructivist approach in which concepts and theories are actively incorporated in a coherent body of knowledge. An interesting finding in this respect is that the way examinations are organised may foster a different learning style than the curriculum actually intended (Semeijn & Van der Velden, 2002): e.g. multiple choice exams foster different competencies than the writing of essays, although the actual curriculum may be quite the same.
- *Active learning* theories reject the traditional naïve model of the teacher as the expert, filling so to say the brains of the students with his knowledge. 'Powerful learning environments' (De Corte, 1990) and active instructional methods like problem-based learning and project-oriented education are thought to foster the development of generic competencies like problem solving and meta-cognitive abilities.

In addition to these innovative ways of learning based on elaborate theories on how individuals actually learn, educational research has traditionally stressed '*time on task*' as one of the most important factors affecting student outcomes. That is the actual time students spent on education (within the class-room and through self-study) is a good predictor of the learning outcomes net of other

characteristics such as intelligence.³ Other aspects of education that may help prepare graduates to meet the demands include:

- *Complementarity between education and research*: it might make a big difference whether graduates study at an institution with many leading experts in their research field, and if so to what extent they have become involved in research during their study. Much is expected of universities as motors of innovation. It is important to see to what extent this 'rubs off' on graduates, in the form of higher levels of innovative competencies.
- *International focus of education*: there has been a large increase in recent years in the emphasis placed on the acquisition of international experience, in the form of exchange programmes, internships in foreign companies and the like. Obviously this increases the international orientation of the students, but it may affect other areas of competence as well.

4. Organisational goals and strategies

A well functioning system of higher education is a necessary, but not sufficient, condition that must be met in order for the Lisbon goals to be achieved. At least as important is how organisations make use of the competencies of higher education graduates. The knowledge society is expected to affect all kinds of firms and organisations, so it is important to look at demands made in both the public and private sectors, small and large organisations, local, national and multinational firms, producers and providers of services, etc. That said, it would be naive to expect that these distinctions are not relevant. For example, in the private sector, competition and the pursuit of profit form a powerful incentive for firms to get the most out of their personnel. Such incentives are largely lacking in the public sector, although there has been a tendency in recent years for public organisations to operate in a more customer-friendly manner and be held more accountable. In any case, it is important to remark that in both public and private sectors, pressure to perform need not translate into the demands typically associated with the knowledge society. This will depend at least at much on the specific characteristics of the organisation. The flourishing of smaller organisations is often seen as a sign of a highly dynamic economy, even though such organisations have much less budget for training, research and development than larger organisations, especially multinationals which command a large share of the relevant market. Manufacturing and service organisations face different restrictions in terms of availability of raw materials and required proximity to markets. These restrictions also vary with the specific type of product or service being provided, for example knowledge intensive, high valued-added goods and services versus more traditional and less technologically sophisticated goods and services.

To some extent the strategies followed by firms and organisations will be determined by the kinds of characteristics described above. However, even organisations that provide similar goods or services and serve the same market may follow different strategies in pursuing their goals. This may lead to distinctive differences in the manner in which staff are recruited, selected and allocated, in the manner in which the organisation responds to changes in the environment, and in policies relating to training, innovation and so on. It is likely that such differences will have important consequences for the kinds of role that organisations assign to higher education graduates. It is important to build up a picture of these roles of graduates: do they supervise others, if so how many, what degree of autonomy are they given in setting out work goals and strategies, to what extent do they collaborate with colleagues and clients, and to what extent does their own performance affect, or become affected by, the performances of colleagues, subordinates, and the work unit as a whole. We need to gain insight into the professional role of graduates, the degree to which they are seen as a source of information and authority, and the main dimensions of their professional identity and responsibility. In relation to functional flexibility, the stability of the graduates' careers and job descriptions is important, as is the role assigned to graduates in responding to external changes. A key focus will of course be on the role assigned to graduates in developing, introducing or implementing innovations.

As a result of all these differences, the specific 'mix' of demands will differ between groups of graduates, between firms, between occupations, between economic sectors, and even between countries. This may give rise to more or less distinct types of roles or positions. For example, firms and organisations that operate at the forefront of their respective fields, and as such form the leading edge of the developing knowledge society, are likely to recruit candidates for key positions from the

³ As Thomas Edison famously claimed, genius is 1% inspiration and 99% perspiration.

pool of higher education graduates. We would expect graduates who are groomed for such 'elite' positions of power and influence to be recruited differently and be subject to different demands than higher graduates who fulfil 'mass' positions in the knowledge society.

