Global perspectives on higher education

Higher Education and the World of Work
Conceptual Frameworks, Comparative Perspectives, Empirical Findings

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What does higher education offer to make students competent actors in the world of work and other life spheres? This issue is most controversially debated in economically advanced countries since about four decades when higher education in economically advanced countries began to serve larger ranges of the occupational pyramid than merely the intellectually and professionally chosen few.

The author of this volume analyzes a broad range of issues over four decades of his academic career. Employers’ and graduate surveys, secondary analyses of education and employment statistics as well as analyses of policy and academic debates form the basis of the key argument: Neither trust in expectations formulated by employers or in income and status as measures of successful study nor isolated claims for the pursuit of academic knowledge for its own sake and for the critical functions of higher education are a suitable reference frame for understanding the dynamic links between higher education and the world of work. A ‘match’ between the number of graduates and the corresponding positions or between the competences acquired during study and job requirements cannot be expected. Students are more ambitious and strive for a broader range of goals than they can expect to be rewarded. Graduates have to be both highly qualified experts and sceptics as far as conventional wisdom is concerned, and they have to be prepared for indeterminate tasks.

Key themes of this collection of essays are: the causes and consequences of an imperfect ‘match’ between higher education and employment; the tensions between ‘employment’ and ‘work’ orientation in higher education; opportunities of a ‘highly educated society’; the dynamics of the variety of students, the patterns of the higher education system and the horizontal and vertical diversity of careers; different notions of higher education and the world of work among economically advanced countries; major controversial notions of professional relevance of study in policy and research debates.
HIGHER EDUCATION AND THE WORLD OF WORK
GLOBAL PERSPECTIVES ON HIGHER EDUCATION

Volume 16

Higher education worldwide is in a period of transition, affected by globalization, the advent of mass access, changing relationships between the university and the state, and the new technologies, among others. Global Perspectives on Higher Education provides cogent analysis and comparative perspectives on these and other central issues affecting postsecondary education worldwide.

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CHAPTER 1

HIGHER EDUCATION AND THE WORLD OF WORK:
A PERSONAL VIEW OF CONTINUITY
AND CHANGE OF ISSUES
(2008)

1.1 EARLY IMPRESSIONS

I have had the opportunity to conduct research and to observe the public debates on
the relationships between higher education and the world of work for forty years.
Therefore, I take the liberty to start this book with a biographically shaped account
of the theme under consideration: a report how I perceive the debates on the rela-
tionships between higher education and the world of work and how I myself tried
to contribute to better understanding of the issue (cf. also the collection of essays in
the German language in Teichler 2003 and in the Spanish language in Teichler
2005).

During my last year of secondary education – during the early 1960s in the Fed-
eral Republic of Germany – I became strongly aware of the relevance of choosing
a field of study for the rest of one’s life. Teachers, parents, and relatives as well as
the occupational counsellor of the public employment agency, whom I had con-
sulted, underscored that the choice of the field of study was more or less the choice
of the subsequent occupation. I heard most frequently that interest in certain pro-
fessional practice or success in a certain subject learned in school would be the best
criteria of choice. This led me for some time to believe that I should enrol in phys-
ic. Eventually I made the abstract decision to choose a field of study which was
neither a subject in the school curriculum nor was clearly linked to any profes-
sional area. Actually, I faced enormous difficulties in finding such a field of study.
As those whom one usually could ask for advice only shook their heads I addressed
elder brothers of my classmates whether they could identify such types of fields of
study at their university. Fortunately, I got various responses, and my elder brother
even presented me a book describing sociology as a discipline. I opted for sociol-
ology – only to find out later that I was part of the gradual change process in the
relationships between higher education and the world of work: that those fields of
study grew which are not closely linked to certain occupational areas and that
many graduates even from fields seemingly linked to certain occupational areas
more frequently end up in other areas.

I was lucky to finance my fourth to six semester in the framework of a research
project. I was invited by a professor who later became the supervisor of my doc-
toral dissertation to conduct interviews on the professional concepts and activities
of protestant ministers and to be involved in the analysis of the findings of this
study (the results were eventually published in Spiegel and Teichler 1974). I re-
member that I contributed one observation to the analysis: the ministers obviously
CHAPTER 1

suffered from the fact that most persons they met had very vague ideas about their professional tasks of ministers and were highly sceptical as far as the relevance of these tasks are concerned. In response, the ministers tended to underscore their relevance in the usual way persons in a secular achievement society do: they tended to stress at any conceivable occasion that they are very busy. Ironically, their professional justification was bound to undermine their opportunities to do professionally meaningful work, because people wanted to consult a minister only when they had got in trouble and needed a person who is willing to spend much time with them, listen to their concerns and eventually consult them.

Subsequently, I got a contract as “free research associate” in the Max Planck Institute for Educational Research already while being a student. My tasks were to advise researchers how to formulate questionnaires, administer empirical research processes and help to analyse quantitative data. Concurrently, I was encouraged to choose a thematic area which could be my own field of research subsequent to graduation. As regards the latter, I got most intrigued by a paradox of that time: on the one hand, the view spread in the late 1960s that educational expansion was desirable and an irreversible trend as well; on the other hand, a conviction was widely shared – certainly in Germany, but certainly not only there - that the growing enrolment rate in higher education was bound to lead to a catastrophe on the labour market. For example, the first systematic forecast on the graduate labour market in the Federal Republic of Germany, published in 1968, predicted that the number of graduates around 1980 would be twice as high as the number of typical job openings for graduates. I came to the conclusion that this paradox could be a good starting point for academic inquiry. And it was part of the academic climate of this research institute that I would have to study both the theoretical debate and contribute to it as well as to find an original way of empirical study.

1.2 “DEMAND FOR INEQUALITY” AND THE OPPORTUNITIES AND DANGERS OF “ABSORPTION”

I was impressed by the decision of my colleagues at the Max Planck Institute to counter the conceptual bias of restrictive manpower requirement arguments by undertaking a survey on the careers of graduates from a newly established field of study – a field which by definition was not satisfying established demand, but providing a new supply, thus forcing the graduates themselves to offer an unexpected supply of competences and contribute to a dynamic process of redefinition of “demand” in a society which has to learn that a growing complexity of knowledge is the demand of the future. Actually, my colleagues found out that about one third of graduates from the new field of political science got professionally active in occupational areas which suited their area of expertise. Another third took over positions suitable for university graduates but possible for graduates from other fields of study as well. Finally, one third ended up in positions which did not seem to require a university degree (Hartung, Nuthmann and Winterhager 1970). The findings suggest that the employment system is more open to unexpected supply than one would have thought traditionally, but that choosing a field not leading to the beaten track implies quite a risk.
I myself decided that I wanted to analyze the conditions for the absorption of graduates in a country or in countries in which the graduation quotas of the corresponding age groups were substantially higher than in Germany. I considered the US and Japan as possible options. The director of the National Centre for Educational Research in Tokyo invited me to his institute; he was convinced that there should be more researchers in other parts of the world who include Japan in comparative studies on educational research, and he was convinced that I could have a secondary motive to be among them, because my wife is Japanese.

In my doctoral dissertation and in various other publications in the early and mid-1970s I underlined that Japan is not an exotic exception as far as the relationships between education and work are concerned, but rather a prototype of a “modern education society”. Employers in Japan at that time – from the mid-1960s to the mid-1970s – were not convinced that the growing supply of graduates was needed, but they accepted the expansion as the consequence of an open meritocratic society where ambitions for educational success spread and should be rewarded. They increased the job openings for graduates by means of “vertical substitution”, i.e. gradually opening up positions to graduates which are almost as demanding as typical graduate positions and previously had been filled by persons with a slightly lower level of educational attainment. The employers in Japan funded this process by a step-wise reduction of the income advantage of the university graduates as compared to those entering the labour market without a degree. This process was facilitated by the fact that most graduates expected a job rank commensurate to their rank of educational attainment and that most employers did not expect to recruit specialists. Absorption seemed to be easy, but this certainly cannot be the only criterion for a “good” relationship between higher education and the world of work: from my perspective, the Japanese solution undermined “curricular relevance” and “professional identity”; moreover, tiny distinctions of education status, i.e. possibly marginal differences of reputation among the universities, would become increasingly relevant for one’s career, thereby transforming education to a rat race for tiny educational advantages (see Teichler and Teichler-Urata 1975; Teichler 1975, 1976, 1977).

