

TSER Research Proposal 1997

HIGHER EDUCATION AND GRADUATE
EMPLOYMENT IN EUROPE

submitted by

Ulrich Teichler
(Co-ordinator)

in co-operation with

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**Wissenschaftliches Zentrum für Berufs- und Hochschulforschung
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0. Summary: Higher Education and Graduate Employment in Europe

The project aims to analyse current developments in the relationship between higher education and the world of work in Europe. It will, first, address the role recent contextual changes play for graduate employment and work: new technological demands, new types of job roles in the wake of expansion of higher education, unemployment and other serious employment problems, the growing role played by social affective motivational competences, the links between higher education and the region, and finally the emerging Europeanization and internationalisation of graduate work. Second, the study will analyse the impacts socio-biographical and educational background, structural and curricular diversity of higher education, study behaviour and finally experiences in the transition process from study to employment have on the early career of graduates.

For this purpose, up to 72,000 questionnaires will be sent to graduates about three years after graduation - 8,000 in each of the nine countries included, i.e. Austria, Finland, France, Germany, Italy, the Netherlands, Norway, Spain and the United Kingdom. A return quota of about 50 percent is expected. Additionally, interviews will be conducted with altogether more than 200 heads of personnel offices as well as more than 200 graduates previously responding to the questionnaire. These studies aim at providing in-depth information on the competences expected, employment conditions and work assignments as well as the professional utilisation of competences acquired during the course of study.

The project will be based on the co-operation of mostly sociologists and economists highly experienced in research on the relationship between higher education and employment/work, labour market issues, international comparison as well as quantitative and qualitative research methods. Beyond the substantive academic and policy relevance of the findings, the project aims to provide the conceptual, methodological and instrumental basis for regular large-scale European graduate surveys in the future. It seeks for support from TSER notably in the area II.3.1.4: "Transition from school to work: comparative research on mechanisms and patterns of individual and group 'trajectories'", but also aims to contribute to methodological improvement of studies on job requirements (II.3.1.2) as well to the understanding of changes of employment due to technological developments (I.2.1) and of disadvantages due to regional and other socio-biographic factors (III.2).

1. Objectives, Themes and Procedures: an Overview

1.1 Aims and Objectives

The aim of this research project is to analyse employment and work of graduates from institutions of higher education in Europe during the first few years after graduation. In the framework of this study, the following objectives will be pursued.

First, the project is expected to provide, for the first time, a solid *comparative account* of employment and work of graduates from institutions of higher education in Europe. Hitherto, regular representative surveys have been established in only a few European countries and the underlying concepts and data collection methods vary to such an extent that no comparable results can be made available.

Second, the project should provide information on *recent changes in graduate employment and work* as well as newly emerging challenges for graduates from institutions of higher education in Europe. Available expertise suggests that the following issues of employment and work deserve special attention.

- *Technology*: Employment and work in the technologically most advanced sectors of production and services.
- *New employment and upgrading*: Employment and work in sectors hitherto viewed as marginal, i.e. in positions traditionally not considered suitable for graduates or in newly emerging occupational roles, such as new types of flexible combinations of work tasks, new types of self-employment, new "alternative" companies, up-grading trends in occupations traditionally held by non-graduates, newly emerging job tasks, etc.
- Importance of *general knowledge, attitudes and social skills* for job performance: Examination of their changing role.
- Changing *employment conditions*: increased short-terms contracts, quasi-self-employment, flexible work schedules, part-time jobs, etc.
- *Graduate unemployment*: Issues of graduate unemployment, search and transitory employment activities, impacts of retraining and other counteracting measures, and consequences of temporary unemployment for subsequent career.
- *Regional disparities*: Differences in employment and work according to regions, including specific conditions of higher education in economically and socially disadvantaged regions and the impacts of regional mobility and transfers.

- *European mobility*: The growing Europeanization of employment and work in terms of increasing mobility as well as growth of work tasks related to other countries.

Third, the project aims to analyse the complexity of *the relationships between higher education* on the one hand and *employment and work* on the other as far as structured surveys allow. Notable, four themes will be addressed:

- *Transition to employment*: while past research on the relationships between higher education and employment often has treated the transition from education to employment as a more or less optimal matching between graduates competences and motives on the one hand and on the other the jobs available, this study will analyse inner dynamics and relative autonomy of the transition process, i.e. the extent to which search, transitory employment and unemployment etc. on the part of the graduates, guidance, counselling and assistance in job search on the part of higher education institutions and employment agencies as well as recruitment policies on the part of the employers, shape the graduates' early career stages.
- *Structural impacts of higher education*: recent changes in the structures of higher education, for the example the upgrading of previous non-university higher education or the establishment of new types of higher education, the diversification of institutions and programmes both along vertical and horizontal lines, were based, among others, on the assumption that a diversified higher education system could produce a closer match between the students' abilities and motives, the substance of study and the subsequent employment and work. The study, therefore, aims to establish the extent to which structural categories of higher education, for example type of higher education or institutional reputation, are linked to the graduates' careers.
- *Curricular impacts*: whereas the question "Does college matter?" was often the focus of attention, the question "Does programme matter?" often has been neglected. Therefore, the questions will be raised as to whether certain curricular thrusts within the major fields of study - for example the extent of general knowledge versus specialisation, disciplinarity versus interdisciplinarity, academic versus professional emphasis, etc. - turn out to be significantly relevant for graduate employment and work.
- *Socio-biographic background and career opportunity*: the study will address the question whether the relationships between socio-biographic background (parental education, employment and wealth, gender, and regional background), education (over various stages) and career, thoroughly researched in the past, have changed in the 1990s in the framework of social and economic conditions of the 1980s and 1990s which in part steepen and in part tend to, or aim, to reduce disparities.

Fourth, the project ought to contribute to *theoretical innovation and methodological improvement* in the area of research into higher education and employment. On the one hand, the project will provide an opportunity to examine the need for revision of prevailing concepts in economics and sociology as regards the relationships between higher education and employment in the light of changing technologies, values, management and personnel policies as well as endemic uncertainties and vagueness as regards acquisition and utilisation of academic knowledge. On the other hand, the project team will devote a considerable component of its joint efforts to the development of a genuinely comparative methodology suitable for analysing competences, employment and work in Europe. Categories have to be chosen or newly developed which are sufficiently neutral and polyvalent to allow for a comparative study of employment, work and utilisation of knowledge in a substantial number of European countries, thus overcoming the pitfalls of prevailing terminologies and research approaches in individual countries which merely reflect the idiosyncrasies of education and work in the respective country.

Fifth, the project aims to lay the *foundation of a European-wide database* for graduate employment and work. The design and the instruments of the key surveys will be developed in such a manner that they can serve as the first stage and as the model for a Europe-wide reporting system.

1.2 The Proposed Project

In the proposed project, researchers from *nine European countries* (Austria, Finland, France, Germany, Italy, the Netherlands, Norway, Spain and United Kingdom) intend to develop concepts, questionnaires and survey approaches suitable for a Europe-wide analysis and to survey representative samples of graduates from institutions of higher education in their respective countries three years after graduation. A representative sample of about 36,000 persons (about 4,000 persons each from the nine countries) who had graduated between autumn 1994 and summer 1995 will be surveyed. The questionnaire will address the socio-biographic profile of the graduates, their study experiences and (self-perceived) competences acquired, their employment, work and careers since graduation and the links they perceive between education and work.

This representative questionnaire survey will be supplemented by *interview surveys* which allow for a more comprehensive understanding of the relationships between education and work. First, *employers' views* shall be analysed as regards changing quantitative demands as well as expected graduates' competences. Second, *graduates' perceptions and interpretations* of their competences, job roles and life goals shall be analysed in selected areas, notably those undergoing the most rapid and most challenging changes. Some members of the research team will seek for national funds in order to conduct an additional questionnaire survey 8-10 years after graduation.

The participating researchers herewith seek support from the *Targeted Socio-Economic Research (TSER)* programme in the area II.3: "Education, training and economic development". The project addresses primarily the area II.3.1.4: "Transition from school to work: comparative research on mechanisms and patterns of individual and group 'trajectories'".

The project, however, aims to surpass the widespread limitation of research in that area to quantitative-structural links between education and employment by putting emphasis on the acquisition and utilisation of competences as well as on the needs of the employment system in various European countries, thus contributing to an methodological improvement of comparative research on job requirements (a theme also included in II.3.1.2). In this context, the question will be raised as to how graduate employment and work change as a response to technological developments (TSER, I.2.1). Finally, the project pays special attention to graduates not finding suitable employment, as traditionally conceived, or facing unemployment. Though graduates tend to fare better on the labour market than non-graduates the project has to deal with aspects of a growing frequency of social disadvantage and exclusion (III.2).

2. The Concept and Content of the Envisaged Project

2.1 The State of Debates and Research

2.1.1 Changes Over the Last Decades

During the last few years, the relationships between higher education and employment has re-emerged as one of the major policy topics as well as a focus of research in Europe. Some decades ago, i.e. during the 1960s and 1970s, they had already been a key issue of higher education policy and research. Thereafter, this theme lost momentum (cf. Psachropoulos, 1987; Sanyal, 1991; Teichler, 1992), before renewed interest became visible from about 1990.

In the 1960s, hopes spread that expansion of higher education might contribute significantly to economic growth as well as to the reduction of social inequality. Economists and sociologists undertook numerous studies relevant to the prediction of future manpower demand and supply, investigated returns on educational investments, analysed patterns of occupational mobility and identified the impacts of social background and educational attainment on socio-economic status. During the 1970s, concern grew as regards growing mismatches between the moderately increasing demands for qualified labour and the rapidly increasing number of graduates from institutions of higher education. Pessimistic scenarios of "over-education" or "akademisches Proletariat", again fuelled interest in identifying the problems expected

and in finding indications for possible improvements. Some studies focused on the opportunities of graduates from non-university higher education and the impacts of vocational curricular approaches on the diversification of employment prospects according to fields of study, on the role reputational hierarchies play, and on the proportion of graduates holding positions which might be considered appropriate to their educational attainment.

During the 1980s, the relationships between higher education and employment were not high on the agenda. Faith in employment forecasts and corresponding educational planning had eroded. The warning of pending catastrophes due to the expansion of higher education had also failed. Research on graduate employment and work did not turn out to be the magic tool for the provision of guidelines for curriculum development. Altogether, the relationships between higher education and employment turned out to be too complex to be pressed anymore into simple persuasive models.

2.1.2 The Renewed Debates and Research in the 1990s

The renewed debates into the relationships between higher education and employment since about 1990 cannot be characterised by a single new development or challenge. Rather, many issues are concurrently raised in this context: the rising speed of turnover of knowledge required in jobs, the dramatic changes of the structure of the labour force in the wake of the introduction of new technologies and new managerial concepts, the globalization and Europeanization of the economy and society, the rapid "massification" of higher education since about the mid-eighties in many industrial societies, increased unemployment, declining transparency and continuity of careers, etc. Obviously, the signals higher education receives as regards graduate employment and work as well as the demands of the employment system are more contradictory and create more dilemmas than ever before.

- In spite of strenuous efforts undertaken in the past to harmonise the quantitative demand and supply of highly qualified labour either through respective planning, information on the labour market or political campaigning, mismatch is believed to be widespread and to have become endemic. Both the instrumental ambitions of students as well as their intrinsic motives regarding enrichment through knowledge and reflection reinforced a growth of enrolment in higher education beyond presumed demand from traditional areas of graduate employment.
- Massification of higher education is occurring throughout Europe, whereby the growing relevance of knowledge reinforces a continuous expansion of higher education, while those teaching and learning in higher education experience a continuous devaluation of their role in society.
- Transition to employment in the 1990s is severely hit by current phenomena of economic crisis as well as by a decline in provisions of gainful work due to rationalisation and the use of new technologies. Yet, the majority of experts and

key political actors in Europe tend to predict a growing long-term demand for graduates.

- Institutions of higher education and students are expected to be more responsive in their study provisions and study activities to the needs of the employment systems. Yet, those needs are more difficult to identify than ever at times of growing uncertainty, substantial mismatches, considerable erosion of traditional occupations and employment conditions, and increased speed in the obsolescence of knowledge.
- Institutions of higher education are held more accountable for their contributions to the cultivation of knowledge as well as for the utility of education and research to the economy and society. Yet, criteria for respective assessment are more shaky than ever - not only because of the above named uncertainties about demands, but also because research on the substance and processes of teaching and learning and their impacts on employment and work has been more successful in demystifying traditional beliefs than in establishing a generally-accepted body of knowledge as regards "good practices", "quality" etc.
- In the process of growing European co-operation, the variety between European countries in terms of competences required as well as in work and employment settings might turn out both to be an asset and a barrier to mobility and co-operation. Diversity seems to be so bewildering that information systems are chronically insufficient.

2.1.3 Recent Syntheses

The current debates and the state of available knowledge have been documented recently in various publications:

(1) The documents published by the Commission of the European Communities between 1990 and 1993 about the future of higher education (Commission of European Communities, 1990, 1991, 1993) clearly underscore the tensions between high hopes set on increased student numbers on the one hand and the concern about unemployment, shaky working conditions and continuing inequalities. They also indicate rising expectations regarding responsiveness, creativity, flexibility and social skills of graduates.

(2) The OECD documented in its study "From Higher Education to Employment" (OECD, 1992b, 1993a) potentials and pitfalls of analysing the relationships between higher education and employment in industrial societies on the basis of available statistics and large-scale surveys. In spite of the impressive body of information provided by this study, problems due to different methods of information gathering and limitations of the available studies as regards the content of education and work are the most striking outcome. The study also shows that new means have to be found for identifying newly

emerging occupations, new mixes of skills and qualifications as well as changes in the occupational structure.

(3) Overviews on the "state of the art" of research on higher education and employment initiated by the Consortium of Higher Education Researchers call for a broadening of the research topics. Notably, analyses of the links between curricula and work assignments as well as of the activities employed by major actors in steering the relationships between higher education and employment have not received the attention in research they deserve (Brennan and Kogan, 1993; Brennan, Kogan and Teichler, 1995). Similarly, contributions to a conference arranged by the Programme on Institutional Management in Higher Education (IMHE) of the OECD emphasised the lack of information on curricular strategies, counselling and placement activities as well as their impact on graduate employment and work (see various articles in *Higher Education Management*, Vol. 6, 1994, Nos. 3 and 4).