Within 'elite' and 'mass' positions there are also likely to be differences in demands, depending for example on whether the production of the relevant goods or services require the use of detailed specialized knowledge, skills or routines, as opposed to a high level of multidisciplinary knowledge or generic skills. *Elite specialist* positions such as high level physicians, lawyers and accountants have a high status based largely on their supposed high degree of expertise, and recruitment for this group is often highly regulated and based on educational credentials, giving them a protected position in the labour market.

Elite generalists are often those occupying the main decision-making positions in society: high-level management positions in private companies, top politicians and civil servants, and in many cases those working directly under these top-level positions as advisors, opinion leaders and so on. Such workers are likely to require a certain amount of expertise in the form of 'dossier-knowledge' but the demands made on them in terms of mobilisation of human resources may be greater. In some countries such as the UK, Japan and France, the prestige of the university (Oxbridge, State University, Grande Ecole) is a typical requirement for entry into this elite group. In other countries, in the absence of such elite schools, selection into these positions will necessarily follow a different route.

As the terms suggests, 'mass' positions are more plentiful, and recruitment for these positions is likely to be less stringent than for 'elite' positions. This by no means diminishes the importance of these positions for the knowledge society. A major force driving the early expansion of higher education was the growing demand for large numbers of high-level specialists, such as teachers, nurses etc. The professionalisation of these *mass specialist* jobs required high-level training, sometimes organised in separate vocational colleges. Like elite specialists, the workers are likely to be required to possess a high degree of specialized knowledge, but unlike elite specialists they need not necessarily be leading experts in their field. Recruitment to these positions are also likely to be subject to strict requirements in terms of qualifications, although unlike elite specialists the entry into the qualifying programs is much less heavily rationed. Their position in the labour market is therefore less secure and more dependent on supply and demand fluctuations. The status of the mass specialists is also much lower and has been decreased as a result of the expansion of higher education.

More recently, the growth of higher education seems to stem from the demand for more *mass generalists*: studies like economics and business administration prepare not only for the elite positions, but serve increasingly as a source of providing graduates with a high level of generic competences for mass positions in marketing, sales, as well support staff positions. Expertise and innovation and knowledge management is likely to be less important for occupants of these positions than functional flexibility. Recruitment for such positions is likely to be much less regulated than for the other categories.

5. Graduates' goals

Until now, the demands have been viewed almost exclusively from the point of view of social welfare, that is to say what is needed in order for the economy and society to function adequately. At least as important is to look at individual welfare, that is the extent to which individual graduates are able to realise their own individual goals. This dichotomy is what the DeSeCo group had in mind when they formulated a list of 'key competencies for a successful life and a well-functioning society' (Rychen & Salganik, 2003). Graduates strive for life goals that are much broader than just the world of work. These goals may differ between individuals, and may also change over the life course. All graduates strive in their own way to build a meaningful life for themselves, but participation in higher education and the graduate labour market may play a very different role for different groups of graduates. For some graduates participation in higher education may be primarily an instrumental investment to allow them to realise later goals in the labour market and broader life, while for others it may be an experience to be cherished in itself.

A similar story applies to participation in the labour market. For many graduates, concerns about a smooth transition from study to work, financial security and confidence in their future economic well-being may be at least as pressing as concerns about the particular role they play in the knowledge

society. Even those graduates who are interested in developing and applying their knowledge may do so mainly for the sake of their own sense of professional identity and the satisfaction they personally derive from performing as a professional, so that their contribution to the performance of the organisation may be more instrumental than a goal in itself.

Taking these considerations into account it is clear that a balanced assessment of educational and labour market outcomes needs to take a broad range of both intrinsic and extrinsic rewards into account. The economic and sociological literature shows a large range of indicators that express labour market success. Some of these focus on success in the early transition phase (e.g. search duration to first relevant job, number and length of unemployment spells, number of job applications etc). Others focus on career development, as expressed for example by changes between initial and current employment status. Much attention has been paid to the objective characteristics of the current employment situation. A broad distinction can be made between indicators related to employment chances on the one hand and to job quality on the other hand (Van der Velden & Wieling, 1994). As each of these indicators taps of different aspects of success and also relate to different background factors (Bosker et al., 2001), a broad range of these indicators seems warranted, including employment versus unemployment, permanent versus temporary position, full-time versus part-time job, and earnings. At least as important however are subjective success indicators such as job satisfaction, the worker's own evaluation of the quality of the job match, and more generally job characteristics that not only fit their educational qualifications, but also their personality traits (Holland, 1985; Gottfredson, 1996). Since work is just one aspect contributing to overall life satisfaction, it is important to consider the relationship between job satisfaction and achievement at work on one hand, with satisfaction in other areas of life and life satisfaction in general on the other.