Concurrently, I studied the political debates and the available research on the relationships between higher education and the world of work in comparative perspective. The request by the International Labour Office to write a trend report on this issue provided a good opportunity to synthesize the state of knowledge and debate (Teichler, Hartung and Nuthmann 1976, 1980). I came forward with a developmental theory according to which the relationships between higher education and employment are not primarily driven anymore by a demand for certain skills, when “mass higher education” (Trow 1970, 1974) was imminent, but increasingly by concerns how growing numbers of highly educated persons could be made compatible with the existing inequities in the world of work. I argued that “demand for social inequality” (Teichler 1974) was the rule of the game (cf. the following text no. 1).
CHAPTER 1

Text 1: Educational Expansion, Qualification and Status Distribution

The significance of the changes in the relationship between qualification processes and status distribution occurring since the 1960s becomes particularly evident when viewed in the context of historical developments.

In traditional society, the individual’s social position was as a rule determined directly by his or her social origin – social status was “handed down”. In a long process by which skills and knowledge were passed on from one generation to the next, qualifications were acquired through familiar socialization and long periods of apprenticeship. Meanwhile, specific institutions sprang up through which the knowledge and skills needed for particular occupations were transmitted. Thus education – save in rare instances – did not determine social positions, but rather was one of its attributes.

These traditional paths to qualification and the underlying social structure were severely jolted by the coming of industrialization. Traditional patterns of socialization and ways of transmitting knowledge were no longer equal to the dynamics of occupational requirements, changing as they were under the impact of economic developments. Moreover, it could no longer be taken for granted that power should continue to rest in the hands of a small group for whom privilege was hereditary. Under these circumstances they developed a systematic and – as industrial development preceded – ever closer inter-dependence between the organized acquisition of qualifications and status distribution. It is characteristic of this latter stage that status distribution was a matter of principle open and oriented toward a certain level of qualification. The promise of social advancement served, under these circumstances, to stimulate the acquisition of required qualifications. At the same time, social inequality was alleged to be the equitable reward for the performance society required, thereby guaranteeing that society would continue to function smoothly.

This development has been accompanied by a growing sense of public awareness of the fine distinctions that exist in the system of rewards, and of the connection between educational achievement and career and social status. This point is illustrated by the fact that more people are becoming conscious of the differences in social opportunity associated with the various types of education available, and consequently seek access to those educational institutions which promise better career opportunities and higher social status.

This process of becoming aware and responding is, of course, subject to fluctuations varying with views, on whether a shortage or oversupply of qualifications is thought to exist.

– In the event that the education system’s output of qualifications actually or supposedly falls short of the requirements of the occupation system, the above-mentioned relationship between qualification and status assignment can be put to effective political use: emphasis is then placed on the open character of the education system. At the same time, measures are taken to render access to hitherto exclusive educational institutions easier.

– On the other hand, the close connection that exists between qualification and status distribution turns out to be politically inconvenient when it is felt necessary to reduce the supply of qualifications as more people are seeking higher education. In such situations the general practice is to try to de-motivate potential students by persuading them that the connection between educational achievements and chances of acquiring status has become tenuous, and that other criteria are now more decisive in opening the way to high-status positions.

to be continued
Under such circumstances, no policy to reduce a surplus of qualification would have a choice other than actually reducing the social reward for additional education. This however, calls in question the legitimization that educational achievement gives the system of social inequality throughout the industrialized world. This, in turn, would mean constantly re-examining the connection between qualification and status distribution in line with prevailing assumptions about what qualifications are required.

It seems, however, that once a certain measure of interdependence has developed between qualification and status distribution, the tie cannot be loosened without there being consequences. Society cannot switch back and forth from being open and achievement-oriented to the very opposite. Attempts to cut back expansion administratively the moment an oversupply of qualifications is thought to exist appear, in fact, to sharpen public awareness and simply strengthen the demand for higher education.

Various factors have contributed to creating in many countries a far greater individual demand for status-promising education than widespread notions about qualifications requirements would deem advisable. Studies in countries where the trend toward mass higher education is more pronounced show that this development tends to culminate in a state of affairs in which the education system’s output appears out of step with the existing social and occupational structures, in terms both of qualification and status distribution.

This appears to mark a fundamental change in the way qualification relates to status distribution. If the two are no longer interdependent, then one of them might come to dominate: it is conceivable that if qualifications become more closely adjusted to demand, educational distinctions will no longer serve to legitimize social inequality. It is equally conceivable that if status continued to be based on educational success, it would prove impossible to bring the supply of qualifications into line with demand. The fact is that the latter of these two tendencies is prevailing: status distribution is beginning to dominate. Despite a substantial reduction in educational differences, education continues to have a status-distributive function. The importance that was once accorded to larger differences in educational achievement is now accorded to relatively minor distinctions, for example, in prestige between two otherwise equal-ranking institutions.

Throughout all this, qualification and status distribution continue to relate to one another to the extent that educational achievement is rewarded in terms of status, and status distribution serves to stimulate qualifications. However, as the situation changes, it is no longer a simple matter to reconcile the need to keep a balance between the provisions and the requirement for qualifications, nor to legitimize the prevailing system of social inequality. In contrast to our thesis that a “dominance of status distribution” is developing, there appear to be a number of other conceivable possibilities for reconciling the discrepancies we have been describing. First, a reduction in the discrepancies with regard to length of schooling and a lessening of differences in standards between various courses of study could have an equalizing effect on the social structure. Second, a gradual reduction in discrepancies in educational attainment in the presence of a relatively stable structure of social inequality could result in the education system gradually losing its importance for the process of social selection, which then would generally be relocated in the occupational system. Third, differences in social reward could become so slight in response to educational expansion that educational aspirations would generally lower, thereby bringing about a measure of agreement between assumed qualifications requirements and the output of the education system. Fourth, planning and administrative measures could affect the way education is organized, to the extent that it meets the qualification requirements of the employment system.

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All four of these assumptions can claim some sort of evidence in their support. In most industrialized countries, things have not developed perfectly in line with any one of these ideal-typical conceptions. Instead, all four possible forms of coordination co-exist, but vary in their impact. Altogether, however, signs supporting such alternatives are clearly weaker than signs that selection through education becomes even more important under conditions of a growing “demand for inequality”. 

Source: adapted from Teichler, Hartung and Nuthmann 1980

Fortunately, the research of the Max Planck Institute for Educational Research, where I was employed at that time, was paid enormous attention in the German public debate on educational expansion. We were called the advocates of the “absorption approach” (cf. the overview of the analyses in Hartung, Nuthmann and Teichler 1981). The pessimism with respect to the consequences of educational expansion for employment remained strong in Germany, but we obviously contributed to a phasing out of the term “academic proletariat” – a term suggesting that the superfluous graduates would end up in economic and social misery. However, our comparatively more, but not altogether optimistic notion that “vertical substitution” eventually would enrich the world of work and contribute to economic and societal innovation was not widely shared either. In Germany, instead, the term “displacement” surfaced in the mid-1970s and met highest public acceptance, i.e. agreement to our hypothesis that the “superfluous” graduates were most likely to get employed in positions slightly lower than those traditionally held by graduates, but combined with the claim that those trained for this level of occupation newly captured by the increasing number of graduates would be deprived of their appropriate positions and forced to climb down the occupational ladder.

1.3 THE SEARCH FOR AN UNDERSTANDING OF COMPLEX RELATIONSHIPS

Research on higher education has been a rare species in academia not only in Germany, but also in most other countries of the world (see Teichler 1996a, 2005). In Europe, institutions for higher education research mostly were founded with specific tasks reflecting major concern and policy debates of their period of foundation. For example, the Institute for Economics of Education was founded in 1970 in Dijon (France) when worldwide debates focussed on the contribution of educational expenditures to economic growth. And the Center for Higher Education Policy Studies was established in Enschede (the Netherlands) in the mid-1980s when governmental steering and institutional management of higher education became more strategic. Similarly, the establishment of the Centre for Research on Higher Education and Work (Wissenschaftliches Zentrum für Berufs- und Hochschulforschung) at the Comprehensive University of Kassel (Germany) in 1978 (in the mean time renamed to International Centre for Higher Education Research Kassel) was a response to growing concerns – in Germany, but – as already stated – not only there, about graduate employment and work in the wake of educa-
tional expansion and of graduate employment problems visible since the “oil shock” of 1973 (cf. Teichler 1990a). But some of the persons advocating the establishment of the Centre also had hoped that new ideas would be generated about future links between study and work on a way towards a society which we would nowadays call “knowledge society”. Being offered to be the key driver for the establishment and further development of this centre, I clearly viewed this assignment as an opportunity to analyse the relationships between higher education and the world of work and many related issues of higher education and society from a broader perspective than individually operating scholars can cope with. Text no. 2, an excerpt from an text written for an encyclopaedia, might illustrate the broad range of issues which can be taken into account:

**Text 2: Education and the World of Work**

Education is a social mechanism which, as a rule, **dissociates the learner physically** for a certain period of his or her life from the regular world of work and other life spheres. This is undertaken in order to prepare her or him in a more rational manner for coping successfully with the diversity of work and other life tasks through explanations, rules, general reasoning strategies etc. The more efficient the industrial society became in producing wealth in the nineteenth and twentieth century, the more expanded the education system and the more was education viewed as a means of generating competencies which contribute to the production of goods and services.