(4) Two recent issues of the *European Journal of Education* (Vol. 30, 1995, Nos. 1 and 2) confirm the multitude of researchers' approaches as well as the range of the current issues addressed in the European countries for which information is provided. Obviously, no trend towards a single major issue or paradigm is in sight.

2.1.4 Theoretical Debates and the Approach of the Study

The changing relationships between education and employment in the wake of expansion of higher education has been one of the key areas of economics and sociology for a long period. The major concepts and theoretical controversies are well documented, for example in Karabel and Halsey (1977), Psacharopoulos (1987) and Carnoy (1995). The economic debates focussed on the regulatory power of the market versus the need for infrastructural planning, the strengths of the manpower requirement approach and the human capital approach, the justification and fallacy of measuring social rates of return, the productive and screening or filter function of education, etc. The sociologists examined the persistence of inequality versus the impact of active social and educational policies, opportunities of social mobility versus the reproductive function of education, status reinforcement versus status redistribution through education, the impacts of credentials on careers and professional policies, etc. Various scholars participating in the proposed research team contributed to this theoretical debate, for example in claiming a historically growing weight of the status distributive function of education as compared to its qualifying function (Teichler) or by pointing out the custodial function of higher education (Kellermann).

The diverse theoretical concepts and their varied normative underpinnings persisted and even diversified further in the last two decades. Three trends of methodological sophistication can be observed and linked to growing complexity of theoretical models:

- In general, the range and number of variables taken into consideration grew. This was both the consequence of the weak explanatory power of the initial

assumptions as well as of the growing methodological sophistication of various multivariate techniques, path analysis etc. and of the computer "revolution".

- Whereas earlier studies tended to address educational attainment in relatively broad categories, recent research pays more attention to the question of whether certain dimensions of diversity in higher education, certain conditions and provisions of study, as well as certain ways of study behaviour, have an impact on subsequent graduate careers.
- Whereas earlier studies focussed on "normal careers" and often took rationales such as that of a "homo economicus" as the guidance principles of behaviour, recent studies try to explore an almost indefinite diversity of values as well as careers.

The existing diversity of theoretical approaches in the area to be analysed might suggest different strategies in forming an international research team. We could have tried to find scholars from different European countries who could form a harmonious team, as far as the major theoretical assumptions are concerned. We opted for a competing strategy, i.e. getting together a quite diverse team, as far as theoretical approaches are concerned, but both very versatile in the various theories and highly experienced as far as survey research in this area is concerned.

Such a *relativistic and integrative theoretical approach* to this project is taken for four reasons. First, though theories in this area differ dramatically in their conceptual basis and their normative underpinnings, they agree to a large extent as regards the variables to be taken into consideration for testing these theories. Second, theoretical preoccupations vary according to country (cf. the reference to different national approaches in Fulton, Gordon and Williams, 1982; Teichler, 1988b). It is not possible in this area to strive both for a theoretically harmonious and highly qualified research team in Europe. Third, the co-operation in the process of preparing this application reinforced hope that the theoretical diversity embodied in the research team will have strong cross-fertilizing impact on the conceptual development of the project. Fourth, the aim of establishing a basis for regular graduate surveys in Europe cannot be reached without accepting compromises among the varied conceptual frameworks.

2.1.5 Available Statistics and Representative Surveys

In some European countries, regular complete statistical accounts are provided or representative surveys are undertaken on graduate employment. The OECD study "From Higher Education to Employment", however, clearly indicates substantial weaknesses:

- UNESCO, OECD and EUROSTAT have not succeeded in agreeing definitions of levels and types of higher education institutions and programmes which are generally compatible with the definitions and underlying concepts in all member

states of the European Union. For example, first university degrees might be grouped into bachelor-equivalent or master-equivalent or viewed as one category. Diverse approaches are visible regarding graduates from short-cycle programmes.

- Different traditions of large-scale surveys and statistical data gathering have developed in the various European countries. Differences of categories or of the timing of the surveys preclude precise comparisons on a European basis.
- Many large-scale surveys provide only structural information, i.e. field of study, institution of higher education, employment status, occupational category, etc. Their frequent underestimation of the extent to which graduates make use of their competences clearly suggests that a minimum of questions regarding acquired competences, the character of work tasks and the utilisation of competences is indispensable for future surveys.
- Most surveys address recent graduates soon after graduation. Surveys undertaken six months after graduation (for example the regular British surveys) or one year after graduation (for example the Swedish statistics) are too early to provide a more or less complete picture, for they exclude many of those opting for a short additional study and training period on the one hand, and on the other, those facing substantial employment problems. In addition, these data on early career-employment tend to be misinterpreted as indicating the links between higher education and employment in general.
- Hundreds of graduate surveys have been undertaken over the last three decades in Europe. We note almost as many different concepts as researchers and surveys. Besides, we observe national traditions in the ways competences and work tasks are defined and priorities are set regarding certain types of competences.

The available research suggests that a wealth of concepts and methods are at hand for a European study on the relationships between higher education and graduate employment. It remains a challenging task, first, to develop a terminology and thus concepts of knowledge and work suitable for all the countries involved. Second, one has to agree on a design which takes account of the different conditions in the various countries regarding timing of transition, career stages, regional diversity and other similar factors. Third, graduate surveys require a difficult balance between the complexity of the theme on the one hand and, on the other, the need to keep the length of research instruments in bounds and to standardise questions.

2.2 The Concept of the European Project

Experts from nine European countries have agreed to undertake a joint study on higher education and graduate employment in Europe. Taking into account the practical

relevance of research in this area, the conceptual and methodological potentials as well as the limitations of the current state of knowledge, the following major thrusts of a joint comparative study are envisaged.

2.2.1 Analysis of Graduate Employment and Work

The relationships between higher education and employment tend to be misunderstood if surveys on graduate employment are too narrowly defined. The survey envisaged, therefore, aims to address both *the "employment" and "work"* dimensions, i.e. not only employment status, economic sector, occupational group, income etc., but also the major work tasks. This is indispensable in order to examine the wide-spread hypothesis that in the process of "massification of higher education", a privileged status is bound to become an exception, whereas the emergence of a "knowledge society" might be accompanied by an expansion of demanding job roles or at least demanding major tasks.

The study will place emphasis on *recent issues* of graduate employment and work, challenges and requirements which are generally viewed as *most important in the 1990s*. Taking into consideration the current state of debates and the available expertise in the project team, special attention will be given to the following issues (see Chart 1):

- *Technology*: In order to examine major technological developments and their relevance for graduates, the study will pay special attention to employment and work in the technologically most advanced sectors of production and services.
- *New employment and upgrading*: As a consequence both of further "massification" of higher education and a tightened labour market, a growing number of graduates is expected to be employed in sectors hitherto viewed as marginal, i.e. in positions traditionally not considered suitable for graduates or in newly emerging occupational roles, such as new types of flexible combinations of work tasks, new types of self-employment, new "alternative" companies, upgrading trends in occupations traditionally held by non-graduates, newly emerging job tasks, etc. The study aims to establish the character and frequency of positions and work tasks of such "non-traditional" graduate employment.
- *Changing employment conditions*: The survey also aims to establish the extent to which graduates experience employment conditions during the first years after graduation which lack the comfort of regular full-time employment in one way or other: in increased short-terms contracts, quasi-self-employment, flexible work schedules, part-time jobs, etc.
- *Graduate unemployment*: An analysis of unemployment of graduates during the first three years after graduation has to disentangle search unemployment and transitory employment activities from that of regular unemployment and employment. In this context, it is worth analysing the impact both of

unemployment during the first years and of retraining and other counteracting measures on subsequent career.

- *Regional disparities:* The study aims to analyse differences in employment and work according to regions. This obviously requires an analysis of mobility from or to economically and socially disadvantaged regions and its impacts.
- *Demand for general and social competences:* Employers tend to emphasise in recent years a shift of recruitment criteria, whereby increased weight is placed on general knowledge, attitudes and social skills. The study aims to establish the weight these competences actually play on the job.
- *European mobility:* Finally, attention will be paid to growing Europeanization of employment and work in terms of establishing the frequency of border-crossing mobility as well as growth of work tasks related to other countries.

Chart 1: Recent Developments of Graduate Employment and Work to be Analysed

- **Technological changes**
- **New employment and upgrading**
- **Uncertain and flexible employment**
- **Unemployment**
- **Regional disparities**
- **Demand for general and social competences**
- **European mobility and European work tasks**

2.2.2 The Role of Socio-biographic Background, Higher Education and Transition

Many studies on graduate employment measure the graduates' educational background only in broad categories of educational attainment. This might help to establish the value of investing in study in general or to show differences of employment "success" according to field of study or to individual institution of higher education. But such a research approach has hardly any value as feedback for higher education, i.e. in explaining the impact of various characteristics of higher education on graduate employment and work.

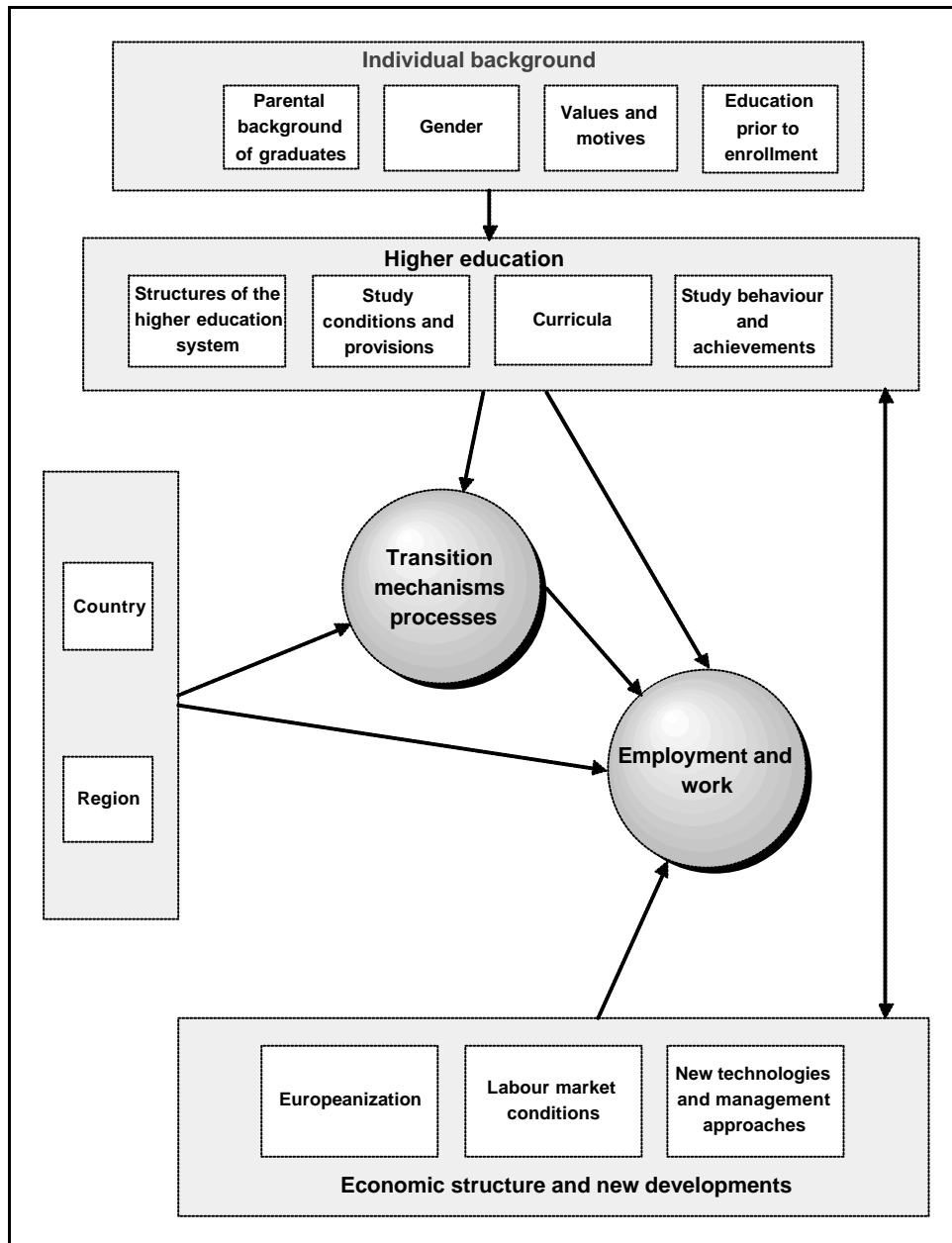
The members of the research teams also agree in assuming that an analysis of six themes is indispensable in establishing the links between higher education and graduate employment and work: the structure of the higher education system, curricula, study behaviour, study outcomes, the socio-biographical profile of the students and the transition from higher education to employment (see Chart 2).

(1) *Structures of the higher education system*: Higher education aims to produce a closer match between the students' abilities and motives, the substance of study and the subsequent employment and work through structural diversity, whereby different models of structural diversity are employed in Europe. The study aims to establish the links between types of programmes, types of higher education institutions and differences of institutional and departmental reputation on the one hand and, on the other, the graduates' careers.

(2) *Curricular approaches*: Similarly, the questions will be raised as to whether certain curricular thrusts within the major fields of study - for example the extent of general knowledge versus specialisation, disciplinarity versus interdisciplinarity, academic versus professional emphasis, etc. - turn out to be significantly relevant for graduate employment and work. Whereas the question "Does college matter?" was often the focus of attention, the question "Does programme matter?" often has been neglected.

(3) *Study behaviour*: The survey will also address - retrospectively - the graduates' actual study behaviour. Available research undertaken in the U.S., for example, suggests that the ways students' make use of study conditions and provisions are more powerful in explaining study outcomes than the conditions and provisions as such. For example, the availability of a good library is likely to contribute to the students' knowledge, but the students' use of book is likely to have a stronger impact on the study achievements than the availability of books as such.

(4) *Study achievements*: The survey will address former students' achievements in terms of grades, and possibly other achievement measures used by the institutions of higher education. This will allow the study to analyse the extent to which achievement of higher education predicts career success and will help to explain the discrepancies between study achievements and career success, for example competing recruitment criteria, successful search strategies or career dynamics.

Chart 2: Framework of the Study

(5) *Socio-biographic background*: The study will, on the one hand, raise the question as to whether the relationships between socio-biographic background (parental education, employment and wealth, gender, and regional background), education (over various stages) and career, thoroughly researched in the past, have changed in the 1990s in the framework of social and economic conditions of the 1980s and 1990s which in part steepen and in part tend to, or aim to, reduce disparities. On the other hand, the study aims to establish the extent to which overt links between higher education and employment are spurious and have to be attributed to the different student intake in socio-biographic terms and education preceding enrolment.