An important aspect of the career development of graduates is to investigate to what extent and in what ways graduates develop a sense of professional identity. Professional identity may be important as an outcome that is valued by graduates. It is also important in other ways, since it can frame and filter the options that graduates perceive as available in terms of how they approach their work and make career decisions. Within-country and between-country differences are important: professional identity may be primarily exclusive in some cases ("as a professional I should not be expected to do such things") but more inclusive in other situations ("as a professional I can take on the whole world").

Attention for the subjective experience of graduates helps us make sense of the career development of graduates. Most indicators of the transition phase will not make much sense if they are not placed in the perspective of what graduates seek to achieve in their lives in the longer term (Blossfeld, 1986). Some of the jobs that graduates hold in the beginning of their career may not be very successful in terms of earnings or job security, but they may nonetheless offer far better long-term prospects than other jobs that pay better. People will choose jobs not only on the basis of current rewards, but also on the basis of longer term goals like future promotion and career possibilities. Moreover, people strive for a range of life goals and professional success is only one of them. This broader perspective not only stresses that time is a distinctive feature of careers, but also points out that transitions on the labour market are closely related to transitions in other life spheres. For this reason, it is of importance to pay attention to factors that may influence transitions in the private sphere, such as residential mobility and family formation. These transitions are not only important in their own right, but may help or hinder graduates striving to come to terms with the demands in the world of work. The ability to reconcile demands in different life spheres may therefore be a strong determinant of success in the occupational career for many categories of graduates.

Of particular interest in this respect is the distinction between different social groups, and in particular between women and men. The growing participation by women in education and the labour market has meant that the traditional division of roles between men and women and the 'standard' biography attached to these roles no longer automatically apply. Nonetheless, the labour market careers of female graduates still show marked differences to those of men, and returns to education are generally lower for women than for men. Sex segregation between (Jacobs, 1996; Bradley, 2000; Charles & Bradley, 2002) and within (Arnesen & Baekken, 1998; Brynin & Schupp, 2000; Christie & Shannon, 2001) fields of study is still prevalent and such differences, have a substantial impact on the returns to education (Rumberger & Thomas, 1993; Terrel, 1992). In general it can be said that the increased labour market participation of women has been accompanied by a general blurring of the demarcation between work, care, education and leisure time. This requires not only organisation skills

like time management, but also the ability to steer their own career in a way that is in line with broader life goals ('career realisation', see Meijers, 1995).

6. Search, selection and adjustment mechanisms

Job search and selection

The separation of education and work into two distinct systems implies that most graduates will have to spend some time looking for a suitable job, and conversely employers will spend time in the selection of personnel. New graduates rarely have the exact skills employers require. This is not (necessarily) a reflection on the shortcomings of higher education. Some skills are best learned on the job, and higher education is expected to do more than providing a narrowly described set of directly utilisable competencies. The problems are aggravated further when there is an imbalance between aggregate supply and demand, where there are more graduates with certain skills than employers need, but a shortage of graduates with other skills. Even where the aggregate supply of skills does match aggregate demand, matching the right person to the right job is no trivial task. Both employers and graduates possess at best imperfect information. Taking these things into account, it is not surprising that both employers and graduates invest considerable time and resources into the process of job search. In some cases, this takes the form of specific institutional arrangements, like professional degrees, titles or competitive exams needed for access to particular occupations, or more or less formalized links between higher education institutions and employers that facilitate the transition from school to work. In the absence of such arrangements, the initial match between available and required human capital is likely to be heavily dependent on signals (Spence, 1973) emitted by one party and picked up by the other as to the likely quality of the potential match, and on the search strategy used by both parties. Obvious signals include the specific degree obtained and the job title or description as made known by the employer, the reputation of the study program or institution from which a person has graduated, relevant work experience and additional educational qualifications. Since job search is essentially related to a lack of information by both parties, access to relevant social networks that can provide a shortcut to a good match may be crucial in many cases. A specific issue here is the question of whether access to relevant resources differs between groups (gender, social background).