Regarding to the world of work it has

- a **qualifying** (in the French and German connotation) function of fostering the cognitive and possibly affective and sensu-motoric capabilities which might be useful to cope with job tasks, as well as challenges in other spheres of life;
- a **status-distributive function**: the level of “educational attainment” determines to a certain extent the monetary resources and the social recognition which will be available to the individual person in his or her subsequent life; for education became an increasingly powerful factor in opening up or closing the access to prestigious occupations and providing the means for professional achievement which are directly linked to differential remuneration and socio-economic status.

These basic functions are undisputed. However, it is generally assumed that education is bound to be imperfect in preparing for the world of work, among others because rational learning through dissociation from practice has its price in less direct preparation for occupational tasks than on-the-job-learning, and because education is expected to serve broader functions than merely preparation for the world of work. Also, in addition to education, many other factors are at work in determining the professional success of individuals, such as socio-biographic background, genetically determined abilities, socio-economic factors surrounding the role of credentials, processes of transfer from education to employment, and finally lifelong learning and personal development. Thus, it cannot come as a surprise to note controversial debates as regards the actual ways education is and ought to be shaped to serve the world of work. Similar, views diverge about the impacts learning has and ought to have on the subsequent employment and work.

Even if education was expected to be closely geared to the “requirements” of the employment system and even there were no particularistic social factors in play, e.g. parental background, gender, etc., which interfere to a close link of educational and career success, there are obvious imperfections and uncertainties which make close linkages unlikely.

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Available research and past debates pointed out the following issues:

– **Imperfections in identifying job requirements**: Employers tend to be uncertain, and scientific approaches of job task analysis often turn out not be very useful for educational approaches.

– **Occupational dynamics**: The employment is very dynamic in terms of changes of job tasks within given occupations, and most persons have to expect occupational mobility in terms of changing employers or occupations over the life courses. This challenges the view that youth might be best served by getting well prepared for a very specific bundle of job tasks.

– **Indeterminate work tasks for highly-qualified work force**: The higher the educational level required for a certain occupational area and thus the higher the investments for education are for the learners or for the society, the more difficult is it to identify the competencies required. For the relationships between knowledge and job tasks are too complex to be validly analysed, and the individual is not expected merely to take over anticipated tasks but also to question the existing rules, to contribute to innovation and to cope with indeterminate work tasks.

– **Planning gap**: There is an unavoidable time gap between the identification of new job assignments and the provision of respective competencies on the part of school leavers and graduates, because several years are needed for the revision of curricula, their implementation and the actual “production” of graduates.

– **Generalists' vs. specialists' paradigms**: Views vary substantially regards the extent to which education should be general or specialized in order to serve best the preparation for employment and work.

– **Provision of foundation vs. job-preparatory function of education**: Similarly, views tend to vary as regards the extent to which education prepares for future work tasks or only lays the foundation and leaves the direct preparation to the initial training of employees.

– **Emphasis on pre-career education vs. recurrent education**: Finally, views differ similarly on the extent to which the growing role of lifelong learning might reduce the need of pre-career education and training.

Even if there were no major obstacles as regards the feasibility of linking education closely to the demands of the world of work, the views and policies are likely to differ substantially because major **value judgements** come into play:

– To what extent should education serve the world of work or other spheres of life (personality, citizenship, family, culture, leisure, etc.)?

– Should education be expanded beyond the **needs of the economy**, if social demands call for it? Should education serve social justice in terms of increasing equality of opportunity and smaller differentials of educational attainments, if this creates tensions to the demands of the economy?

– Who determines the **needs of the world of work** (the current views of employers, a social compromise, the needs according to experts’ views, etc.)?

– How are **employment and work valued in a society** (as a basis for identity, an alienating environment, predominantly extrinsically valuable as means for acquiring income and status), and what role should education play in this context?

– To what extent should education serve the development of personality, values, social skills, etc. **beyond the cognitive domain**? 

To be continued
In all societies, controversies can be observed as regards the extent to which education is viewed as instrumental in securing the individual’s and the society’s economic success or other aims are given a stronger weight.

The extent to which the patterns of educational qualifications match the demand of the employment system is a frequent topic of research and policy debate. One tries to establish – both for the labour market of recent graduates and the total labour force – the extent to which the qualifications correspond to the occupational structure

- horizontally, i.e. in terms of links between subjects and occupational categories, and
- vertically, i.e. in terms of the appropriateness of the level of education to the status of the occupation.

Altogether, concerns about a horizontal match are more pronounced in countries emphasizing specialization in education and employment than in countries considering education predominantly as a general preparation for various possible assignments. They tend to be more pronounced as well regarding higher levels of education than lower ones: a substitution of a car-mechanic by a baker seems to be more acceptable than that of an engineer by a chemist. But the more research on the horizontal relationships between education and employment progressed, the more visible became lea-way for substitution. For example, the fact that about half of the German having undergone an apprenticeship training phase are employed five years later in occupations not closely linked to the type of training does not tend to be considered as a major wastage, but rather as an indicator that in-depth specialized vocational training fosters substantial potentials for flexibility and transfer of skills.

More attention was paid to problems linked to possible vertical mismatches. In the 1960s, concern was frequently voiced that countries with a low proportion of the population with advanced education might fall behind the others with respect to economic growth. From the 1970s through the 1990s, controversies were on the agenda whether a trend towards “over-education” or “over-qualification” could be observed. During the 1990s, eventually a mix of concerns about over-education in some areas and lack of competencies in other areas, e.g. qualifications required for new technologies, was prevalent in many countries.

The issue of “over-education” seems to be a perennial issue, because the tensions do not fade away between often steep occupational hierarchies on the one hand and on the other a relatively open access to the highest levels of education. Concern, however, tended to be voiced less dramatically in the 1990s. This might be explained by widespread expectations that a “knowledge society” is likely to emerge. Also, research has shown that most persons seemingly overqualified did not face major hardships on the labour market but acquired mostly a position only slightly lower than they had strived for.

Altogether, even in a “knowledge society”, one does not expect that a more or less pure educational meritocracy will emerge, because other factors might increasingly get momentum. But education seems to remain the single most important determinant of career and of chances in other spheres of life.

Source: adapted from Teichler 2001a

Most research institutes at universities, however, face difficulties in pursuing consistent research and communication policies. They must respect the diversity of conceptual, thematic and methodological priorities of the participating scholars. Moreover, these research centres are subject to the merits and plight of staff mobility, they have to weigh the chances of getting research grants and the grants received greatly influence future research strategies. In addition, these centres typically must reflect public debates. These issues notwithstanding, the centre in Kas-
sel succeeded in setting seven research priorities for three decades (see Schomburg and Teichler 2005).

First, there was a strong need to collect information on concepts, available research, and other information, i.e. to conduct secondary analyses on the changing relationships between higher education and the world of work. Also of interest were the implications of these data for quantitative, structural, and curricular developments in higher education. Data gathering was done with the help of national and international conferences, often undertaken in cooperation with other institutions (Teichler 1979; Brennan, Kogan and Teichler 1995). In addition, scholars were invited to write trend reports (Kehm and Teichler 1995) or detailed accounts of available research (Holtkamp and Teichler 1983; Burkhartd, Schomburg and Teichler 2000; Paul, Teichler and van der Velden 2000) as well as synthesizing analyses (Teichler and Sanyal 1982; Teichler 1988b, 1998b, 1999a, 1999d, 2003). This national and international effort yielded valuable information for researchers and practitioners and informed the Centre’s research plans.

Second, efforts were made to overcome the frequent inclinations of large-scale graduate surveys to be confined to a small range of themes. Often graduate surveys provide only information on themes such as field of study, the whereabouts of graduates after some period, their employment success, and the job satisfaction and overall assessment of their study experiences. The centre in Kassel preferred surveys asking graduates to provide detailed information about many areas in order to:

– examine features of the transition from higher education to employment and how students’ competencies, labour market conditions, employers’ expectations, and the dynamics of the transition mechanisms interact in determining the relationships between graduation and initial employment;

– measure the employment and work “success” of graduates in multiple ways, thereby showing the extent to which remuneration and status, on-the-job use of knowledge acquired during the course of study, and job satisfaction are interrelated or divergent;

– get an in-depth picture of the links between the competencies acquired during the course of study and the actual work tasks as perceived by the graduate;

– analyse the extent to which the study conditions experienced by students matter for their subsequent employment and work;

– check the impact of the students’ motivations and orientations on their career paths.