(6) *Transition to employment*: while past research on the relationships between often has treated the transition from education to employment as a more or less optimal matching between graduates competences and motives on the one hand and, on the other, the jobs available, this study will analyse inner dynamics and relative autonomy of the transition process, i.e. the extent to which search, transitory employment and unemployment etc. on the part of the graduates, guidance, counselling and assistance in job search on the part of higher education institutions and employment agencies, as well recruitment policies on the part of the employers, shape the graduates' early career stages.

2.3 Major Themes of the Survey

As already pointed out, this study aims to cover a broad range of themes: employment and work in general, recent changes in employment and work, the impact of socio-biographic backgrounds, the structural and curricular diversity of higher education and the students' study options. Some of the themes to be addressed and the categories to be employed need further explanation.

2.3.1 The Graduate Labour Market: Recently Changing Demands and Employment Problems

Available studies of labour markets and the organisation of work suggest that any survey of graduate employment undertaken in the 1990s has to take into account the following issues:

- *New work tasks* emerge more rapidly than in the past as a consequence of the rapid rate of obsolescence of existing and application of new knowledge in many occupational areas (CERI/OECD, 1990; Young, 1993). The growing importance of new technologies and the growing attention to ecological issues were the most striking examples in the recent past. The survey has to take into account the different modes of adaptation between higher education and employment in these areas, for example the emergence of new areas of specialisation in course programmes preceding corresponding professional specialisations, new demands of the economy not systematically met by higher education, the role of continuing

education and short advanced courses in this context, the potentials of graduates from different fields to "seize" new employment areas and to cope with the new job requirements.

- New management approaches might lead to substantial changes in the *composition and hierarchy of job roles* in individual enterprises. The distance between top positions and those of the majority of university-trained employees might grow or, on the contrary, might be reduced over time.
- *New flexible ways of employment* seem to grow partly as a result of changing employment patterns introduced by companies, partly due to changing expectations on the part of graduates, and partly as a response to growing employment difficulties for graduates (OECD, 1994).
- The increased *shortage of gainful employment* opportunities and the growing numbers of unemployed people in many European countries during the 1990s have led to increases in the numbers of graduates from institutions of higher education facing long periods of unemployment and/or combining unstable part-time work, to an extension of advanced training and re-training activities, and to a range of enterprise and governmental strategies to ensure at least some kind of employment.

These issues play a role in this research project not only in terms of the background information useful to interpret survey findings on the distribution of graduates according to employment sectors, economic sector of employment and career progress, but also as the basis for formulating important new kinds of questions, for example regarding the specific conditions of employment and work outside the traditional employment sector.

Careful attention has to be paid to those issues because we observe frequent generalisations as regards all industrial societies or all European countries. The survey, in contrast, might allow us to examine the extent to which graduate employment and work faces similar conditions in all European countries or specific conditions in individual countries.

2.3.2 Dimensions of Qualification and Curricular Approaches

A comparative study on higher education and work in Europe has to address the variety of concepts and the actual situation prevailing in the different countries regarding occupationally relevant competences as well as their utilisation on the job (cf. Freidson, 1983; Abbott, 1988; Attewell, 1990; Vallas, 1990; Kivinen and Rinne, 1993a; Darrah, 1994; Brennan et al., 1995). This undoubtedly will be one of the most challenging tasks of the envisaged project, for we lack a common terminology and concepts needed to identify and classify competences potentially relevant for work. Even general terms such as "qualification" have different meanings: whereas this term addresses the sum of

occupationally relevant competences in French and German, it tends to refer to the necessary credentials for access to respective employment areas in the English language.

In studying qualifications of graduates and their utilisation on the job in Europe, we, first, have to examine the *areas of knowledge emphasised in respective fields of study*. Engineering might comprise management studies in some countries, but not in other countries. In some countries, business studies might be linked to macro-economic studies, while students in other countries hardly get to know macroeconomics. In some countries, students might easily combine study in different disciplines, whereas disciplinary studies might be prevalent in other countries.

Second, we note different traditions in Europe with regard to the *extent to which students are expected to specialise* in the course of their study. It will be essential to examine the extent to which students acquire specialised knowledge or acquire more open types of knowledge and how this affects both their career opportunities and the opportunity to utilise their competences on the job.

Third, study provisions vary substantially in Europe in terms of *the extent to which the students are confronted with professional practice during the course of their study*. In some countries, in some disciplines, and at some institutions, students might be expected to acquire merely the knowledge base, while in other countries, disciplines and institutions, a systematic confrontation of academic approaches and professional tasks and 'learning to' might be on the agenda, and students also might be expected to participate in field observations or internships.

Fourth, attention has to be paid to the role *personal and social skills* play for graduate work. In some countries, institutions of higher education are expected to put strong emphasis on fostering communication competences, commitment to study and work and a miscellany of personal characteristics (e.g. adaptability, practicality, self-awareness, decisiveness and imagination), while in others changes in those respects are not the product of deliberate educational action. This theme deserves special attention in the framework of this survey, for experts tend to agree that employers regard personal and social skills more highly among recruitment and promotion criteria than they did in the past.

Fifth, a study on graduate employment and work in different countries has to take into account the *different ways qualifications are certified and the role credentials play in access to professional areas*. In some countries, curricula might be highly standardised in some fields in order to guarantee the expected professional competence whereas in others diverse competences might be considered acceptable and desirable. In some countries, access to professional activities in certain areas might be exclusively reserved for graduates from a single field whereas in others they might be open for graduates from various fields.

Therefore, a comparative survey on graduate employment merely addressing categories of fields of study and of occupations would elicit artefacts. It has to comprise self-rating

of major competences as well as their utilisation on the job. An initial careful study of the various concepts of qualification in the countries included in the survey is a prerequisite for a formulation of questions suitable for comparison.

2.3.3 Utilisation of Qualifications and Appropriate Position

Mismatch between the supply of graduates in terms of their credentials and competences on the one hand and, on the other, the demands of the employment system in terms of available jobs and qualification requirements has been one of the major areas of concern during the last three decades. Graduate surveys tend to address these issues in two ways: first in comparing fields of study, competences, etc. on the one hand and, on the other, economic sectors, occupational areas and job tasks, and, second, asking the graduates to rate the extent to which their job matches their education.

Surveys of graduates dramatically differ in the way they address the latter. As an analysis of respective surveys undertaken in Europe in the 1980s indicate (Teichler, 1988b), the rate of inappropriate employment might have varied according to different studies between about three and about 40 percent depending on the questions formulated rather than according to actual differences in the relationships between education and employment.

Available literature suggests that questions regarding the utilisation of competences have to address, first, *both the horizontal and the vertical dimensions* of the linkage between education and work. Graduates might be in high positions but hardly make use of their competences, or, on the other hand, might be in a position considered inappropriate with respect to the level of credential but make substantial use of their competences acquired in the course of their study. Second, studies produce *biased results if they only address possible under-utilisation of knowledge, skills, and attitudes but not potential under-qualification*. Third, one has to take into account the levels of *aspirations and expectations on the part of the students*. Fourth, *seemingly inappropriate positions are not infrequently chosen voluntarily*, for example in order not to be mobile, to live together with a partner, etc. (Brennan and McGeever, 1988; Brennan et al., 1993; Teichler and Buttgereit, 1992; Kellermann et al., 1994; Wielers and Glebbeek, 1995).

2.3.4 Transition to Employment and First Career Stages

Transition to employment and early career steps could be viewed, as already pointed out, as a short "messy" process at the end of which a more or less optimal match between the competences of former students and their eventual employment and work is reached. In contrast, many experts claimed in recent years that the transition to employment and career start themselves might have a tremendous impact on the subsequent career.

Past research has provided evidence that recruitment processes and criteria vary substantially between European countries (see Roizen and Jepson, 1985; Teichler, Buttgerit and Holtkamp, 1984). In addition, institutions of higher education differ substantially as regards the extent to which they support students in their preparation for job search as well as in the job search as such. A comparative survey suggests that activities of that kind are on the rise and that students, as well as administrators, favour a stronger involvement of higher education institutions in these activities (Raban, 1991). Further, the roles public employment agencies and other intermediary bodies play in the transition from higher education to employment differ strikingly between various European countries. Therefore, the aim of the survey is in this context, first, to analyse the actual search strategies and the institutional support made use of and, second, to establish whether the search activities and the use of institutional support turned out to be crucial for initial employment as well as for employment and work a few years after graduation.

In the past, little attention has been paid to the characteristics and impacts of transitory employment, unemployment and other activities. Along with the expansion in higher education and the rising unemployment problems in many European countries, however, there is a growing flexibility in the labour market with more temporary jobs and part time jobs. These changes have had great impact on the early career stages for graduates and have led to more interrupted and more "uncommon" career paths in the first years after graduation. The transition from education to work has become a process in which periods of unemployment can be followed by periods of employment and further studies. For some graduates their first job is the start of a career which matches educational background, and for others the first job is a step in the job search process (cf. Veum and Weiss, 1993; Klerman and Karoly, 1994).

Therefore, it is important, first, to obtain a better understanding of how common an untraditional career start is among those with higher education, and whether these problems are restricted to certain fields of study qualifying for jobs in parts of the labour market exposed to unemployment problems or a more general pattern for all graduates. If the problems turn out to be a more general phenomenon, it is an indication that the labour market has gone through structural changes and that what we have called untraditional early career paths in the future will be described as one of several "natural" career paths.

Second, the study will aim to establish the links between the various activities immediately after graduation and the employment and work situation three years after graduation. This will show whether the protracted transition period opens up opportunities for a trial and error search or whether the employment situation shortly after graduation is already a valid indicator for successful or less successful insertion into the employment system.

Traditions as regards the time of major graduate surveys in Europe differ substantially. On the one hand, annual British graduate surveys are undertaken about half a year after

graduation. On the other hand, French representative surveys on the insertion of graduates into the employment system are conducted 33 months after graduation (see Martinelli, 1994). Although the British practice might be considered obsolete, because the British survey can provide information only about the early employment of about half of the graduates (see Mason, 1995), the varying practices suggest that the duration of the transitory period varies substantially according to country. The study might allow an analysis of whether these differences in the typical duration of transition are instrumental for the impact of initial activities after graduation on employment and work a few years later.

2.3.5 Career

A survey addressing the links between higher education and employment/work has a limited scope if it is confined to the transition to employment and early career stages. The inclusion of several years of occupational experiences provides a more complete picture, notably in two respects.

- First, the value of competencies acquired during the course of study can be analysed appropriately only if several years of employment and work are taken into consideration and advanced positions are included. Higher education is not expected to prepare only for initial work tasks at the time of entry to employment.
- Second, the consequences of transitional experiences and of initial career decisions on later stages can be made visible if the survey also addresses employment and work at a time at which careers tend to stabilise.

Traditionally, career has been associated with vertical mobility or several steps of promotion. The concept "job ladders" is often used in the literature on career. For a person with higher education a typical career has traditionally started with a professional job and continued with transition to an administrative or managerial job. For some fields of study, as for instance engineering, the switch from a technical to a managerial job is perceived as the most direct if not only path to higher earnings and increased status (Biddle and Roberts, 1994). As the labour market has developed during recent years, the definition of what is a "successful" career seems to have changed. The trend to more horizontal labour organisation has reduced the number of levels in the hierarchy (Esland, 1990). There is also an increasing tendency to build career paths that are professional and not administrative or managerial. A career for a person with higher education does not necessarily consist only of vertical job mobility, but can consist of several horizontal steps. Therefore, it is worth tracing different "career paths" and the different stages in a career.

There is a great literature on the topics of career and job mobility. Most of the analyses on career are, not unexpectedly, done on promotion or vertical mobility and the processes that promote and restrain promotion. These analyses have undoubtedly given us valuable knowledge about what processes lead to promotion or vertical mobility. As

the labour market and career paths have become more complex, analysis of promotion or vertical mobility is too simple. We need analyses of careers that take into account both vertical and horizontal job mobility and which enable us to trace out different typologies of career.

The Institute for Studies in Research and Higher Education (Oslo), therefore, recently undertook a study eight years after graduation. The Centre for Research on Higher Education and Work (Kassel) surveyed graduates about ten years after graduation in the framework of a longitudinal study, thereby employing a broader range of variables. These surveys suggest that a survey at about this period is suitable for measuring the stability or change in early careers.

The researchers jointly preparing this research proposal, however, came to the conclusion not to apply for funds in the framework of TSER for a survey of graduates about 8-10 years after graduation. Instead, some of them will apply for additional funds from national sources in order to survey such an additional cohort. This decision was based on two deliberations. First, it was felt that costs of surveying a second cohort might surpass the means likely to be provided in the framework of TSER. Second, the tracing of addresses of former graduates 8-10 years after graduation is so difficult in some countries that the inclusion of all nine countries in a respective survey cannot be achieved.

2.3.6 The Impact of Diversity of Higher Education and Study Options

In all European countries, higher education has diversified during the last few decades in terms both of its research functions and the nature of its study provision. Diversification is generally considered essential in order to meet the growing diversity of talents and aspirations of students, of the financial conditions of the higher education system as well as of graduates' employment prospects. Though most experts agree in stating similar functional needs for diversification, the actual patterns of institutions and degree programmes, as well as the curricular thrusts, vary strikingly between the European countries (cf. OECD 1973; Teichler, 1988a; OECD, 1991; Gellert, 1993; Kivinen et al., 1996).

In this framework, first, the survey might shed light on the issue *of whether varied formal elements of diversification in the European countries serve similar functions*, as far as preparation for employment and work are concerned, and whether they achieve in practice their respective national goals. Is there, for example, a more visible link between study and work tasks for graduates of non-university higher education institutions with a strong vocational emphasis (for example graduates from German *Fachhochschulen* and Dutch *hogescholen*) than for graduates from lower-ranking universities in unitary higher education systems, i.e. Italy and recently the United Kingdom (cf. Brennan et al., 1994). The comparative study, thus, might contribute to an assessment of the successes of different models of differentiation.

Second, the survey might address European diversity, as far as *linkages between fields of study and segments of the employment system* are concerned. Many generalisations about the growing employability of graduates enrolled in professional fields and substantial problems of graduates from academic fields turned out to be misleading in the past, if examined in detail. Graduate employment and work for graduates from individual fields of study has to be compared more precisely and to be interpreted in terms of the size of the respective employment sectors, the modes of access and professional control, the actual labour market conditions, and the academic and professional thrusts of the curricula.