Adjustment mechanisms

Regardless of how much both parties invest in job search, the initial match is unlikely to be perfect. In fact, the initial transition phase is often characterised as being 'chaotic' (Hannan & Werquin, 1999). Due to a lack of adequate information and misreading of 'signals', transactions take place that are not satisfactory in the eyes of either graduates or their employers. To complicate matters even further, in many sectors of the labour market work is constantly changing. As a result, the adjustment mechanisms employed by graduates and employers are of great importance. There are several distinct types of adjustment strategy. One way of dealing with mismatches is by job shifts, which can be initiated by either graduates or employers. Graduates in jobs that don't match their own interests and capacities may look for alternative job opportunities that suit them better. Alternatively, employers who are dissatisfied with the current incumbent may terminate his/her contract and look for a candidate with more appropriate skills. It is worth remarking that the degree of success of the initial transition may not only be important in the short term, but could affect graduates' prospects in subsequent shifts, for several reasons. To the extent that some graduates quickly obtain access to jobs with a high development and learning potential, graduates whose start is less auspicious may find it difficult to catch up. There may also be an indirect effect, if potential future employers regard a poor start - low-level first job, long search and/or unemployment duration - as a signal of inferior quality and are reluctant to give these graduates an opportunity to prove themselves.

A second way of adjusting to initial mismatches and/or changes in job requirements is by learning new skills, or new ways to apply old ones. This points to the importance of acquiring not only directly applicable competencies in higher education, but also to more general competencies that are more durable or more broadly applicable, that are readily transferred to new situations, or that enhance graduates' ability to learn on the job. It also points to learning opportunities as an important job characteristic of jobs and careers. Sicherman and Galor (1990) regard the first years in the labour market as a learning process. Graduates take jobs in which they can acquire more competencies, but also learn about their preferences and capabilities by switching between jobs. Early experience might complement competencies acquired at school. Graduates from educational systems that are more

practically oriented, in particular those that place a strong emphasis on direct acquisition of work experience during the course, might therefore experience less problems in the transition from school to work. It is possible (although far from obvious) that graduates of such courses will lack the more general competencies needed to adjust and learn on the job.

Graduates can also adjust by changing the job to better fit their own capacities. This will not be possible in all cases, and will depend to a high degree on the flexibility of the employer, and the rigidity of the job description. Given the supposed importance of higher education graduates for introducing innovations, spreading knowledge, adjusting to unexpected demands and mobilizing human resources in general, a highly rigid job structure may act as a barrier to the necessary adjustments. At the same time, a certain degree of rigidity may be needed in order for mutually beneficial transactions to take place between graduates and employers: neither would invest much in a relationship that could be turned on its head or terminated within a short space of time. In high-level professions a great deal of the behaviour and actions associated with acceptable professional conduct are encoded into detailed rules and guidelines.