These themes, first, were addressed in a longitudinal study of German graduates who completed their final year of study in the early 1980s. These graduates were surveyed two years, five years, and eventually ten years after graduation (Teichler, Schomburg and Winkler 1992; Schomburg 1992; Schomburg and Teichler 1993, 1998). In the international comparative study discussed in this chapter, these themes played a major role as well.

Third, various studies were undertaken to examine the relationships between curricula and employment in selected fields of study and occupational areas, notably in engineering, fine arts, and teacher training (Hermanns, Tkocz and Winkler 1983; Ekardt, Löffler and Hengstenberg 1992; Winkler 2003; Rattemeyer 1982). In
most cases, questionnaires, interviews of graduates, participant observation, and expert interviews were combined in order to get a more detailed picture about the links between study and work.

Fourth, various studies were conducted to solicit employers’ views. In the early 1980s, for example, heads of personnel offices of large companies in Germany were interviewed about the recruitment process and the role that credentials play in recruitment (Teichler, Buttgereit and Holtkamp 1984; Buttgereit 1984). In the mid-1990s, a pilot study addressed the demand for graduates and competencies expected by companies through surveying heads of personnel and supervisors of university graduates in German companies (Baldauf et al. 1995a, 1995b). Finally, a study was undertaken during the 1990s about recruitment, career, and training policies of Japanese companies. Questionnaire surveys, interviews, and document analysis were employed in this study (Ernst 1998; Metzler 1999; Teicher and Teichler 2000). On one hand, these studies showed that information provided by employers is an indispensable source for understanding work tasks and job requirements. On the other hand, the studies made clear that the employers’ views and expectations cannot be considered the single most valid indication of demands and job requirements. For example, employers may have divergent perceptions of actors at the workplace and difficulties in identifying actual job requirements and competencies. Finally, traditions, political biases, and other factors may cloud employers’ views.

Fifth, steps were taken to strengthen the element of international comparison in the analysis of the relationship between higher education and the world of work. Most of the studies addressed economically advanced societies. For example, the study on education and employment in Japan aimed to understand differences and common elements between the company-based approach in Japan and the profession-based approach in Germany. Moreover, the Kassel centre had the exceptional opportunity of coordinating a graduate survey in a large number of countries (Schomburg and Teichler 2006; Teichler 2007b).

Sixth, surveys were conducted on employment and work of individuals who had been internationally mobile during their course of study or during early stages of their research career (Schomburg, Winkler and Teichler 1991; Maiworm and Teichler 1996, 1997; Teichler and Jahr 2001; Bracht et al. 2006). International comparative analyses turned out to be very helpful for generating ideas about how to interpret findings. It also provided food for thought regarding alternative options from those customary in one’s own country.

Seventh, the Kassel centre was active in supporting other scholars wanting to embark on graduate surveys and related analyses. Increasingly, universities around the world are evaluating the educational experiences of their graduates. Leaders of developing countries are especially interested in training experts of higher education research, including experts on the relationship between higher education and the world of work. Consequently, the centre advised administrators and researchers in Germany and other countries embarking for the first time in graduate surveys. A handbook was written and updated (Schomburg 1995, 2003) in the English and the Spanish language to serve as a standard instrument for graduate and employers surveys. Individuals aiming to undertake such studies were provided with explana-
tions, sample questionnaires, and computer programmes for data analysis in order to facilitate all steps of a survey.

Training workshops were conducted in more than ten countries in Africa, Asia, and Latin America in order to assist researchers and administrators in conducting graduate surveys (Winkler, Hartmann and Schomburg 1992; Baldauf and Lwambuka 1993). Eventually, ten graduate surveys were conducted in Africa, and researchers of the Kassel Centre collaborated with African scholars to undertake a joint comparative analysis (Mugabushaka, Teichler and Schomburg 2004; Mugabushaka, Schomburg and Teichler 2007) and recommended a common framework for graduate surveys in Latin America.

Finally, the Kassel Centre started offering individual universities in Germany the opportunity to survey their graduates in conjunction with a major representative survey of German graduates. The findings of this representative survey provided the individual university with a benchmark for analyzing their own graduates’ employment and transition to work (Grühn and Schomburg 2002). Subsequently, the Centre created a network of German universities active in surveying their graduates; the Centre supported these activities through conceptual advice, a formulation of a core questionnaire, operational advice and possibly technical assistance (see Alberding and Janson 2007).

The various projects of the Centre in Kassel helped higher education administrators to get access to information about the relationship between higher education and the world of work. The projects informed decision makers in higher education systems, institutions, and study programs. Last but not least they were hoped to be considered by students and graduates but they pointed out that students and graduates determine their educational and career “fate” more substantially than more simplistic research suggests (see also text no. 3). Findings were not disguised in international academic modes of presentation and analysis; instead, the implications of the studies were made explicit for practitioners.

The findings of the projects cautioned against simple studies and called for more comprehensive analyses. For example, findings suggested:

– More than a quarter of graduates who are un-adequately employed (their remuneration and positions are below those expected) report that they have interesting and satisfying jobs and good opportunities to use the competencies they acquired during the course of their study.

– Remuneration of German graduates varies more strongly by the economic wealth or poverty of the region of employment than by the academic reputation of the university.

– Graduates from vocationally oriented colleges in Europe are more satisfied with their preparation for practice than graduates from academically oriented universities, but vocational graduates report a higher discrepancy between their competences and their work tasks.

– Graduates form Japan and Europe differ substantially in the characteristics of study programmes, competence acquired, and job tasks but are very similar in their job orientations.

These studies call for more in-depth analysis about the relationships between higher education and the world of work to better guide decision making.
Students’ and graduates’ motives and activities cannot really be viewed, as it is often done, as primarily driven by a desire to maximise income and status. Six partly interrelated areas of values must be quoted in this respect.

First, professionals hold in high esteem a pride in good professional work and in the use of their competences. Intrinsic motivation is often seen as a more important driver for good professional practice than the extrinsic motivation for rewards such as income and status. Second, autonomous work, in terms of disposition to decide about the goals, the process, the timing, etc., of one’s assignments, is held in high esteem by a substantial proportion of graduates and is part of the professional pride of highly qualified persons. Third, we note that some values that are closely associated with the innovative function of systematic knowledge are held by many highly qualified persons: opportunities to undertake research, curiosity, interest in further learning, improving and revolutionising society. Fourth, research on job satisfaction has revealed a wide range of work conditions and employment conditions that is generally highly appreciated. Good contacts with colleagues, time for regular leisure activities and other assets of certain job roles could explain the occupational choice and the daily behaviour of the workforce. Fifth, values related to the socio-communicative environment outside the world of work have often been pointed at in recent years as highly influential for work-related decisions. The choice of certain regions as place of work or place of residence, as well as career sacrifices for the sake of partnership, family and children are examples of this. Sixth, gender differences of occupational conditions, values and behaviour have been one of the major themes of debate and research in this framework in recent decades. Analyses do not only address the views of men and women, but also try to establish whether the different values and activities could be considered as adaptations to unequal opportunities or as genuinely distinct values and options.

Views on changes of these values vary over time. On the one hand, a growing weight of intrinsic motives is observed as a shift toward “post-industrial values”: the more a certain wealth of society due to economic dynamics could be taken for granted, the more persons turn to improvements of life and society beyond the material rewards that were previously strived for. Similarly, the values of the highly qualified professions seem to spread in the process of educational expansion. On the other hand, monetary and non-monetary labour market rewards as well as status motives are viewed as gaining momentum when employment problems grow. Similarly, we noted a revival of the homo oeconomicus when the Zeitgeist was increasingly shaped by neo-liberal economic values.

Prior analyses have shown that some value dimensions that could conflict with those of the homo oeconomicus and status seekers could be interpreted as an appreciation of non-monetary economic rewards within a broad spectrum of status dimensions. Moreover, we often observed a high positive correlation between income and status and work conditions held highly in esteem by professionals, such as autonomous work, opportunity to make use of one’s competences, or opportunities for lifelong learning.

- The more intellectually demanding job roles are the less clearly they are determined by rules, instruments, work environments, and social control. Rather, highly qualified workers are expected to handle indeterminate work tasks, to reflect on established professional practice and to seek innovative solutions, and they have many opportunities of interpreting their work tasks and choosing possible options. Therefore, graduates’ values and orientations can play a crucial role in constantly redefining job “requirements” and in shaping professional work and its outcomes.

to be continued
The high relevance of the graduates’ values and orientations can be viewed as conventional wisdom. Debates and research on the “professions” and “leadership” tend to address the relevance of intrinsic motivation, professional ethics and socio-political views held by graduates. This notwithstanding, a substantial proportion of well-known research projects neglected students’ and graduates’ values and orientations or took for granted that the norms of the *homo oeconomicus* and the status seeker prevailed. The CHEERS study, in contrast, attempted to map the graduates’ values and orientations and to measure the extent to which they explain their professional activities.