Third, the survey aims to establish the extent to which *curricular approaches are relevant for subsequent employment and work*. Many surveys in the past neglected the curricular dimension claimed a substantial impact of vertical components of higher education (type of institution, level of degree, institutional reputation). It might be argued, though, that the role vertical differences play was overestimated because their role in comparison to horizontal diversity was not measured at all. Obviously, curricular differences are more difficult to measure in a standardised graduate survey than structural differences. The studies undertaken by De Weert (1993, 1994), however, suggest that a generalised concept of major curricular thrusts can be employed across fields of study and can be assessed by various groups of actors in higher education. For example, one might try to establish the extent of disciplinarity versus cross-disciplinarity, the academic versus professional thrust, emphasis on knowledge acquisition versus conceptual and methodological training, prescription of courses versus broad range of options (cf. above, Chapter 2.3.2).

Chart 3 comprises a minimum range of information on higher education and study to be included in the graduate survey.

Chart 3: Minimum Information on Higher Education and Study to be Collected in the Graduate Survey

- **Name and type of higher education institution**
- **Field of study and required duration of study**
- **Curricular thrust**
- **Perceived study conditions**
- **Study path**
(duration and eventual change of institution and field)
- **Study behaviour**
(for example course selection and underlying rationales)
- **Study achievements**

2.3.7 Sociobiographic Background, Study and Employment

Educational policies in all European countries aim to reduce inequalities of educational and social opportunities for traditionally disadvantaged social groups. Also, the European Community has placed a strong emphasis on education, among other areas, to counteract social disparities. Available research does not provide consistent results as to which inequalities, as measured by equality of results, according to socio-economic background, gender, ethnicity and region, have been reduced over time (see Husén, 1987; Shavit and Blossfeld, 1993).

It is obvious, though, that inequalities have not completely vanished. Some experts point out that the growing emphasis on social skills and personality in graduate recruitment might reinforce social inequality. Others claim that we might overestimate the opportunities for previously disadvantaged groups by observing only transition to employment and entry positions, for - according to these views - disadvantages become more salient in the course of professional careers.

This comparative study on the relationships between higher education and employment in Europe might provide the most *valuable information base for the extent to which inequalities are prevalent today*. Differences in this respect between European countries, for identical fields of study or for identical occupational sectors, might help to identify the causes of inequality and the varying successes of policies in favour of reduction of inequality. Second, as already pointed out, the students' socio-biographic background and their education prior to enrolment has to be taken into account in studies aiming to establish the relationships between higher education and employment.

Otherwise, the impact of higher education on graduate employment tends to be overestimated.

2.3.8 Regional Differences in Higher Education and Employment

Regional differences in the relationships between higher education and employment are steep in some European countries, as for example a study on Italy suggests (Moscati and Pugliese, 1995), while they tend to be viewed as almost negligible in others, for example in the Netherlands. The authors of this research proposal decided to address regional differences because countries in Europe in which regional differences are marked seem to outnumber clearly those in which regional differences are viewed as marginal.

Regional disparities are relevant for a graduate survey in Europe in three respects. First, one has to take into consideration the *regional function of higher education* (cf. Kellermann, 1982, 1994a). Do institutions of higher education address explicitly the specific needs of their region, by, for example, analysing the culture, social environment, economic, natural resources, etc. of the region and by training graduates specifically versatile to serve these regional needs? How is this regional function related to other functions of higher education in the respective country? Do some institutions primarily serve the region whereas others pursue a more universalist, international or national thrust? Is there a regional emphasis in curricula and themes of research, or are institutions only coincidentally regional, by virtue of recruitment catchments and location?

Second, *regional social and economic disparities* affect the job opportunities for graduates. Social and economic differences according to region are a major concern of European policy. For example, unemployment ratios vary in Europe according to region between three and 35 percent. Views differ as regards the extent to which higher education in disadvantaged regions helps to counteract regional disparities or, on the contrary, reinforce inequalities. The latter could occur by offering lower quality education and research or by providing the talented youth of the respective regions with the skills needed to leave the regions and to get employed in richer regions rather than contributing to the social and economic improvement of the disadvantaged area (Eurostat, 1994; ISTAT, 1994).

Third, *equality of opportunity according to region of origin* is an important policy goal: how do persons living in relatively poor regions during the first few years of their lives compare with those from other regions in terms of education and career? Parity of education and career is, in contrast to the first and the second issues discussed, more likely to be achieved if education is more or less alike in all regions and if mobility from the poorer to the richer is easily realised.

Therefore, the proposed graduate survey is expected to address four regional issues

- employment and work of graduates according to the location of the institution of higher education they graduated from,
- employment and work of graduates according to region of destination,
- pattern of regional mobility (birth, school, institution of higher education, first employment, subsequent employment),
- the links between the specific thrusts of the higher education institutions and the employment/work of graduates who get employed in the respective region, i.e. the success of regionally oriented curricula.

In comparison to research available, a more careful analysis of regional disparities according to status and income is required. Disparities according to regions in those respects tend to be inflated, if they are not controlled by purchasing power and by the specific elements of quality of life, power and status, etc. in the various regions. Furthermore, past research has hardly analysed the successes of curricular approaches aiming to serve the specific needs of the respective regions.

In analysing the relationships between higher education and employment/work in Europe, various definitions of regions have to be employed. First, we will refer to the Nomenclature of Territorial Units employed in European statistics. Second, we will address regional differences in terms of economic and social wealth in all countries analysed. Third, we have to address the differences between higher education and employment in the metropolitan versus other areas. Finally, we have to take into account the density and vicinity of study provision if we want to analyse the impact of regional dispersion of higher education on education and career opportunities.

2.3.9 Europeanization of Higher Education and Employment

The European Community promotes co-operation among European institutions of higher education in order to increase mobility of students and to encourage curriculum development, both of which will eventually strengthen the European dimension in higher education. Increasing activities of this kind are considered essential because of the growing number of job roles which require European competences.

Up to the present, the number of graduates taking up employment abroad is estimated to comprise at most three percent in the nine countries included in this research proposal. Also, available research shows that many employers still turn out to be reluctant to graduates from other countries (cf. List, 1996; Stein et al., 1996); on the other hand, students opting for an international dimension of their study are likely to be internationally mobile upon graduation. For example, a survey shows that of former ERASMUS students, i.e. students spending a study period abroad in another European country with the support of a supplementary fellowship provided by the European Commission, actually 18 percent lived abroad about five years after the study period

abroad, among them about half in the host country of their ERASMUS-supported study period (Maiworm/Teichler, 1996). An increase in European graduate mobility is predicted by many experts.

The current debate, however, lacks precision. Definitions of the 'European dimension' of employment and work tend to be vague. Moreover, the information base is weak. Most surveys of employers' expectations ask about expected competences in general rather than about expectations regarding the - still - minority of jobs for which international and European competences are crucial. Few surveys have been undertaken of graduates who were enrolled in programmes emphasising European and international competences. A comparative survey on graduate employment might help redress this state of affairs.

The graduate survey might indicate the extent to which the most *obvious European and international dimensions* of employment and work *actually play a role*. It might show, first, the proportions of graduates

- being employed in another European country,
- utilising foreign languages frequently on the job,
- co-operating frequently with persons and institutions of other countries, and
- making use of knowledge of European institutions, regulations, international organisation, global markets, etc.

Lists of this kind are not satisfactory and might be viewed as operationalising the European dimension of competences and work tasks in a superficial manner. Therefore, expert interviews ought to be undertaken in the preparatory stage of the project in order to extend this list of valuable indicators.

Second, the survey aims to establish *the extent to which higher education contributes to respective competences*. For example, we aim to compare employment and work of graduates from programmes strongly emphasising European and international dimensions or having spent a study period abroad to those of other graduates. We also have to take into account learning and other experiences prior to enrolment.

2.4 The Surveys Envisaged

Graduate employment and work, as well as the linkages between study and subsequent career, will be analysed by means of a graduate survey. A representative sample of graduates - comprising the diversity of institutions, fields of study and regions - will be addressed about three years after graduation in all the nine countries included in this study.

Chart 4: The Surveys

- **European graduate survey**
- **Interview survey of graduates**
- **Interview survey of heads of personnel offices**

In some targeted areas, the core survey will be supplemented by in-depth studies. They are intended to overcome the limits of standardised questionnaire surveys and to supplement graduates' perspectives and experiences.

(a) An *interview survey of graduates* will be undertaken. The interviews will address the graduates' perceptions and interpretations regarding their expectations, their self-perceived competences, their job roles and careers.

(b) Also, a *interview survey of heads of personnel offices* will be undertaken. It will focus on changes occurring in the 1990s in the presumed demand for graduates, in job assignments, employment conditions and career patterns of graduates, as well as in the recruitment procedures and criteria.

Initially, it was intended to apply for funds to allow a survey of a second cohort of persons who graduated 8-10 years prior to the survey. A need to include subsequent career stages was felt in order to avoid over-concentration on entry positions and work tasks in explaining the relationships between higher education and employment. However, as the funds required for the additional surveys might exhaust the possibilities of support in the framework of the TSER programme, we decided to apply for other funds, once the project is approved, possibly from national sources, and accept a possibly smaller number of countries participating in the survey 8-10 years after graduation.

2.5 The Graduate Questionnaire Survey

2.5.1 The Research Instrument

The objectives of the survey require the use of a *standardised mailed questionnaire* as the core research instrument. With such a method it is possible to include a large number of graduates in each country in an efficient way as well as to elicit comparable and representative information on graduate employment and work.

The development of questionnaires will be based partly on the approaches and experiences of former surveys conducted in the European countries and partly on newly

developed questions/items which must overcome the pitfalls of prevailing terminologies and research approaches in individual countries. Categories have to be chosen or newly developed which are sufficiently neutral and polyvalent to allow for a comparative study of employment, work and utilisation of knowledge.

A final decision will be made in the first phase of the study about whether the questionnaires are to be the same for all fields of studies and countries. A length of approximately 16 pages is envisaged. The research teams in each country will contribute to the conceptualisation of the study and the development of the questionnaires and will be responsible for the translation of the "master questionnaire" into their respective language.

The questionnaires will be developed in the first phase of the project. The major themes of the questionnaire survey are named in Chart 5.

Chart 5: Themes to be Addressed in the Graduate Questionnaire Survey

- **Socio-biographic and early education background variables**
- **Enrolment as well as study conditions and provisions**
- **Course of study and study behaviour**
- **Study achievements**
- **Job search and transition period**
- **Employment during the first three years after graduation**
- **Regional and international mobility**
- **Work content and use of qualifications**
- **Work motivation and job satisfaction**
- **Further professional education/training**
- **Career prospects**

The questionnaire will reflect prior experiences of previous surveys undertaken by the members of the research team. Notably, various questions of prior surveys undertaken in Austria, Germany, the Netherlands and Norway can serve as a model.

2.5.2 Target Population and Sample

Cohort: Persons will be surveyed who graduated three years prior to the time the survey will be conducted. A three-year period after graduation has to be addressed in order to trace the professional entry of clearly above altogether 80 percent and in many areas above 90 percent of the graduates.

The proposed timing, first, takes into account that professional training periods after graduation, as they are required or customary in some countries in some professional areas, might last up to two years. This timing, second, allows us to analyse the transition to employment of many graduates who - after an award of degree equivalent to a bachelor's - continued academic study towards an advanced degree. Third, this timing enables us to identify the first regular employment of graduates after a protracted transition period. Fourth, some early career stages can be analysed on the part of those who transferred to employment shortly after graduation.

Country: The study will comprise nine European countries: Austria, Finland, France, Germany, Italy, Norway, Spain, the Netherlands, and United Kingdom.

The composition of countries strongly reflects the past strengths of graduate surveys in European countries. It obviously also ensures a broad variety of economic and labour market conditions as well as structural patterns and enrolment quotas in higher education. As the only non-EU country, Norway was included, because research expertise in Norway on graduate surveys clearly surpass that of other non-EU countries eligible to the TSER programme.

It might be added that the preparation of a representative graduate survey in Japan is underway. The researcher responsible for this survey (Prof. Keiichi Yoshimoto, Kyushu University) aims to adjust the survey as far as possible to the European study in order to ensure comparability, if the time schedules of the projects allow for an adjustment.

Field of study: A broad range of fields of study should be addressed in order to ensure that the range of factors discussed above is well represented in the survey. It remains to be decided in the initial period of the project whether a representative sampling will be undertaken across all fields or whether a typological selection of fields will turn out to be preferable.

Regions: The sampling will ensure that contrasting regions in terms of centrality, economic and social conditions, etc. are included.

Institutions of higher education and degrees: A broad range of higher education institutions should be addressed in order to ensure that the range of factors related to institutional type is well represented in the survey. Students will be surveyed who have been awarded the first degree or leaving certificate in the

respective countries based on between 2 and 6 years of study. Although three years of study is viewed as a minimum of study preparing for a professional career in the European Union, we have to include graduates from shorter programmes in a few countries (i.e. France, Norway) because the respective two-year programmes serve functionally equivalent training purposes to those of three or even four year programmes in other countries.

Sample size: The sample size should be sufficient for a detailed and systematic analysis in terms of the above-mentioned research questions. The central criteria of the sampling - "fields of study" and "institutions of higher education (or region)" - should have sufficient variation within each country. It will be necessary to include about 4,000 graduates in each country.

As a return rate of about 50 percent is expected, twice the number of addresses of the target sample are needed. Unless the total population of graduates is lower than the respective target size, 8,000 graduates in each country will be sent questionnaires, i.e. altogether up to 72,000 graduates.

2.5.3 Tracing of Names and Addresses

According to the local conditions the means for getting the addresses of the graduates vary by country. In some countries the actual addresses of the graduates are available from a central database, while in others only addresses at the time of graduation are available by the institutions of higher education (see Chart 6).

Chart 6: Methods of Tracing Graduates

Austria	Addresses from institutions of higher education, alumni clubs etc.
Finland	Actual addresses are available from Statistics Finland.
France	Addresses from institutions of higher education
Germany	Addresses from institutions of higher education, follow up by local government registration
Italy	Addresses from institutions of higher education, follow up by telephone
Norway	Actual addresses from Statistics Norway
Spain	Addresses from institutions of higher education
The Netherlands	Central database, located at the Informatie Beheer Groep in Groningen, all addresses will be continually be updated
United Kingdom	Up-dated addresses from institutions of higher education

2.5.4 The Conduct of the Survey

All tasks regarding the conduct of the graduate survey (collection/updating of addresses, mailing, check of questionnaires, coding, documentation of the coding and data editing) will be done by the local research teams. Procedures will have to adapt to the specific conditions in the respective countries, based on agreed principles.