7. Structural factors

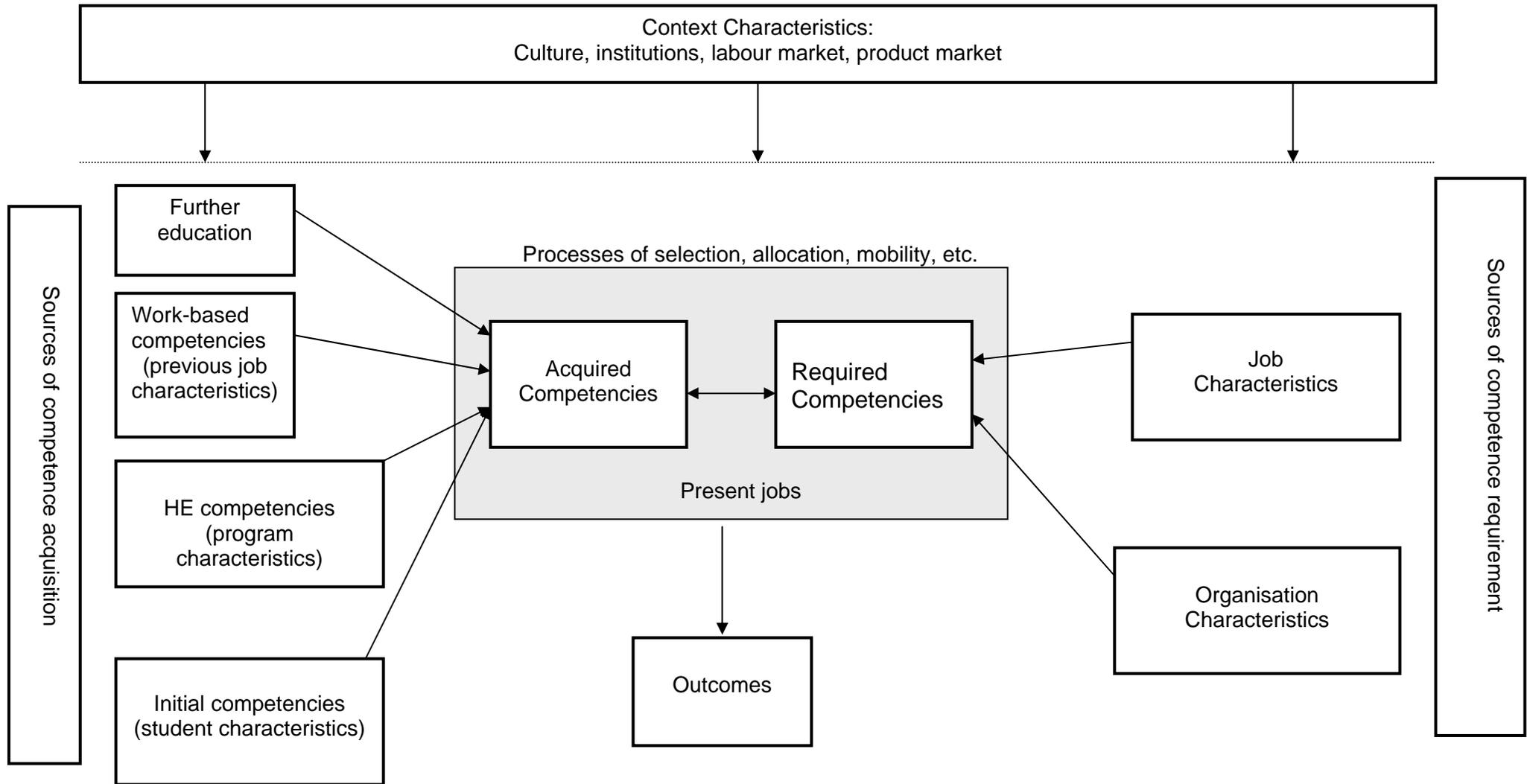
The above relations are framed by cultural, structural and institutional factors at different levels: national level, economic sector and the level of individual institutes of higher education. Cultural factors influence the development of education and labour market in a country. The extent to which values relating to for example social equality, solidarity and personal freedom are emphasized in a country helps shape the goals pursued by actors at all levels, as well as the methods used to pursue these goals (Hofstede, 1984). For example, organisations often tend to exhibit 'homosocial reproduction' by a process of Attraction, Selection and Attrition (ASA, Schneider, 1987) in which organisations focus on selecting and keeping personnel that fit the overall organisation's culture and value system.

The transition of young graduates into the labour market is also constrained by structural and institutional factors (Hannan et al., 1996; Heinz, 1999; Ryan, 2001; Müller & Gangl, 2003). It is obvious that the integration of young people in the labour market is greatly affected by general labour market conditions (Van der Velden & Wolbers, 2003), youth cohort size (Macunovich, 1999) and relative size of the different educational levels (Asselberghs et al., 1998). Even more important from a cross-national perspective, are the institutional differences between countries that affect the integration process of newcomers on the labour market. Educational systems vary widely in the extent to which they are stratified and standardized (Allmendinger, 1989), the extent to which they have a more academic or vocational orientation (Shavitt & Müller, 1998, Ryan, 2001), the existence of direct linkages between school and work (Hannan et al., 1996) or the flexibility of pathways (Müller and Gangl, 2003). Similarly, countries differ in the extent to which internal labour markets (ILM) or occupational labour markets (OLM) prevail (Marsden, 1990), the degree of labour market regulation (Hartog & Theeuwes, 1993; Esping-Andersen & Regini, 2000; Ryan, 2001) and employment protection (Lindbeck & Snower, 1988) and the degree to which active labour market programmes have been established (Ryan, 2001). These structural and institutional factors determine the macro level opportunity structure that shapes and constraints the interactions at the micro level between graduates and employers.

8. Summing up

In this paper we have used different theories from a range of disciplines to develop a conceptual framework for the REFLEX project. The main elements of the framework are outlined in chart 1. The framework will be used to guide the development of the instruments that are deployed in the project: the questionnaires for the survey among graduates, the qualitative study as well as the country study. During the project, this conceptual framework will have a continuous status of 'work in progress', indicating that an important outcome of the work in the coming years will be to further develop our understanding of the mechanisms behind the transition from higher education to work.

Chart 1: Demands on Higher Education



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