*Values other than income, status and employment conditions seem to play a major role.* For example, graduates quoted personal development, work and home and family more frequently as central than money, social prestige and varied social life. Job satisfaction was more closely associated with autonomous and challenging work and the opportunity of using competences than with income, position, job security, time for leisure, and other dimensions of employment. Graduates considered themselves to be more strongly driven by intrinsic than by extrinsic motives.

A closer look reveals that the composition of values varied substantially:

- One out of seven graduates was predominantly status-oriented and income-oriented with little concern about the intrinsic dimensions.
- For more than a quarter of the graduates, intrinsic and extrinsic motives seemed to coincide: they either stated high or low ambitions in both respects.
- More than half, however, stressed their interest in the challenges of their work or their appreciation of self-development, while they perceived income, status and other employment conditions as being less important.

Not surprisingly, though, many graduates considered their work situation as not fully meeting their desires. Discrepancies between orientations and actual work situations seemed to occur almost as often with respect to status and income, opportunities of pursuing own ideas and using knowledge as with respect to opportunities of spending time on leisure and family. Some graduates accepted these discrepancies and adapted to them, while others tried to transform their work and employment conditions to meet their values and orientations.

There were differences in the values and orientations by country. For example, a status orientation that was not strongly linked to professional intrinsic motives could be observed more frequently in the Netherlands and in the UK than in the other countries. Altogether, these differences were less striking than those of the employment conditions and work situations.

Finally, the relevance of values and norms affected career choices differently in various respects. In some countries, affiliation with a region was held in such high esteem that some graduates forewent bright career opportunities in order to live in a certain region. There were indications that international mobility was greatly appreciated by some graduates for many other reasons other than income, status and satisfactory employment conditions. Last but not least, child care continued to be a central issue for women; we noted a strong preference by women for employment in the public sector, especially in countries where political efforts were made to counterbalance their professional disadvantages.

... Altogether, the results of the study could be seen as indicating less dramatic changes in the relationships between higher education and the world of work than the discussions about macro-tends of modern societies would suggest.

to be continued
Upgrading of middle-level occupations towards typical areas of graduate employment had progressed substantially in only a minority of economically advanced countries. Graduates were exposed to serious employment problems to a lesser degree than the public debates suggest, and the graduates themselves anticipated this while they were still enrolled in study programmes. Intrinsic professional motives did not seem to weaken under conditions of a *Zeitgeist* in favour of the *homo oeconomicus* and status seeker. And national characteristics of study, graduate employment and work did not seem to give way rapidly to convergent pressures of globalisation. Future research will tell us whether the relationships between higher education and the world of work will change faster in the future than in the recent past.

Source: adapted from Teichler 2007

1.4 ISSUES AND DEBATES IN THE FIRST DECADE OF THE TWENTY FIRST CENTURY

In comparing the public debate on the relationships between higher education and the world of work in 1990s and at the beginning of the twenty first century with those of the prior decades we note again, after this issue has been high on the agenda in the 1960s and 1970s some period of less attention thereafter, a high interest on that theme. Certainly, it is indicative that the transition from higher education to employment was one of the major issues in OECD projects in the 1990s (OECD 1993a) and that higher education and the world of work was one of the dozen major themes of the UNESCO World Conference on Higher Education in 1998 (see Teichler 1999c). The thematic area revived, but certainly there were substantial changes in the major thrusts.

Four popular terms or pairs of terms indicate the foci of current debates.
- “Evaluation” and “accountability”
- “Knowledge society” or “knowledge economy”,
- “Employability”, and
- “Internationalisation” and “globalisation”.

The debates on “evaluation” and “accountability” reflect a growing tendency to steer and fund higher education according to the actual “output” and “outcome”. Graduate employment and work, obviously, is a key measure of “outcome” of the educational function of higher education. Therefore, graduate surveys became more popular in recent years than before. International comparative surveys, nationally representative surveys or even efforts to trace the whereabouts of all recent graduates of the whole country as well as surveys undertaken by individual higher education institutions certainly provide valuable feedback. But the growing popularity leads to a growing spread of simplistic interpretations. Often, the career success of graduates is viewed as a direct measure of the quality of higher education, thus overlooking the problems well-known to experts that
- outcomes might be more strongly caused by selectivity at entry to certain programmes, institutions or sectors of to higher education than to the actual “value added” by higher education,
careers success might depend more strongly on regional labour market conditions, specific expectations of employers conflicting with the goals of higher education, and lack of perfection of the selection mechanisms in transition to employment and early career than on the “quality” of higher education, the information provided by graduate surveys cannot be translated more or less automatically into concepts for curricular improvement.

“Employability” became a popular term in the so-called Bologna Process. When ministers in charge of higher education from 29 European countries agreed in 1999 to opt for a convergent structure of higher education systems in terms of a stage system of study programmes and degrees, enhancing student mobility was stressed as the prime goal. The ministers addressed the relationships between higher education and the world of work as well, but to a very limited extent only. They expressed concern that the newly established Bachelor degree programmes at universities might be designed like stages of the single programme and thus push the students to continue study up to a Master. Therefore they formulated in the Bologna Declaration of 1999: “The degree awarded after the first cycle shall also be relevant to the European labour market as an appropriate level of qualification.”

Thereafter and related to the “Bologna Process”, many actors and experts called for a stronger emphasis to be placed by higher education on the “employability” whereby often utilitarian views of higher education were in the forefront. Actually, however, the “employability” debate led to an enormous diversity of interpretations and responses such as adaptations to the presumed employers’ demands, emphasis on select dimensions of competences such as “key skills”, or ideas of curricular innovations as means of pro-active impact of higher education on the world of work.

“Internationalisation” and “globalisation” are referred to in this context in two quite different directions. On the one hand, there is increased interest in the international mobility of students and graduates. Clearly, international experience and understanding becomes important for the assignments of an increasing number of graduates. Altogether, the available information suggest, however, that mobility during the course of study and after graduation has spread less dramatically than the debates suggest, that a substantial proportion of internationally knowledgeable graduates end up in jobs less international than they have hoped for, and that international mobility in study and career is to a lesser extent a guarantee of a high income and status for persons from economically advanced countries than it is widely expected. On the other hand, there is a debate about the consequences of “globalisation” which is similar in many respects to that on “knowledge economy”.

The increasing popularity of terms such as “knowledge society” and “knowledge economy” imply, among others, that high numbers of highly educated persons are viewed as crucial for coping with the professional tasks of the future. This does not mean, however, that relatively restrictive and relatively elitist views of the relationships between higher education and the world of work have ceased to be dominant in Germany and many other European countries. A widespread belief seems to persist that high income and professional and managerial occupations are good indicators of the demand of the employment system for highly qualified graduates;
only a limited number of young persons are able to acquire high level competences needed for highly demanding positions and occupational areas;

the increasing numbers of graduates beyond such a demand for high calibre should be accommodated in academically less demanding institutions of higher education and should find eventually middle-level occupations with the help of vocational specialisation, “flexibility” and acceptance of moderately demanding occupations.

1.5 RESEARCH ON HIGHER EDUCATION AND THE WORLD OF WORK: ACHIEVEMENTS AND FUTURE CHALLENGES

Research on the relationships between higher education and the world of work which is not confined in this conventional wisdom has contributed, first, towards a more complex picture of these relationships. Accordingly, many graduates not ending up in high positions report a close link between their level and kinds of competences and their work tasks. Careers depend to a lesser extent than traditionally assumed on the specific field of study. The academic reputation of a university is not the single most important factor for career success. Employers are not a more or less perfect source of information for the “demands” of the employment system. We need hundreds of possible factors to take into account in order to describe appropriately what determines a successful graduate career and what determines successful handling of intellectually demanding and complex work tasks of graduates.

Second, research in this area has underscored that higher education cannot merely respond to the presumed demands of the employment system or the economy and society at large. Higher education has to prepare as well for indeterminate work tasks, to challenge the conventional job roles and practices of division of labour, and to contribute to unexpected innovative ideas. Therefore, curricula, teaching, and learning has to be both a response to perceived demand and training for proper functioning within established work assignments as well as a proactive policy for occupational change thereby transcending the dominant views of “demand”.

In recent years, interest is substantially grown in higher education to get more and more complex information on the links between higher education and the world of work. However, those actors of the higher education system interested are often disappointed that research on the relationships between higher education and the world of work provides little guidance for decision-making in higher education.

We have to admit that even more complex research on the relationships between higher education and the world of work has not yet reached a degree of quality which could be highly beneficial for a dialogue with practitioners about the future of higher education. There remain clearly, what I would like to call, three “construction sites” where improvement is needed.