In order to achieve the expected response rate of 50 percent, two reminder actions will be conducted. The questionnaires will be sent with the second reminder letter while the first reminder should be a letter only.

2.5.5 Data Analysis

The data analysis will be undertaken centrally in Kassel, i.e. the institutional base of the project co-ordinator, as far as reasonable for a common approach. However, all partners are equipped to undertake the analysis themselves. They will be provided with complete data sets, thus being in a position to pursue more detailed studies regarding their respective areas of specialisation and their country in comparative perspective.

A data base with the international data file (SPSS system file) will be developed by the research team at the University of Kassel and will be made available to the other teams. The strategies of data analysis will be discussed and developed at a workshop.

Special emphasis in the data analysis will be put on procedures of multivariate analysis in order to identify the most influential elements in this study on the relationships between higher education and employment. Causal models of links between elements of higher education institutions and the professional success of the graduates will be developed and tested with the LISREL approach. Advanced methods of multi-level analysis (the HLM approach) will be employed as well as methods of event history analysis for the analysis of career.

2.6 Interview Studies

2.6.1 The Complementary Functions of the Interview Studies

The graduate survey will be supplemented by in-depth case-studies through interviews among both graduates and employing organisations. The following considerations play a role in determining the design of these studies.

First, these studies enable the research team to investigate aspects of the relationships between higher education and work *in greater depth* than could be achieved in standardised questionnaire surveys. Notably, rationales and motives will be more validly analysed if people can present their views in more complex oral statements.

Second, the open structure of interviews is more suitable for addressing certain issues the *prior knowledge* of which is very *limited*. Changing tasks in technologically advanced sectors of production and services, as well as ways of establishing new professional activities in areas hitherto alien to graduates, have to be analysed in an exploratory way.

Third, the overall picture of the relationships between higher education and employment/work will be enriched if information gathered from graduates is complemented by information from *employers*. Thus, while one of the interview studies will address in greater depth a select group of the graduates previously surveyed through written questionnaires, the other interview study will address the views held by employers.

Altogether,

- about 25 graduates from each of the nine countries (about 225 altogether) will be interviewed about than three years after graduation,

- about 25 heads of personnel offices (or other representatives of employing organisations in the case of small firms) will be interviewed in each country.

As interviews are costly and time-consuming, they cannot cover the total range of varied competences as well as varied employment and work conditions. Therefore, graduates and heads of personnel offices will be selected to enable contrasting issues to be addressed, viz:

- on the one hand those being at the forefront of technological change, affected by new management approaches and ways of co-operation and division of labour, etc.,
- on the other hand, those who face problems arising from the expansion of higher education beyond the traditional presumed demands for highly educated labour and who are employed in non-traditional areas, i.e. those beginning their career in unstable employment, in newly emerging small enterprises, in positions previously held by non-graduates, etc.

We intend to select graduates from engineering and from the humanities. A comparison of the issues named above will be undertaken in a more targeted manner if the number of fields of study addressed is limited. Graduates of engineering will more frequently encounter the former issues and graduates from humanities more frequently encounter the latter issues (cf. OECD, 1993b), but the survey certainly will include a sufficient number of reverse cases.

Graduates will be selected for interview on the basis of their responses to the written questionnaires, thus allowing a targeted selection according to their employment and work situation as well as a merger of written questionnaire and interview data. When contacted for the purpose of arranging interviews, the graduates selected will be asked to provide the addresses of their employers, thus enabling contact to be established with the head of personnel office.

The interviews will be semi-structured. Some questions will be quite precisely formulated in order to make some quantitative presentations. In addition, open-ended questions will be formulated to allow expression of more particularistic, sector and/or country-specific issues. In both cases, however, the items will be tuned and the co-ordinators responsible for these case-studies will ensure a genuine comparative approach.

2.6.2 Major Themes of the Interview Studies

The interview studies will address, first, the *diversity of study options and their implications for employment and work*. We note three competing explanations in these respects.

- According to the first explanation, employment and work prospects are clearly sorted vertically. Those who are admitted to the most highly selective institutions of higher education and fields of study or those who earned the highest grades in the course of study will eventually end up in the most demanding, most prestigious and most highly rewarded areas of employment and work. Accordingly, the linkages between status of education and employment are dominant, and curricular approaches or individual study and career options play at most a secondary role.
- According to the second explanation, the curricular approaches chosen by the individual departments and institutions are the most important (see, for example, Boys et al, 1989; Breneman, 1994; Harland & Gibbs, 1986; De Weert, 1995). Efforts to combine knowledge from different disciplines, to address most recent technological developments, to specialise in employment-related ways, and to address issues of application of knowledge might be successful in "seizing" corresponding sectors of employment and work.
- According to the third explanation, the individual motives of students and their choice of study options are the dominant force. Competences are not primarily shaped by study conditions and provisions, but by the way students make use of them (cf. Pascarella and Terenzini, 1991). Curricula might support or hinder the options through flexible or rigid modes. Even when a strong institutional and curricular impact can be assumed, at least a significant minority of students might not follow the main track, but might instead choose, for example, a more risky academic career, work tasks which match their socio-political motives, or careers which promise more job security and leisure rather than status and demanding work tasks (see Schomburg and Teichler, 1993).

The interviews with graduates are thus hoped to provide a more detailed analysis of the interrelationships between vertical selection, curricular approaches and the experiences and individual options taken by students. Similarly, the interviews with heads of personnel offices are expected to indicate how employers address different options in recruitment, work assignment and career rewards.

Second, the interview studies will analyse the *changing nature of work and employment settings*. We might, for example, observe the character of work in more fluid forms of organisation, characterised by flatter management structures, semi-autonomous work units and networking. Crozier (1993), for example, speaks of "l'entreprise à l'écoute" in post-industrial management indicating that new forms of work organisation are emerging based on principles of decentralisation, few formal hierarchies, human-centredness, responsibility and multi-skilling, new uses of information-based technologies. Or we might observe the work assignment and employment settings in small, newly established firms run by a few graduates which aim to provide services having lacked professionalisation in the past and which are in the process of establishing their market niche.

The purpose of the interviews in this context, obviously, is not to identify the frequency of new patterns of employment and work. On the contrary, the written questionnaire will address this theme extensively, and the findings of the questionnaire survey are expected to provide a corresponding mapping. Rather, the interviews should help explain issues which the questionnaire survey can touch only briefly: for example ways of communication, co-operation and control, continuities and discontinuities of work tasks and implications for career, the extent to which work tasks are predetermined by the substance of work or by organisational settings or are structured by the respective job holder, etc.

Third, the interview studies will address the *utilisation on the job of the competences acquired in the course of study*. Three issues, according to the available concepts and surveys, deserve special attention in this context.

- The interviews will aim to establish the knowledge base and its utilisation in contrasting work settings. One might ask, for example, both the employers and the graduates about the functions which abstract knowledge, formal knowledge or professional knowledge have for the foundation of a profession (see Abbott, 1988; Freidson, 1983). Similarly, one might explore the extent to which work is based on competences of a specialised or a general nature.
- A second focus will be the role which motivations, 'personality' and 'social skill' actually play in various professional contexts - i.e. normative and affective dimensions of competences which, notably according to employers' claims (see for example IRDAC, 1992), are more crucial nowadays for successful job performance of graduates than they have been in the past. The interviews will address in greater depth both the specific meaning of these dimensions according to both the employers and the graduates, their links with cognitive competences and the hidden agendas of the respective claims.
- Finally, the interviews are intended to shed light on the objective and subjective factors underlying graduates' perceptions of using or not using their competences on the job as well as of being employed appropriately or inappropriately. The interviews will assist in identifying the interplay of macro-social and macro-economic conditions, specific employment and work conditions, perceived competences, aspirations and personal circumstances in the respective perceptions and assessments.

The list of themes and specific questions to be addressed in the interviews will be completed only after the results of the questionnaire survey are available. This procedure is required in order to identify cases which match the contrasts named above. Thus, topics might be added as a result of unexpected results from the survey.

3. Benefits of the Project and Dissemination of Its Results

3.1 Provision of Basic Information

The project will provide a solid comparative account of employment and work of graduates from institutions of higher education in Europe. Information about employment and work of graduates of institutions of higher education is generally relevant

- ? for decision-making by politicians,
- ? as a valuable information base both for employers and for leaders, managers and teachers in higher education,
- ? as an orientation help for students.

Given the widespread consensus about the importance of such information, it is surprising to note how scattered and weak the available information is up to now. This study will provide for the first time reliable comparative data.

3.2 In-Depth Knowledge on Current Issues

The project aims to address current issues of graduate employment and work. It will provide information about the ways in which graduates cope with the most urgent and pressing challenges in the 1990s. As discussed above, we expect a substantial interest in the findings, among others, regarding the following questions:

- How do employment and work change in the technologically most advanced sectors of production and services, and how do graduates master these changed tasks?
- What changes in occupational sectors and work tasks do we note as a consequence both of the increase in student enrolment and of growing labour market problems? How do graduates fare in sectors viewed hitherto as marginal for graduate employment, in positions traditionally not considered suitable for graduates or in newly emerging occupational roles? Does there prevail a mood of despair, or are there indications of active ways of coping with the new challenges and increasing innovations in occupations?
- What happens to graduates who experience longer than average periods of unemployment immediately following graduation? What are the impacts of retraining and other counteracting measures? What are the effects of early employment problems on the subsequent stages of professional life?
- How does employment and work differ according to region? What are the specific conditions of higher education in economically and socially disadvantaged regions?

To what extent do we observe regional mobility of graduates from disadvantaged regions, and what are the consequences of this mobility both for the disadvantaged and for other regions?

3.3 Identification of Early Career Trajectories

The analysis will focus on the transition from higher education to employment and the early period of employment and work, i.e. the first three years after education. As educational paths will be identified retrospectively, the study allows us to examine the trajectories over a substantial period of the life-course.

3.4 Identification of Impacts of Higher Education

The project, further, aims to overcome the limitations of most existing statistics and surveys which do not allow us to understand the impact of the various dimensions of higher education on graduate employment and work. As a rule, information on employment is provided, but higher education is treated as a black box. In surveying the provisions and conditions of higher education and key aspects of study behaviour, we will provide evidence of different degrees of success or failure in preparing students for professional life. Also, we will examine the impact of different models of diversification in Europe, as far as graduate employment and work are concerned.

3.5 Making Use of the Potentials of Comparative Study

The above named objectives would be valuable contributions in individual European countries. A comparative study in Europe, however, can be far more valuable in several important respects. It might serve

- as de-mystification of concepts prevailing in individual countries - for example regarding the typical problems of certain fields of study, the role of short-cycle higher education for employment and work, etc. - by showing contrasting evidence from other societies;
- or, in contrast, to identify macro-societal factors which play a role in determining graduate employment and work. Evidence of this kind can only be provided through international comparison;
- to determine the position of one country in a comparative perspective. Such "benchmarking" of a problem frequently mobilises efforts for change more readily than debates within a national context;
- to develop a conceptional framework for a study which is not biased by the idiosyncrasies of individual countries, but allows analysis of problems in a genuinely

comparative perspective (cf. the analysis of comparative higher education research in Goedegebuere and van Vught, 1996; Teichler, 1996).

3.6 Exploring European and International Dimensions of Graduate Employment and Work

The study will for the first time provide representative information on the extent to which graduate employment and work has already become European and international. It will show, for example,

- how many graduates from European institutions of higher education get employed in other European countries or in countries outside Europe;
- what role foreign language proficiency plays on the job;
- how important European and international communication and co-operation is for graduates' work tasks, to what extent knowledge of culture and society of other European countries is employed;
- what jobs address the European Community and its administration;
- whether temporary study abroad or enrolment in programmes strongly emphasising the European dimension have a corresponding impact on graduates' subsequent employment and work assignments.

Information of this kind is a prerequisite for assessing the specific needs for European higher education policies as well as the impacts of prior policies and activities in this area. Up to the present, information in this area is scattered and partial. A representative survey would greatly enhance the state of knowledge.

3.7 Theoretical and Methodological Improvement

Finally, the project intends to contribute to theoretical innovation and methodological improvement in the area of research into higher education and employment. On the one hand, the project will provide an opportunity to examine the need for revision of prevailing concepts in economics and sociology regarding the relationships between higher education and employment and personnel policies as well as the endemic uncertainties and vagueness concerning acquisition and utilisation of academic knowledge. On the other hand, the project team will devote a considerable component of its joint efforts to the development of a genuinely comparative methodology suitable for analysing competences, employment and work in Europe. Categories have to be chosen or newly developed which are sufficiently neutral and polyvalent to allow for a comparative study of employment, work and utilisation of knowledge in a substantial number of European countries in order to overcome the pitfalls of prevailing

terminologies and research approaches in individual countries which merely reflect idiosyncrasies of education and work in the respective country.

3.8 Preparatory Study for a Regular Data Base

The study should serve as *a first step towards a regular data base on graduate employment and work in Europe*. For this purpose, available expertise has to be scrutinised and has to be brought together in a research team which might help to

- develop concepts and a respective terminology - as regards higher education, dimensions of competences, types of work tasks, ways of utilisation of knowledge, etc. - suited to analyse the varied European traditions in this domain in a genuinely comparative manner, i.e. identifying functional categories to overtly different phenomena and definitions; and
- identify the best possible solution of analysing complex relationships between higher education and employment, work and career within the typical potentials and limits of standardised questionnaires.

A detailed design of a graduate questionnaire survey and a master questionnaire will be formulated which could serve as a model for regular graduate surveys in the European Union.

3.9 Dissemination of the Results

The researchers co-operating in the project aim to produce four types of reports:

(A) A report addressing the *interested public* (students, employers, academics of various fields, politicians and administrators). It will report *the highlights of the findings* and discuss their *policy implications* (European report A).

The major focus of this report will be differences between European countries in graduate employment and work, the impact of higher education on subsequent careers, and the relationships between higher education under the conditions and challenges of the 1990s. While remaining short in technical details, the report should be both informative and challenging as far as policy implications are concerned. It is hoped that the report and possibly additional articles will address a large audience. Access to popular journals will be sought as well.

(B) A *research report* addressing the experts in the fields (European report B). It will document the theoretical framework, the research design and methodology, the findings and will interpret the findings thoroughly. In addition to themes addressed in (A), it will provide the results of multivariate analyses on the relationships between educational and

socio-biographic background, higher education, transition to employment and employment and work three years after graduation.

The major research report is aimed to be published in an academic book. Select aspects will be published in academic journals as well.

(C) A *technical report* on the *implications of the study for future regular surveys* of graduates in Europe (European report C). This report will examine, among others, the issue of common terminology and common categories, differences in the transition period relevant for the research design, access to graduates' addresses in various European countries as well as possibilities and limits of a joint questionnaire for different Europe countries. It will comprise a model design for the European graduate survey and a respective model questionnaire.

The research team will propose to the European Commission to invite experts to a European conference in order to explore the opportunities of regularly conducting a survey on graduates in Europe.

(D) *National studies in comparative perspective*. The researchers from all countries participating aim to present the major findings of their respective country in comparative perspective (country reports). Depending on the quality of the data and the relevance of the findings as well as on the researchers inclinations, these reports will be published as books or journals and will be directed both to academic audiences and to those primarily interested in the policy implications.

4. Project Management Structure

4.1 Tasks of the Partners

The project will be undertaken jointly by researchers from 10 research institutions and groups in nine European countries. The research groups are in part embedded in regular university departments, in part in specific research establishments at universities and in part in research institutions outside higher education. All are experienced in the field of research represented in this proposal. Accordingly, analysis of the results of the surveys will be enriched by the substantial contextual knowledge possessed by the research teams and by their previous studies in this field.

Researchers of the different countries will co-operate

- *partly in terms of thematic division of labour*: each group is in charge of analysing the theories and methods employed regarding certain thematic areas, for example the impact of diversification, regional differences in higher education, or changing relationships between higher education and employment/work in the wake of Europeanization. This will ensure coverage of the broad range of themes to be addressed,
- *partly in terms of joint responsibilities*: the details of the research design and the survey instruments (questionnaires and interview guidelines) have to be based on in-depth co-operation and joint agreement. Mutual understanding and agreement is not only essential for respecting the competences and the academic freedom of everybody involved, but also in order to ensure a genuine comparative approach,
- *partly in a decentralised way of taking over local tasks*: the researchers will be in charge of all the processes of surveying in their respective country. They also will analyse graduate employment and work in their respective countries.

The tasks of the research teams in each country:

- (a) Contributions to the conceptualisation of the study;
- (b) Translation of the questionnaires in the local language (and retranslation);
- (c) Taking over all tasks regarding conduct of the graduate survey (collection/updating of addresses, mailing, check of questionnaires, coding, documentation of the coding and data editing);
- (d) Conduct, transcription and partly translation of interviews with employers and graduates;

- (e) Participation in the data analysis and report writing of thematic issues of the European reports;
- (f) Preparation of the country report (including comparison with the other European countries).

The *co-ordination* will rest with the Centre for Research on Higher Education and Work of the University of Kassel (Wissenschaftliches Zentrum für Berufs- und Hochschulforschung der Universität Gesamthochschule Kassel). Prof. Ulrich Teichler will be the co-ordinator of the project both in terms of the administration of the project as well as the research process, notably the graduate surveys. The Centre will produce the European data set (SPSS system file) and will assist the data analysis of the other research groups wherever needed.

The *two additional studies* will be co-ordinated by other members of the research team. Dr. Egbert de Weert (Centre for Higher Education Policy Studies of the University of Twente) will be in charge of the employers' survey. Prof. Paul Kellermann (University of Klagenfurt) will be responsible for the graduate interviews. The interviews will be conducted in each country by the respective members of the research teams.

The tasks and the responsibilities are listed in Chart 7.

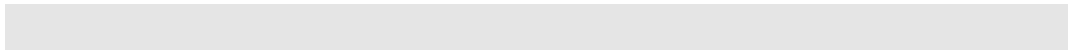


Chart 7: Tasks and Responsible Persons and Institutions

Tasks	Co-ordinator	Each partner	Individual responsibility
Fine tuning of the design (selection of target population, timing, etc.)	X	X	
<i>First project workshop on "Design and Methods"</i>	X		<i>University of Valencia</i>
Development of survey instruments (master questionnaires)	X	X	
Preparation of the surveys (national adaptation and translation, printing of questionnaires)	X	X	
Field phase: graduate survey	X	X	
Field phase: interviews with employers	X	X	<i>University of Twente</i>
Field phase: interviews with graduates	X	X	<i>University of Klagenfurt</i>
Coding	X	X	
Data entry	X	X	
Development of an international data set	X		
Data analysis, table report with the international data set	X		
<i>Second project workshop on "Data Analysis"</i>	X		<i>University of Turku</i>
Data analysis	X	X	
Draft comparative reports with the international data set	X	X	
National reports	X	X	
<i>Third project workshop on "Results"</i>	X		<i>University of Kassel</i>
Final comparative reports	X	X	

At all of the research units involved, the director or one of the senior researchers will actively participate in the research project. This will ensure that all the experience acquired in the various units will be made available continuously in the research project from the preparation of the project up to the final report. At various units, staff highly skilled in survey methods and data analysis will be involved in order to ensure the highest possible methodological quality of the project. Other than that, each research

unit involved will form their research team according to their own staffing conditions and work styles.

4.2 Workshops

Three project workshops will be arranged in order to provide the opportunity for face-to-face communication in the most crucial stages of the project:

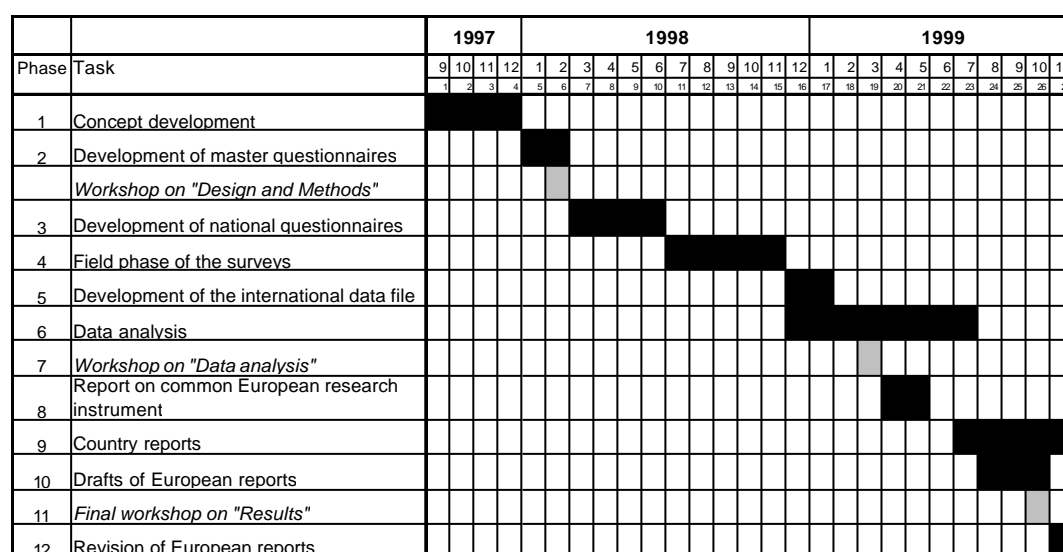
- The first workshop will serve the final fine-tuning of the research design as well as final decisions regarding the questionnaires and interview guidelines.
- The second workshop will provide the opportunity to discuss the findings of the questionnaire survey and to decide about major thrusts of the analysis.
- The third workshop will allow for a final critique and mutual advice regarding the manuscripts, i.e. both the comparative chapters as well as the national reports.

4.3 Schedule

On the assumption that the project cannot start before September 1997, the total duration would be from September 1997 until November 1999, a total of 27 months.

The project can be divided into 12 phases with specific tasks. These are shown in Chart 8.

Phase	Task	Time
1	Concept development and themes of the questionnaire Preparation of field phase	September - December 1997
2	Development of master questionnaires	January - February 1998
	<i>Workshop on "Design and Methods"</i>	February 1998
3	Development of national questionnaires, translation and printing Tracing of addresses	March - June 1998
4	Field phase of the surveys Development of code books Data entry Transcriptions and translation of interviews	July 1998 - November 1998
5	Development of the international data file	December 1998 - January 1999
6	Data analysis First drafts of reports	December 1998 - July 1999
7	<i>Workshop on "Data analysis"</i>	March 1999
8	Report on common European research instrument	April - May 1999
9	Country reports	July - November 1999
10	Draft of European reports	September - October 1999
11	<i>Final workshop on "Results"</i>	October 1999
12	Revision of European reports	November 1999
	Dissemination of results	2000



4.4 Milestones

4.4.1 Conceptualization and Formulation of a European Graduate Questionnaire

After six months (i.e. at the end of February 1998), the research will be in the position to present a detailed concept and a research instrument for a European graduate questionnaire survey. At this point in time,

- the themes to be addressed,
- the possibilities of using common categories in the analysis of higher education and employment in various European countries,
- questions to be raised in the survey

will be finally determined. A workshop close to the end of this stage will allow to undertake final decisions in those respects.

This completion of this first stage allows to begin discussions between the research team, the European Commission and various national agencies in the member states of the EU about the possibilities of establishing regular surveys of graduates from institutions of higher education in Europe.

4.4.2 Data Collection and Data Entry

After 15 months, (i.e. at the end of November 1998), all data will be collected. The responses provided to the questionnaires will be available in a data file and the interview reports will be available. This stage can be reached at a relatively early point, because the process of data entry will start immediately after the first responses will be made available.

Thus, a basis is provided for the subsequent analysis of the findings.

4.4.3 Data Analysis and Provisional Reports

The data analysis will start December 1998. After some period, a second workshop will be undertaken. This will help to establish the multi-variate stage of research strategy, after a first analysis of data has been undertaken.

After 25 months (i.e. at the end of September 1999), draft reports on individual themes of the research project will be available. This will form the basis for the final analysis of the interrelationships between the various themes addressed in the study as well as for the integration of the findings of the questionnaire surveys and the interview surveys.

4.4.4 Completion of the Project

In the final stage of the project, the members of the team will

- revise the draft report on the individual themes and survey,
- write a synthesis report,
- write a technical report, thereby revising, on the basis of the research experience, the concept and questionnaire formulated during the first stage of the project.
- analyse the individual country data in comparative perspective and write country reports.

All reports will be available after 27 months (i.e. by the end of November 1999).

4.4.5 Dissemination

After the completion of the projection and after the termination of funds expected from the TSER programme, the members of the team will continue to co-operate in the year 2000. Last editorial activities might be required. The members of the team are expected to give presentations and to write articles both addressing a wider audience and their academic colleagues. Activities might be undertaken to support the establishment of a regular European graduate survey.

5. The Partnership

5.1 Countries, Institutions and Researchers Involved

The majority of researchers involved in the preparation of this research project have already co-operated for various years in the framework of the Consortium of Higher Education Researchers (CHER), i.e. the Europe-based association of researchers in the area of higher education who are interested in comparative research. Regular co-operation in conferences, training seminars and joint publications has led to a common basis of knowledge in this area as well as to mutual trust in creative co-operation.

The countries, persons and research institutions involved in the project are listed in Chart 9. The names of researchers involved will be supplemented in the course of the project by those of some junior researchers.

Chart 9: Countries, Persons and Research Institutions Involved in the Project

Country	Contact person(s)	Institution
1. Germany	Prof. Ulrich Teichler (Co-ordinator) and Harald Schomburg	1. Wissenschaftliches Zentrum für Berufs- und Hochschulforschung, Universität Gesamthochschule Kassel
2. Austria	Prof. Paul Kellerman	2. Institut für Soziologie, Universität Klagenfurt
3. Finland	Prof. Osmo Kivinen and Prof. Risto Rinne	3. Research Unit for the Sociology of Education, University of Turku
4. France	Prof. Jean-Jacques Paul	4. Institut de Recherche sur l'Economie de l'Education, Université de Bourgogne
5. Italy	Prof. Roberto Moscati and Dr. Michele Rostan	5. IARD Istituto di Ricerca, Milano
6. Norway	Dr. Per Olaf Aamodt and Dr. Clara Aasa Arnesen	6. Norwegian Institute for Studies in Research and Higher Education, Oslo
7. Spain	Prof. José-Ginés Mora Ruiz	7. Unit of Economics of Education, University of Valencia
8. The Netherlands	Dr. Egbert de Weert	8. Centre for Higher Education Policy Studies, University of Twente
	Prof. Hans Heijke; Dr. Rolf van der Velden and Dr. Lex Borghans	9. Research Centre for Education and the Labour Market, Limburg Institute for Business and Economic Research, Maastricht

9. United Kingdom	John Brennan Brenda Little and Dr. Sandra Jones	10. Quality Support Centre, The Open University, London
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The research team comprises a substantial proportion of the most versatile research units and the most experienced researchers in the area of research on higher education and employment/work in Europe. As the capability statements of the respective units and the bibliography underscore, the project brings together a wealth of valuable research experience.

When the co-operation was established, the key criterion for participation, in fact, was theoretically and methodologically well grounded research experience, both in employment/work and higher education. This was considered necessary in order to ensure that the study of graduate employment and work scrutinises the impact of study provisions and conditions. Additionally, the analysis of employment and work should be designed in such a manner that feedback for improvement in higher education is achieved wherever possible.

For example, the Norwegian Institute regularly conducts national surveys on graduate employment; these surveys are more detailed in the analysis of employment and work than large-scale surveys of other European countries. The research group of the Rijksuniversiteit Limburg undertakes national surveys of graduates from non-university higher education (hogescholen) and provides standard instruments for universities. The British, German and Austrian researchers had been responsible for the only or the major longitudinal surveys in the respective countries. The Finnish Research Unit is regularly undertaking national surveys, for instance in co-operation with Statistics Finland, on the relationships between education, employment, career and work.

The research team is unique in assembling the most complex knowledge and expertise in Europe relevant to the theme and the chosen research approaches. Almost all research units of the respective countries

- have been involved both in research on higher education and in research on employment, occupations and work,
- emphasise both theoretical and empirical research work in their respective domains,
- combine academic and practical application approaches,
- have been active in a broad range of themes,
- have employed both "quantitative" and "qualitative" research,
- have adopted a multi-disciplinary approach,
- are highly skilled and experienced in research,

- have already collected experience in international research cooperation.