First, a need to develop more suitable notions of “match” between higher education and the world of work and, correspondingly, more appropriate notions of professional “success”. Most studies on graduate employment compare different fields of study according to common yardsticks of employment and work “su-
"cess". But fields such as dentistry on the one hand and sociology on the other hand need to be analysed on the basis of different yardsticks as regards the closeness of links between subject and occupational area as well as knowledge and work tasks, the responsive or innovative training for job tasks, the expected occupational rewards, the career risks, the diversity of relevant curricula, etc.

Second, improved measures of job requirements and of competences are needed. The available measures of job requirements and competences acquired in the course of study are often too strongly shaped by the categories employed in daily conversations of laymen and are often guided by over-expectations regarding the “isomorphy” between kinds of work tasks and areas of knowledge and learning. Moreover, they depend too strongly on the ratings of graduates or of employers. Ways have to be found towards the development of more sophisticated and more valid measures.

Third, more convincing strategies have to be found to measure the extents and the ways higher education “matter” for employment and work. We are still at the beginning of developing good methods to measure well the relative weight of various elements of study provisions and study conditions for the acquisition of competences and for the utilization of these competences on the job, i.e. the extent to which certain factors from the side of higher education “matter”.

Research on the relationships between higher education and the world of work, thus, has further room for improvement. And it certainly has ample opportunities to contribute to more convincing visions about the educational tasks of higher education. But the dialogue between the researchers and the practitioners in this domain is likely to remain strenuous. For the researchers are likely to deliver a more complex picture than the practitioners considers desirable for making priority decisions. And new ways of intensive communication between the researchers on the relationships between higher education and the world of work and the experts of individual disciplines and individual occupations have to be found in order to develop meaningful concepts of the professional relevance of study and competence development in the various areas of knowledge and professional practice.
PART I

OVERVIEWS
CHAPTER 2

EDUCATION AND EMPLOYMENT
(2000)

2.1 THE SOCIAL FUNCTION OF EDUCATION FOR THE WORLD OF WORK

Education is a social mechanism which, as a rule, _dissociates the learner physically_ for a certain period of his or her life _from the regular world of work_ and other life spheres. This is undertaken in order to prepare her or him in a more rational manner for coping successfully with the diversity of work and other life tasks through explanations, rules, general reasoning strategies, etc. The more efficient the industrial society became in producing wealth in the nineteenth and twentieth century, the more expanded the education system and the more education was viewed as a means of generating competencies which contribute to the production of goods and services.

Education is linked to the world of work in two principal respects:

- Education has a _qualifying_ (in the French and German connotation) _function_ of fostering the cognitive and possibly affective and sensu-motoric capabilities (Bloom et al. 1956) which might be useful to cope with job tasks, as well as challenges in other spheres of life.

- Education has a _status-distributive function_ (Boudon 1973; Sewell, Hauser and Featherman 1976; Teichler, Hartung and Nuthmann 1980; Husén 1987): the level of "educational attainment" determines to a certain extent the monetary resources and the social recognition which will be available to the individual person in his or her subsequent life; for education is a powerful factor – and has increasingly become so over the nineteenth and twentieth century – in opening up or closing the access to prestigious occupations and providing the means for professional achievement which are directly linked to differential remuneration and socio-economic status.

These basic functions are undisputed. However, it is generally assumed that education is bound to be imperfect in preparing for the world of work, among others because rational learning through dissociation from practice has its price in less direct preparation for occupational tasks than on-the-job-learning, and because education is expected to serve broader functions than merely preparation for work. Also, in addition to education, many other factors are at work in determining the professional success of individuals, e.g. socio-biographic background, genetically determined abilities, socio-economic factors surrounding the role of credentials, processes of transfer from education to employment, and finally lifelong learning and personal development. Thus, it cannot come as a surprise to note controversial debates as regards the actual ways education is and ought to be shaped to serve the world of work. Similarly, views diverge about the actual impacts learning has and ought to have on the subsequent employment and work.
2.2 IMPERFECTIONS AND LIMITS OF THE LINKAGES OF EDUCATION AND EMPLOYMENT

Even if education was expected to be closely geared to the “requirements” of the employment system and even if there were no particularistic social factors in play, e.g. parental background, gender, etc. (cf. Jencks et al. 1972; Bourdieu and Passeron 1977), which interfere to a close link of educational and career success, there are obvious imperfections and uncertainties which make close linkages unlikely. Available research and past debates pointed out the following issues:

– **Imperfections in identifying job requirements**: Employers tend to be uncertain as far as job requirements are concerned, and scientific approaches of job task analysis often turn out not to be very useful for educational approaches.

– **Occupational dynamics**: The employment is very dynamic in terms of changes of job tasks within given occupations, and most persons have to expect occupational mobility in terms of changing employers or occupations over their life courses. This challenges the view that youth might be best served by getting well prepared for a very specific bundle of job tasks.

– **Indeterminate work tasks for highly-qualified work force**: The higher the educational level required for a certain occupational area and thus the higher the investments for education for the learners or for the society, the more difficult it is to identify the competencies needed, for the relationships between knowledge and job tasks are too complex to be validly analysed. Moreover, the individual is not expected merely to take over anticipated tasks but also to question the existing rules, to contribute to innovation, and to cope with indeterminate work tasks (Teichler 1992).

– **Planning gap**: There is an unavoidable time-gap between the identification of new job assignments and the provision of respective competencies on the part of school leavers and graduates, because several years are needed for the revision of curricula, their implementation, and the actual “production” of graduates according to the changed curriculum.

– **Generalists’ versus specialists’ paradigms**: Views vary substantially among experts regarding the extent to which education should be general or specialised according to areas of knowledge or occupations in order to serve best the preparation for employment and work.

– ** Provision of foundation versus job-preparatory function of education**: Similarly, views tend to vary as regards the extent to which education prepares for future work tasks or only lays the foundation and leaves the direct preparation to the initial training of employees.

– **Emphasis on pre-career education versus recurrent education**: Finally, views differ in the extent to which the growing role of lifelong learning might reduce the need of pre-career education and training. This is linked to divergent views, among others, on the change of learning abilities over the life-course, on job requirements in different stages of the career, and on the economic and social conditions for lifelong learning (cf. Tuijnman and Schuller 1999).

Even if there were no major obstacles as regards the feasibility of linking education closely to the demands of the world of work, the views and policies are likely to differ substantially because major value judgements come into play:
To what extent should education serve the world of work or other spheres of life (personality, citizenship, family, culture, leisure, etc.)?

Should education be expanded beyond the needs of the economy, if social demands call for it? Should education serve social justice in terms of increasing equality of opportunity and smaller differentials of educational attainments, if this creates tensions to the demands of the economy?

Who determines the needs of the world of work (the current views of employers, a social compromise, the needs according to experts’ views, etc.)?

How are employment and work valued in a society (as a basis for identity, an alienating environment, predominantly extrinsically valuable as means for acquiring income and status, etc.), and what does this imply for the role education should play?

To what extent should education serve the development of personality, values, social skills, etc. beyond the cognitive domain?

In all societies, controversies can be observed as regards the extent to which education is viewed as instrumental in securing the individual’s and the society’s economic success. The available literature, however, suggests that there are also strong national differences with respect to four areas of values (cf. Teicher and Teichler 2000).

(a) An educational meritocracy, i.e. a strong impact of pre-career educational attainment on subsequent career, seems to be most consequently realized and most highly appreciated – among industrial societies – in Japan (Dore 1976), whereas lifelong opportunities for counteracting those links are highly appreciated in the US; again other factors, i.e. collective social mobility and limits of educational and social divergences, are more strongly emphasized in many European countries.

(b) Views vary dramatically whether a general or specific and professional approach of education and training is desirable (cf. Psacharopoulos 1987b; Jallade 1989; Lutz 1994). Where a generalist’s view prevails, for example in Anglo-Saxon countries and in Japan, specialized education and training tend to be viewed as “narrow” both in terms of restraining professional flexibility and personality development. Where a specialist’s view dominates, notably in France and to a certain extent in Germany, the acquisition of specific knowledge is considered as exemplary in-depth learning which ensures substantial transfer to other areas of expertise, and professional expertise is viewed as compatible to a broadly cultured personality.

(c) Concepts of employment and work-related identity also differ substantially. In France and Germany, employment and work are generally expected to be a major force for individual identity. This tradition has reinforced a high pride of skilled workers in Germany. In contrast, sense of affiliation to one’s own employing organization tends to be viewed as a major source of identity and pride in Japan. In the Anglo-Saxon tradition, identity linked to work seems to be a phenomenon confined to high level occupations, as the terminological distinction in the English language underscores between (high-level) “professions” and other “vocational” or “occupational” areas.