The mutual trust in the quality of research undertaken in the respective countries made it easy to agree on jointly undertaking this demanding project and on the theoretical and methodological priorities proposed.

Last but not least, a substantial proportion of the research units involved are among the largest or even the largest units specialising in higher education and its links to society of the respective countries. In addition to their possession of the broad range of knowledge relevant for the project, they are well prepared to undertake research of this kind in terms of their experience in research management. The good reputation of the research teams will also help to ensure a willingness both of institutions of higher education in cooperating to provide former students' addresses, and of graduates in responding to the questionnaires.

5.2 Capability Statements

The subsequent list indicates the aim and the resources of the research units co-operating in the project, their research experiences in the area addressed as well as the resources to be made available for this research project.

1. Wissenschaftliches Zentrum für Berufs- und Hochschulforschung, Universität Gesamthochschule Kassel

The Centre for Research on Higher Education and Work (Wissenschaftliches Zentrum für Berufs- und Hochschulforschung) of the Comprehensive University of Kassel (Universität Gesamthochschule Kassel) in Germany is one of the leading research institutions specialising in higher education. It is known for combining analyses of quantitative/structural, substantive/teaching and learning, and managerial/organisational, and finally social/contextual issues of higher education. Further, it has been more strongly involved in comparative analyses than other European institutions in this area. A broad range of methods tends to be employed, whereby the Centre is more strongly involved in survey research than other institutions addressing comparative and international issues in higher education. The Centre was founded in 1978 and it currently employs more than 15 professional staff.

The conduct of graduates and employers surveys is one of the core elements of the research programme of the Centre. Among others, a ten-year longitudinal study was undertaken of graduates from German institutions of higher education, thereby establishing the impact of study conditions and provisions on transition to employment, career and work assignments. Various in depth studies addressed links between study and work in selected fields of study, for example in engineering, social sciences, humanities and fine arts as well as employer's

expectations and recruitment criteria. The Centre also has been strongly involved in research on international co-operation and mobility in higher education as well as the steering and management of international activities in higher education. Among others, it conducted a seven year evaluation project of the ERASMUS programme. Other projects addressed the predecessor programmes of Human Capital and Mobility, the Human Capital and Mobility programme, the TEMPUS programme as well as various national mobility programmes.

The Centre is willing to support the project and to take the key role in preparing the international database and the co-ordinating activities. It will contribute to the project as complementary to TSER support, with at least 15 months work time of Harald Schomburg, an experienced research staff member of the Centre, involved in several research projects on graduate employment and work, and specialised in quantitative research methods; at least 4 months work time of Prof. Ulrich Teichler, the key senior researcher of the Centre in European/international/ comparative studies on higher education; at least 12 months secretarial work; office space, equipment and computer facilities.

2. Institut für Soziologie (IFS), Universität Klagenfurt

The IFS (Institute for Sociology) is one out of about 20 institutes of the University of Klagenfurt/Austria. They are all involved in teaching, research and administrative work. The foci of teaching of the IFS are in sociology of education for students of educational sciences, in sociology of work and business for students of computer science and of business administration. In addition, the IFS offers classes in sociology in general, sociological theory, and history of sociology for all students. The administrative work comprises self-administration of the institute, the University of Klagenfurt, and of the Austrian system of universities.

The IFS has a long tradition in research into higher education, especially concerning access to higher education and subsequent education and career. The surveys comprised all freshmen of the University of Klagenfurt since 1973/74, and two surveys of all freshmen of four additional Austrian universities. Further, a panel study was undertaken (1973-1986) of Carinthian highschool leavers. In addition, since 1988 the IFS has also investigated all senior students shortly before graduation. In 1991, the IFS started the new research project "The University and its Graduates", inquiring social background, the choice of studies, successes and failures during the studies, evaluation of the acquired competencies, skills and abilities with reference to qualifications required in daily life after graduation.

Prof. Paul Kellerman and the three assistants of the IFS will participate in the project and contribute, as a complement to TSER funding, with eight months

academic staff time. The IFS will provide the necessary infrastructure (secretarial support, computer facilities, etc.).

3. Research Unit for the Sociology of Education (RUSE), University of Turku

RUSE's roots go back to cooperation between researchers in sociology and education which began to develop in the early 1980's. At first the activities were built around a few research projects, but nowadays RUSE is an independent department within the Faculty of Social Sciences. It is the only research unit in Finland specialising in research on the sociology of education and educational policy.

Although RUSE is purely a research unit giving no basic higher education, it is committed to promoting the training of researchers in the social sciences, and the unit is continuously involved in numerous research projects leading to post-graduate degrees. At the moment there are altogether about 30 researchers and research assistants working at RUSE, majority of whom are funded by research grants.

The Unit's tasks, according to its statutes, are e.g. to carry out research on the sociology of education, especially higher and adult education, educational policy and educational systems, and to investigate the relationships between education and work, and to promote national, international and interdisciplinary research cooperation in the field of educational research. In the 1990's the major areas of research are interrelations between education and work, higher and adult education and international comparison of educational systems. As regards the interrelations between education and work, the main focus lies in examining how formal (educational) qualifications are interrelated with the (actual) qualifications required by the work; how the intermediating mechanisms are working in the chain of schooling - educational market - job market - work life; how the accumulation of education and work experience affect people's career paths, professional life and status. RUSE is regularly undertaking large-scale surveys, for instance in co-operation with Statistics Finland, in the field of higher education, educational qualifications, employment and work.

The unit is willing to contribute to the European Research project, complementary to TSER funding, about 15 work months of Arto Kankaanp, an experienced researcher of the Unit. In addition, at least 4 months work time of the two senior researchers (Professor Osmo Kivinen and Professor Risto Rinne), secretarial and office support services and computer facilities will also be provided.

4. Institut de Recherche sur l'Economie de l'Education (IREDU), Université de Bourgogne

The Research Institute on Economics of Education (IREDU) was created in 1971 as a CNRS associated centre. Its initial purpose was to catch up with research in this new field which had developed in Anglo-Saxon countries in the 1960's. IREDU has since considerably developed its activities and stands now as one major research team in the field of education. In particular, IREDU has always traditionally favoured empirical research requisite to accumulate substantial experience in data base setting over the years.

IREDU at present focuses on a comparative evaluation of education policies. Among others, studies are undertaken on the production function and cost and financing analysis. Earlier attempts to measure the external efficiency of education through rates of return analysis (estimates of the Mincer's model) has lead to new approaches in analysing the relationships between education and professional careers. Analysis of professional careers in terms of trajectory has made it possible to take into account variables such as unemployment or labour management to account for differences observed in the careers of individuals sharing the same educational background. A more analytical use of specific on the job training has brought together employers' policies and employees' strategies into a more coherent system of interpretation based on human capital. More recently, investigations have been undertaken on the macro-economic level, in particular with econometric analysis of the impact of education in France.

Finally, IREDU has been acting since 1975 as a CEREQ (Centre of Research on Qualifications) associated partner, i.e. a national institute promoting a better understanding of the relations between education, training and employment and undertaking national surveys on school leavers at all levels, including from higher education institutions. As an associated partner, IREDU shares CEREQ's expertise and has undertaken several surveys to study the entry of young graduates on the labour market.

IREDU has contributed significantly to creating a dialogue between specialists from different disciplines and to the confrontation of opinions on education. It is known and recognised at an international level and its capacity of expertise is well established. About 30 persons contribute to its general activity, among them mostly economists and a few sociologists.

IREDU is willing to contribute to the project "Higher education and graduate employment in Europe", complementary to TSER funding, with at least 15 work months from its research team. In addition, Director of Research Jean Jacques Paul will use at least 4 work months. Necessary office space and equipment including computer facilities will be allocated to the project.

5. IARD Istituto di Ricerca, Milano

IARD is a research institute operating in the fields of education and training processing on the basis of a multidisciplinary approach which integrates various social sciences (education, psychology, sociology, economics). It was founded in 1961 as a non-profit association and has been a co-operative since 1988. Throughout the over thirty years since its founding, IARD has focused its attention primarily on studies of youth conditions, education and curricula development.

The most well-known IARD fundamental studies are the "National survey on youth" carried out every four years (the most recent one in 1996), and the "National survey on teachers". Other studies in the field of the condition of youth have dealt with the territorial dimension, as it has been the case of research on "The condition of youth in Southern Italy" (1986), "The condition of youth in Lombardy" (1988), "The relationships with the political and cultural attitudes of young European people" (1992). In 1995-96 IARD carried out for the European Commission - DG V the international study "Youth unemployment and informal economy in Southern Europe."

Special attention is paid to the issue of the transition from school to work with research on "Youth and work conditions" (1988), "Work expectations of graduating students and professional issue of graduates in Milan" (1988), "Female transitions from school to the work place" (1991). Other projects have been dedicated both to vocational training - e. g. "Work/training contracts: analysis of the demand" (1988); "The problem regarding the link between professional training centres and the new trends in the labour market" (1992) - and to university - e. g. "The phenomenon of students who fail to complete courses in the School of Engineering at the Polytechnic University of Milan" (1992).

One of the senior researchers, Prof Roberto Moscati (University of Milan and University of Trieste) will be involved at least 4 months, and Dr. Michele Rostan (University of Pavia) will contribute 12 months work time to the project. The contributions are complementary to TSER funding. Secretarial and normal office support services, accommodation and computers facilities will also be provided.

6. Norwegian Institute for Studies in Research and Higher Education (NIFU), Oslo

The Norwegian Institute for Studies in Research and Higher Education (NIFU) in Oslo is unique in the sense that it combines studies of higher education and research, and it is probably one of the biggest units in Europe for studies in higher education. It has been a contract research institute owned by the Norwegian Research Council until 1995. Since 1996 it is a autonomous foundation. It plays a key national role in research and statistics within the field of research and higher education. The Institute is also active internationally, with

long-term connections to the OECD and the Nordic Council of Ministries. The Institute was founded as an independent unit in 1969, but the activities date back to the mid-fifties as part of the administration of the research council. At the moment the Institute employs more than 30 researchers.

Research on higher education represents about one half of the research activities, and is organised in two sections: Section 3 - Institutions of Higher Education focussing on the university and the college system, e.g. its organisation and personnel, the relation between teaching and research, the need for recruiting staff, and analyses of public policy in the area, and Section 4 - Study Conditions and Student Flow, doing research on recruitment of students, their flow through the educational system, quality assessment, and the relation between higher education and work. In addition the Institute produces R & D statistics and undertakes science policy studies. Research on higher education is carried out by staff members mainly educated as sociologists, political scientists and economists. A broad range of methods is used, but the Institute has its strongest tradition in statistical and survey methods.

Research on higher education and the labour market has always been a core element at the Institute. Since 1972 it has carried out regular graduate surveys, both six months after graduation, and follow-up studies up to ten years after graduation. In the follow-up studies methods for mapping career patterns have been developed, and sophisticated statistical techniques have been introduced. The Institute was also involved in manpower forecasting and qualitative studies. Thereby research on the labour market for graduates is embedded in a broad setting of research on higher education.

Research on higher education and employment is carried out by a research team of four researchers and one research assistant headed by Dr. Clara Aase Arnesen. The Institute is willing to contribute to the European research project, complementary to TSER funding, with at least 15 work months from this research team. In addition, the Director of Research, Per Olaf Aamodt will devote 4 work months. The necessary facilities will be made available.

7. Unit of Economics of Education, Faculty of Economics, University of Valencia

The research group in economics of education (Unidad de investigacion en economia de la educacion) is directed by Prof. Jose-Gines Mora. This group is experienced in the practical and theoretical analysis of higher education in Spain. The research group addressed various issues of economics of education, notably links between education and the labour market. During the last five years, the group advised the Spanish Council of Universities. It designed the institutional evaluation model in the Spanish universities and carried out a respective study. It also designed the new financing model for Spanish universities and is currently involved in strategic planning for universities.

Recently, a survey of graduates of the University of Valencia was undertaken which pursued similar objectives to those proposed in this project.

The group is willing to contribute to the project, complementary to TSER funding, with at least 10 month of work time of Prof. Jose Gines Mora, director of the group; contributions by various researchers of the Basque University, as well as the Universities of Barcelona, Zaragoza and Oviedo. They will be in charge of surveying in their respective regions; collaboration with the Council of Universities; secretary, computer and other facilities.

8. Research Centre for Education and the Labour Market (ROA), University of Maastricht

The Research Centre for Education and the Labour Market (ROA) is a research institute attached to the Faculty of Economics and Business Administration of the University of Maastricht. ROA's chief activity is commissioned research, although it also has a limited teaching role.

ROA's research field is the match between education and the labour market. The institute tries particularly to provide scientifically credible information about the extent to which the education system meets the needs of the labour market. This information is intended to be useful for policy decisions of public authorities, educational institutions, employment services, trade and industry, etc.

The central mission of ROA is to increase the transparency of the labour market for those facing study choices and others involved in investments in education. It carries out research for the further development of the Information System on Education and the Labour Market, which supplies data about the current and future position of types of education on the labour market. ROA's major activities therefore relate to the collection and analysis of large scale databases concerning the labour market, the development of indicators referring to the match between the education system and the labour market, and the production of medium-term forecasts of the labour market prospects according to type of education. ROA conducts large-scale annual surveys of school leavers from secondary education (the RUBS-survey) and from Higher Vocational Education (the HBO-monitor). A survey of graduates from universities was applied on an annual basis at the University of Maastricht (RL labour market scanner). A considerable number of related studies concern higher education. Moreover, ROA has been involved in several international comparative studies on skills needs, costs and benefits of training, and the monitoring of skill potentials in the labour force for technological innovation and diffusion.

Since its establishment in 1986, ROA has grown to be a research institute with about 30 staff members, which has established a strong position in a quite

specific research field. ROA's research is part of the Economic Faculty's research programme, and it contributes to the Faculty's Master's programme.

ROA's part in the proposed study on higher education and graduate employment in Europe will be carried out by Professor Hans Heijke, Director of ROA (supervision), Dr. Rolf van der Velden, Chief Researcher, responsible for ROA's graduate surveys and Dr. Lex Borghans, econometrician, experienced in labour market analysis and forecasting. It will contribute to the study, complementary to the TSER funding, with the academic staff time as well as the provision of the infrastructure for the project.