(d) Finally, views differ strikingly as regards the role policies actually play and should play in shaping the relationships between education and employment (cf. Hüfner 1983). In the Soviet Union and affiliated countries, strong efforts
were made from the 1950s through the 1980s to plan education quantitatively and substantially according to the perceived demands of an economy which was also planned. In the United States, faith in the self-regulatory forces is most widespread as far as educational preparation for employment and work in a market-driven economy is concerned. In European countries, different degrees of macro-planning and steering of education are considered as essential in order to strike the balance between economic and other social and cultural rationales of education in a predominantly market-driven economy.

The different values are so pertinent for the actual links between education and employment in the respective societies that interpretations of research findings and discussions of their policies are more likely to reinforce national characteristics of the education-employment relationships than to create a universalistic challenge.

2.3 RESEARCH ON THE RELATIONSHIPS BETWEEN EDUCATION AND EMPLOYMENT

Various disciplines contribute to the concepts and to the stock of factual knowledge about the relationships between education and employment. The *economics of education* (Psacharopoulos 1987a; Carnoy 1994; Grao and Mora 2000) were among the most visible disciplines in this respect because of their paradigmatic coherence. Notably, the *human capital approach* attracted many economists to follow a certain conceptual and empirical pattern since about the 1960s (cf. Psacharopoulos 1994; Hartog 2000). One tries to establish the private rates of returns by comparing the relative life-time income advantages of highly educated persons with the investments they or their parents have made in terms of educational expenses and foregone income vis-à-vis persons with lower educational levels. Similarly, social rates of returns are measured by taking public expenses for education into account additionally. Many advocates of this approach are convinced that a return to educational investment higher than to capital investment indicates a shortage of the respective graduates, whereas a lower return indicates an oversupply.

Other approaches of economists gained popularity as well. For example, the *manpower requirement approach* aims to establish changes in the demand for graduates from different levels and areas of specialization by means of observation of past trends in economic growth and in the composition of the labour force according to categories of occupational structures and educational qualifications. Notably, in the 1960s and 1970s, this approach frequently served as a basis for forecasts (Parnes 1962).

Many other disciplines or thematic areas of research are interested in the relationships between education and employment. Among others, *vocational education* addresses the generation and utilization of work-related competencies (Arnold and Lipsmeier 1995; Tessaring 1998). *Psychology* and some areas of *sociology* analyze the work tasks and implied job requirements as well as the development of competencies. *Industrial sociology* notably is interested in the mix of technological, organizational, economic, and political factors determining the occupational structure and the job requirements (Baethge and Baethge-Kinsky 1995). *Educational sociology* and sociology of mobility continue to address issues of social origin, educa-
tional attainment, and career (Shavit and Blossfeld 1993). History or sociology of the professions (see Perkin 1996) analyse, among others, issues of professional identity and policies of professional bodies aiming to reinforce a close link between credentials and access to employment and a high status of the profession. Labour market research focuses on changes in the macro-structure of occupations and their composition of competencies as well as on trends of transition from education to employment, unemployment, and career mobility.

The different research approaches cultivate their specific domains, but partly address similar issues. They do not only vary according to concepts and methods, but also according to socio-political values.

2.4 TRENDS OF EDUCATIONAL ATTAINMENT

Expansion of education seems to be a perennial trend since World War II. On average, about one third of the adult population in industrial societies had at least some upper secondary education in 1960 (OECD 1994a); this proportion has reached about two-thirds in the late 1990s (OECD 2000).

From the late 1950s through the early 1970s, research projects and policy documents tended to be shaped by optimism that the economy requires a substantial increase of labour with advanced levels of education and that educational expansion could be instrumental to economic growth. Most international comparisons focussed on the general system of education and full-time schooling, thus neglecting pre-career vocational training. Accordingly, full-time enrolment rates of 17 years olds were 86 per cent in the US in 1970, about three quarters in Canada and Japan, but only about 40 per cent in Western Europe, ranging from about 60 per cent in Sweden to about 20 per cent in Germany (OECD 1977). Average years of schooling, measured in 1975, ranged from about 11 years in the US and the United Kingdom to less than six years in France, Spain, and Portugal (Graff 1996).

The 1973 “oil crisis” was a turning point of the political mood. Concern about unemployment in general began to dominate the scene and about problems regarding the employability of youth as well as potential mismatches between education and employment due to an oversupply of labour with higher or other advanced levels of education and training (OECD, 1977; Teichler, Hartung and Nuthmann 1980). At that time, the OECD began to include part-time enrolment and apprenticeship training into their figures of upper secondary enrolment, thereby observing an average increase of the secondary education graduation quota from about 60 per cent in industrial societies around 1970 to more than 80 per cent in the late 1990s. Differences persisted, ranging from more than 90 per cent in 1998 in New Zealand, Japan, and Germany to less than 60 per cent in Portugal (OECD 2000).

Similarly, the proportion of the respective age group being awarded a university-level degree increased from less than ten per cent on average in industrial societies around 1970 to almost 20 per cent at the end of the century. The change over time can be demonstrated best through a comparison of the educational attainment of various age groups of the population. Table 1 shows that the differences between the age groups are small in the United States, where the major ex-
pansion of enrolment took place before the 1970s, and high in Spain, where educa-
tional expansion is most pronounced in recent decades.

Table 1. Percentage of Population from Select Countries Having Attained at Least Upper Secondary Education and University-Level Education, by Age Group 1998

<table>
<thead>
<tr>
<th>Country</th>
<th>Upper secondary</th>
<th>University-level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25-34 35-44 45-54 55-64</td>
<td>25-34 35-44 45-54 55-64</td>
</tr>
<tr>
<td>United States</td>
<td>88 88 87 80</td>
<td>27 26 29 22</td>
</tr>
<tr>
<td>Norway</td>
<td>93 88 79 65</td>
<td>27 25 22 12</td>
</tr>
<tr>
<td>Japan</td>
<td>93 91 77 57</td>
<td>23 23 15 9</td>
</tr>
<tr>
<td>Germany</td>
<td>88 87 84 76</td>
<td>14 16 15 10</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>92 88 84 74</td>
<td>7 5 5 3</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>63 62 58 53</td>
<td>17 17 15 11</td>
</tr>
<tr>
<td>France</td>
<td>75 63 56 41</td>
<td>15 10 10 6</td>
</tr>
<tr>
<td>Philippines</td>
<td>56 53 35 35</td>
<td>26 26 18 18</td>
</tr>
<tr>
<td>Jordan</td>
<td>48 41 28 15</td>
<td>30 26 18 9</td>
</tr>
<tr>
<td>Spain</td>
<td>53 38 23 12</td>
<td>21 16 11 6</td>
</tr>
<tr>
<td>Argentina</td>
<td>36 29 21 15</td>
<td>11 10 7 4</td>
</tr>
<tr>
<td>Turkey</td>
<td>24 19 13 7</td>
<td>7 7 6 3</td>
</tr>
<tr>
<td>China</td>
<td>18 22 10 10</td>
<td>5 3 3 3</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>16 14 14 12</td>
<td>2 2 2 2</td>
</tr>
<tr>
<td>India</td>
<td>11 9 6 3</td>
<td>8 7 5 3</td>
</tr>
</tbody>
</table>


2.5 INCOME DIFFERENCES BY EDUCATION

In all societies, the level of educational attainment and the amount of income corre-
lates. In European OECD member states, for example, persons with upper second-
dary education earned on average in the 1990s about 1.3, those with non-university tertiary education 1.5, and those with university-level education about twice as much as persons without upper secondary education (see OECD 2000). Income differences according to educational attainment tend to be higher for women than for men, though women earn less than men (Pole 1995). Differentials declined moderately in industrial societies over the last three to four decades, though not consistently over time and across countries. Variations across countries in this respect cannot fully be explained by patterns of supply and demand; obviously, other social factors contribute to varying income inequality.

Calculations based on the human capital approach show that individual returns for higher education vary between countries from less than five per cent to even
more than 20 per cent. In some countries they surpass the interest rates of business capital whereas in others they remain below that level (OECD 1998b).

2.6 THE “MATCH” BETWEEN EDUCATION AND EMPLOYMENT

The extent to which patterns of educational qualifications match the demand of the employment system is a frequent topic of research and policy debate. One tries to establish – both for recent graduates and the total labour force – the extent to which the qualifications correspond to the occupational structure

– horizontally, i.e. in terms of links between subjects and occupational categories, and
– vertically, i.e. in terms of the appropriateness of the level of education to the status of the occupation.

Altogether, concerns about a horizontal match are more pronounced in countries emphasizing specialization in education and employment than in countries considering education predominantly as a general preparation for various possible assignments. They tend to be more pronounced as well regarding higher levels of education than lower ones: a substitution of a car-mechanic by a baker seems to be more acceptable than that of an engineer by a chemist. But the more research on the horizontal relationships between education and employment progressed, the more visible became lea-way for substitution. For example, the fact that about half of the Germans having undergone an apprenticeship training are employed five years later in occupations not closely linked to the type of training (Westhoff 1995) is not considered as wastage, but rather as an indicator that in-depth specialized vocational training fosters substantial potentials for flexibility and transfer of skills.

More attention was paid to problems linked to possible vertical mismatches. In the 1960s, concern was frequently voiced that countries with a low proportion of the population with advanced education might fall behind the others with respect to economic growth. From the 1970s through the 1990s, controversies were on the agenda whether a trend towards “over-education” or “over-qualification” could be observed (cf. the divergent views in Freeman 1976; Suda 1980; Teichler, Hartung and Nuthmann 1980). During the 1990s, eventually a mix of concerns about over-education in some areas and lack of competencies in others, e.g. qualifications required for new technologies, was prevalent in many countries.

“Over-education” and in some cases “under-education” were aimed to be analysed with the help of various measures (cf. Teichler 1988b; Dolton and Vignoles 1999; Hartog 2000; Paul, Teichler and van der Velden 2000):

– Studies based on educational and occupational statistics often came to the conclusion that the expansion of advanced levels of education clearly surpassed the demand of the employment system.
– Studies based on employers’ expectations similarly tended to support the idea of substantial increase of “over-education” in the 1970s and 1980s, though they also point out a lack of competencies in some domains, e.g. in specific areas of expertise or regarding socio-communicative skills.
– Surveys of former students show as well a higher frequency of education seemingly surpassing the level of job requirements than that of “under-education”,
but they indicate that many graduates make use on the job of the higher level of competencies. One should bear in mind, though, that research findings often depend largely on the definition of “over-education” and that the borderlines between “appropriate” and “inappropriate” employment often turn out to be fuzzy. The progress of research notwithstanding, the issue of “over-education” seems to be a perennial issue, because the tensions do not fade away between often steep occupational hierarchies on the one hand and on the other a relatively open access to the highest levels of education. Concern, however, tended to be voiced less dramatically in the 1990s than in the 1970s (Teichler 1999b). This might be explained by widespread expectations that a “knowledge society” is likely to emerge. Also, research has shown that most persons seemingly overqualified did not face major hardships on the labour market but acquired mostly a position only slightly lower than they had strived for.

2.7 EDUCATION, UNEMPLOYMENT, AND “EMPLOYABILITY”

Youth unemployment and various modes of precarious employment became a major policy concern in most industrialized societies since the mid-1970s and in most developing countries for long periods. Altogether, available information suggests that the unemployment quota among youth is substantially higher than that of the total labour force in most countries (OECD 1999). Also, the unemployment quotas in most industrial societies are the higher the lower the level of educational attainment is. For example, OECD calculations made in the late 1990s suggest that Europeans trained below upper secondary education have to expect four years of unemployment over their life course, those trained on upper secondary education somewhat more than two years, and those trained on tertiary education level somewhat more than one year (see Teichler 1999a, p. 232).

This led to a growing attention to the education of persons not achieving advanced levels of education, called for example “the forgotten majority” or the “forgotten half” in the public debate. A discussion was triggered whether an expansionist education policy could strengthen the youth’s employability potentials. Also, the question was raised whether certain types of education and training were more successful than others in preparing youth for the world of work.

Various models were suggested to classify modes of pre-career education and training on secondary education level (cf. OECD 1994b, 1998b; Tessaring 1998). During the late 1970s and early 1983, the apprenticeship training model (Lutz 1994) became popular in international debates, notably because youth unemployment rate in Germany and neighbour countries was not substantially higher than overall unemployment rates. During the 1980s, the pendulum of debate swung in favour of a general approach of pre-career education combined with initial and further on-the-job training within the employment system, as it was pursued in Japan (Dore and Sako 1989).

Four patterns of upper secondary education could be observed around 1980 (see OECD 1994b; Teichler 1999a):
EDUCATION AND EMPLOYMENT

– almost universal upper secondary schooling prior to high enrolment ratios in higher education, whereby general programmes of upper secondary education outnumbered vocational ones (e.g. in the United States and Japan);
– almost universal upper secondary education and training in diverse types of institutions prior to higher education, whereby apprenticeship training outnumbered other types of education and training (in Austria, Germany and Switzerland);
– a substantial sector of vocational schooling, either in vocational branches of secondary schools or in specific school-type training centres, alongside substantial general upper secondary programmes (in France and most Nordic countries);
– a dominance of general education programmes in upper secondary education alongside a high proportion of youth not attending any post-compulsory education and training (in the United Kingdom, Ireland, and various Southern European countries).

During the 1980s and 1990s, efforts were made to increase educational and training opportunities in countries previously characterized by a low enrolment rate on upper secondary education level. Also, new mixes of education and work experience emerged without eventually considering a single model as clearly superior (Ryan 1998; OECD 1999).

2.8 TRANSITION FROM EDUCATION TO EMPLOYMENT

In the 1990s, increased attention was paid to the processes of transition from education to employment. An OECD study defined transition not, as in the past, as a short period after initial education, but as a long period of up to ten years during which young people might be on the search for a satisfying and well-paid job, orientation and efforts to supplement competencies might interact and employment opportunities might differ from those for the older work force (Werquin, Breen and Plannas 1997; Bowers, Sonnet and Bardone 1999; Stern and Wagner 1999).

Part of the respective research focus on the relationships between education and employment in general just take the job start as the point of observation on the part of the employment system. Other studies analyse the speed of transition and the frequency of unemployment and precarious employment over various years, thereby pointing to a substantial diversity of paths between countries (Béduwé and Giret 1998). A further type of analysis tries to examine whether the process of transition is facilitated by certain types of prior education and training. Some studies claim that the transition process is facilitated by a close “coupling” of education and training to respective occupations, notably through the apprenticeship systems (cf. Müller and Shavit 1998), whereas other consider “market” regulation, as observed notably in the US, as most promising because it facilitates adjustments at any time of career (cf. Psacharopoulos 2000).

Various studies address factors other than educational achievement which might explain transition to employment and further career. One might mention the influence of “credentials” in this context as well as both certifying and symbolically over-emphasizing educational achievements (Davies 1992). Also, socio-biographic background comes into play not merely in terms of particularistic advantages in the transition processes, but also in terms of social skills not taught.
through formal educational processes (e.g. “cultural capital” by Bourdieu and Passeron 1977), which eventually turn out to be beneficial for career. Further, the debate on the important role of “key qualifications” (Nijhof and Streumer 1998) for employment and work also points out the importance of competencies at most in part fostered by education and training. Moreover, transition from education to employment also can be viewed as a moment under reduced meritocratic rule when young people can seek for chances through diligent search, smart tactics, and the demonstration of talents so far not rewarded in education (Teicher and Teichler 2000). Finally, some analyses aim to establish the extent to which targeted measures of improving transition to employment are successful (OECD 1999), notably short training programmes for “at-risk youth”, occupational guidance and counseling as well as placement arrangements by public employment agencies, private recruitment and placement firms, and by placement support on the part of educational institutions. Most of the research findings come to cautious conclusions regarding the extent to which those measures can counteract substantially the negative effects of low-level education and training.

2.9 CONCLUDING OBSERVATIONS

Education became increasingly an important determinant of employment and career in the nineteenth and twentieth century. By and large, long periods of pre-career learning are rewarded by a higher status and more interesting and independent work. However, this is not a regular trend but rather is affected by labour market constellations of demand and supply. Also, education becomes, in the process of expansion, more and more a prerequisite for career success, whereby other factors might gain weight with respect to the details of selection and allocation. Also, the growing dynamics within the occupation system make the influence of pre-career education less visible when lifelong education grows.

International comparison pointed out a striking variety of modes of education and training and of links between education and employment. The debates continue on the virtue of general versus specific education, on hopes set in educational expansion versus a closer match between education and the demands of the economy, on the advantages of a close coupling between training and work versus open market regulations, etc. But international comparison cautioned the beliefs widespread in the 1960s that one could identify the most successful, modern way of shaping the education system in a most promising way for serving economy, culture, and personality development. This did not necessarily lead to a dominance of relativistic approaches, but rather often stimulated the search for new mixes, e.g. in combining general education with work experience, opening up avenues for tertiary education while intensifying measures for educationally disadvantaged youth, improving education and concurrently measures which address the transition processes directly as well as the “employability” in other respects.

Even in a “knowledge society”, one does expect that a more or less pure educational meritocracy will emerge, because other factors might increasingly get momentum. But education seems to remain the single most important determinator of career and of chances in other spheres of life.

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