9. Center for Higher Education Policy Studies (CHEPS), University of Twente

The Center for Higher Education Policy Studies (CHEPS) is an interdisciplinary research institute at the University of Twente, the Netherlands. CHEPS participates in debates on policy-making, governance, and management in higher education primarily through research and policy-analysis.

Over the years, CHEPS has undertaken projects for many different organisations and various national governments. In addition CHEPS has been involved in projects and studies for the European Community, the European Rectors' Conference, the Organisation for Economic Cooperation and Development, UNESCO, the World Bank and several other international organisations and foundations.

The activities are organised along four areas: comparative policy studies in higher education; higher education finance; management and administration of higher education institutions; quality assessment and quality management in higher education. CHEPS has collaborated in several comparative projects on an international basis. Research on higher education and the labour market has been carried out both for higher education institutions and intermediary organisations in higher education and international organisations such as the OECD.

CHEPS is willing to support the project on Higher Education and Graduate Employment in Europe. Egbert de Weert, an experienced researcher at the center will, complementary to TSER funding, contribute twelve months work time to the project. The necessary facilities will be made available.

10. Quality Support Centre, The Open University, London

The Quality Support Centre is part of the UK Open University. It undertakes research and development into higher education nationally and internationally in three main areas: higher education and work; quality assurance methods and systems; institutional change. It was created in 1992 out of the research and

development activities of the former Council for National Academic Awards. It currently employs 10 staff.

The Centre's staff have carried out two major national surveys of the employment experiences of UK graduates and recent follow-up activities have included published comparative analyses of British/German graduates with colleagues from Kassel. Other studies in the field of higher education and work have included examinations of 'vocationalism' and 'institutional responsiveness to the labour market', both large scale interview-based studies. Most recently, the Centre has just completed a major study for the UK Employment Department on the role of work-based learning in the higher education curriculum. The Centre has strong international connections and has collaborated in a number of comparative projects.

The Centre is willing to support the project on Higher Education and Graduate Employment in Europe. The Head of the Centre, Mr John Brennan, will devote, complementary to TSER funding, at least 2 months work time to the project. Mr Brennan has directed previous studies of this kind and has published widely on the topic of higher education and work. Secretarial and normal office support services, accommodation and computer facilities will also be provided. In undertaking the study, the Centre will co-operate with the Centre for the Evaluation of Public Policy and Practice, Brunel University.

5.3 The Members of the Research Team

Per Olaf Aamodt (Norway)

Director of Research, Norwegian Institute for Studies in Research and Higher Education (NIFU), Oslo (Norway)

Born 1944, higher degree in sociology (University of Oslo), formerly researcher at Statistics Norway, Oslo

Major areas of research: Recruitment to higher education, student behaviour, evaluation of higher education

Major publications:

Aamodt, P. O., 1990, A New Deal for Norwegian Higher Education. *European Journal of Education*, 25, 2.

Aamodt, P. O., Kyvik, S. and Skoie, H., 1991, Norway: Towards a More Indirect Model of Governance? In Neave, G. and Vught, F. van, eds., *Prometheus Bound: The Changing Relationship Between Government and Higher Education in Western Europe*. Pergamon Press, Oxford.

Aamodt, P. O., 1994, Valg og gjennomstrømning i utdanningssystemet. In Lauglo, J., ed., *Norsk forskning om utdanning* (Norwegian research on education), Ad Notam Gyldendal, Oslo.

Aamodt, P. O., 1995, Floods, Bottlenecks and Backwaters: an Analysis of Expansion in Higher Education in Norway. *Higher Education*, 30.

Aamodt, P. O. and Arnesen, C. Å., 1995, The Relation Between Expansion in Higher Education and the Labour Market in Norway. In *European Journal of Education*, 30, 1, 65-76.

Knudsen, K., Sørensen, A. B. and Aamodt, P. O., 1993, *Endringer i den sosiale rekrutteringen til høyere utdanning etter 1980*. Institute for Studies in Research and Higher Education, Oslo.

Næss, T. and Aamodt, P. O., 1992, *Norwegian Country report. From Higher Education to Employment*. OECD.

Clara A. Arnesen (Norway)

Senior Researcher, Norwegian Institute for Studies in Research and Higher Education (NIFU), Oslo (Norway)

Born 1953, cand. pol. in economics (University of Bergen), formerly research assistant at the University of Bergen, visiting scholar in Stanford and Berkeley.

Major areas of research: Higher education and employment, economics of education

Major publications:

Aamodt, P. O. and Arnesen, C. Å., 1995, The Relation Between Expansion in Higher Education and the Labour Market in Norway. *European Journal of Education*, 30, 1, 65-76.

Arnesen, C. Å., 1991, Lønnsforskjeller mellom sykepleiere og ingeniører 10 år etter avsluttet utdanning. *Søkelyset på arbeidsmarkedet* 1/91, Institutt for samfunnsforskning (Institute for Social Research), Oslo.

Arnesen, C. Å., 1992, Tapte Årsverk. En analyse av arbeidskraftreserven blant sykepleierne". *Report* 1/92, The Institute for Studies in Research and Higher Education, Oslo.

Arnesen, C. Å. and Bækken, J., 1993, Yrkeskarriere og mobilitet blant sosionomer og barnevernpedagoger. *Report* 10/93, The Institute for Studies in Research and Higher Education, Oslo.

Arnesen, C. Å., Bækken, J. and Næss, T., 1995, How Does a Changing Labour Market Affect the Transition from Higher Education to Work? In Brennan, Kogan and Teichler, eds., *Higher Education and Work*. Higher Education Policy Series 23. Jessica Kingsley Publishers, London and Bristol, Pennsylvania.

Hoel, M. and Arnesen, C. Å., 1991, Likelønn og lønnsstruktur i kommunesektoren (Equal Salaries and Salary Structures in the Municipal Sector). *Report* 18/91, The Institute for Studies in Research and Higher Education.

Lex Borghans (The Netherlands)

Senior Researcher, Research Centre for Education and the Labour Market (ROA), Maastricht (The Netherlands)

Born 1964, master's degree in econometrics, Tilburg University (1988); master's degree in philosophy, Tilburg University (1988); doctor's degree in economics, Maastricht University (1993)

Major areas of research: Education, training and the labour market; labour market forecasting; adjustment processes on the labour market

Major publications:

Borghans, L., and Heijke, H., 1996, Forecasting the Educational Structure of Occupations: A Manpower Requirement Approach with Substitution. *Labour*, 10, 1, 151-192.

Borghans, L. Grip, A. de and Heijke, H., 1996, Labor Market Information and the Choice of Vocational Specialization. *Economics of Education Review*, 15, 1, 59-74.

Borghans, L., 1993, *Educational Choice and Labour Market Information*, doctoral thesis. Limburg University, Maastricht.

Borghans, L., 1993, Errors in Rational Expectations Matter. *Economics Letters*, 41, 25-28.

Eijs, P. van and Borghans, L., 1996, The Use of RAS in Manpower Forecasting: a Microeconomic Approach. *Economic Modelling*, Elsevier Science B.V., 257-287.

John Brennan (United Kingdom)

Head, Quality Support Centre, The Open University (United Kingdom)

Born 1947, BSc (University of London), MA education (University of Lancaster), research officer at the University of Lancaster, lecturer in sociology at the Rensselaer Polytechnic, and registrar at the Council for National Academic Awards (CNAA), research fellowships in the United Kingdom and the Netherlands, member of the steering group of HEQC External Examining Project

Major research areas: higher education and employment, quality assessment in higher education, student performance

Major publications:

Brennan, J. and McGeevor, P.A., 1988, *Graduates at Work: Degree Courses and the Labour Market*, Jessica Kingsley, London.

Brennan, J. and McGeevor P.A., 1990, *Ethnic Minorities and the Graduate Labour Market*, Commission for Racial Equality, London.

Brennan, J. et al., 1993, *Students Courses and Jobs: the Relationship between Higher Education and the Labour Market*, Jessica Kingsley, London.

Brennan, J. et al., 1994, The Experiences and Views of Graduates: Messages from recent surveys. *Higher Education Management*, 6, 3, 275-304.

Brennan, J. et al., 1995, Employment and Work of British and German Graduates. In Brennan, J., Kogan, M. und Teichler, U., eds. *Higher Education and Work*. Jessica Kingsley, London, 47-98.

Hans Heijke (The Netherlands)

Professor of Education and the Labour Market and Director, Research Centre for Education and the Labour Market, Maastricht University (The Netherlands)

Born 1943, master's degree in Economics, University of Amsterdam (1970); doctor's degree in Economics, Erasmus University Rotterdam (1979). Head, Division of Labour Market Research, Netherlands Economic Institute; researcher, Netherlands Economic Institute (1969-1974); member, Programming Council for Educational Research (PROO), Foundation for Behavioural Sciences, National Organization for Scientific Research (NWO); member, Advisory Committee on Labour Statistics; member, Advisory Committee on Education Statistics; member, Education Council; independent member, Advisory Committee on Educational Affairs of the Socio-Economic Council; member, Advisory Committee on Minority Research; secretary, European Association of Labour Economists (EALE); member, Executive Committee EALE; consultant, OECD

Major areas of research: Education, training and the labour market; labour market theories and models; international migration

Major publications:

Heijke, H. et al., 1985, A Model of the Dutch Labour Market (AMO-K). *De Economist*, 133, 484-526.

Heijke, H. et al., 1991, Defining Occupational Groupings by Educational Structure. *Environment and Planning, A* 23, 59-85.

Heijke, H. and Grip, A. de, 1991, Past and future shifts in labour supply and demand by education and occupation. In Siegers, J. and Tazelaar, F., eds., *The Dutch labour market in 2000, Demographic changes and policy implications*, 73-97.

Heijke, H. and Grip, A. de, 1995, Mismatches Between Education and the Labour Market. In Jaspers, T., et al., eds., *Working policies?, Facts, Analyses and Policies Concerning Employment and Non-Participation in the Netherlands*, 51-80.

Heijke, H. and Ramaekers, G., 1995, Discrepancies in the labour market for RL-educated economists. In Gijssels, W. et al., eds., *Educational Innovation in Economics and Business Administration, The case of Problem Based Learning*, 37-381.

Heijke, H., et al., 1996, Labour Market Information and the Choice of Vocational Specialization. *Economics of Education Review* 15, 59-74.

Heijke, H. and Borghans, L., 1996, Forecasting the Educational Structure of Occupations. *Labour*, 10, 151-192.

Sandra Jones (United Kingdom)

Senior Research Fellow, Centre for the Evaluation of Public Policy and Practice (CEPPP), Brunel University, Uxbridge (United Kingdom)

Born 1947, BSc in life sciences and in psychology, doctoral dissertation in preparation in psychology, previously research work in industry, research fellows at the University College, Cardiff, at the Centre for the Study of Community and Race Relations and at the Enterprise in Higher Education Initiative, Brunel University

Major research areas: curriculum development, higher education and industry, professional competence, evaluation of professional training

Major publications:

Jones, S., 1995, Managing Curriculum Development: a Case Study of Enterprise in Higher Education", In Brennan, J., Kogan, M., Teicher, U., eds., *Higher Education and Work*, Jessica Kingsley, London, 136-160.

Jones, S. and Joss, R., 1995, Models of Professionalism and Professional Competence, In Yelloly, M., and Henkel, M. eds, 1995, *Learning and Teaching in Social Work: Towards Reflective Practice*. Jessica Kingsley, London.

Paul Kellermann (Austria)

Professor of Sociology, Head of the Institute for Sociology, University of Klagenfurt (Austria)

Born 1937 in Stetting (Germany), diploma of sociology (University of Frankfurt, Dr. oec. publ. (University of Munich), habilitation in sociology (University of Constance). Teaching assignments in Austria, Germany, Switzerland and the U.S.

Major research areas: access to higher education, higher education and the region, university graduates, higher education and politics

More than 100 publications, among others:

Kellermann, P., ed., 1982, *Universität und Umland: Beziehungen zwischen Hochschule und Region*, Kärtner Druck- und Verlagsgesellschaft, Klagenfurt.

Kellermann, P., ed., 1984, *Studienaufnahme und Studienzulassung: Aspekte des Wandels im Zugang zu den Hochschulen*, Kärtner Druck- und Verlagsgesellschaft, Klagenfurt.

Kellermann, P., ed., 1994, *Regionsuniversitäten. Ein transnationaler Polylog zur Bestimmung der Spannung zwischen hochschulischen Funktionen und Standortbedingungen*, Kärtner Druck- und Verlagsgesellschaft, Klagenfurt.

Kellermann, P., 1990, Professions and Expert Labor. *Innovation*, 3, 1, 185 - 194.

Kellermann, P., 1996, Ungleiche Beschäftigungschancen von Graduierten vor dem Hintergrund der Entfaltung professioneller Arbeit. In Bolder, A. et al., eds., *Die Wiederentdeckung der Ungleichheit*. Jahrbuch '96 Bildung und Arbeit, Opladen, S. 83-103.

Kellermann, P. in co-operation with Lassnig, L., 1996, Hochschulabsolvent/inn/en und Beschäftigung '96 (Forschungsbericht). Klagenfurt.

Osmo Kivinen

Professor of Sociology of Education, Director of the Research Unit for the Sociology of Education (RUSE), University of Turku (Finland)

Born 1951, MA (education), MA (sociology), Lic. and Dr. (sociology), docent (sociology, sociology of education)

Major research areas: educational policy and educational systems, field of higher education, interrelations between education and work

More than 200 publications, among others:

Kivinen, O. and Rinne, R., eds., 1992, *Educational Strategies in Finland in the 1990s*. University of Turku, Research Unit for the Sociology of Education (Research reports, 8), Turku.

Kivinen, O. and Rinne, R., 1993a, Educational Qualifications and the Labour Market: A Scandinavian perspective. *Industry and Higher Education*, 7, 2, 111-118.

Kivinen, O. and Rinne, R., 1993b, The Education Market, Qualifications and European Integration. *Higher Education in Europe*, 18, 2, 24-36.

Kivinen, O. and Rinne, R., 1995, The Social Inheritance of Education. Statistics Finland. *Education* 1995/15.

Kivinen, O., Ahola, S. and Kankaanpää, A., 1995, Current and Future Demands for Graduates: Problems of Comparative Analysis. *European Journal of Education*, 30, 2, 189-201.

Goedegebuure, L., Meek, V., Kivinen, O. and Rinne, R., eds., 1996a, *The Mockers and Mocked. Comparative Perspectives on Differentiation, Convergence and Diversity in Higher Education*. Pergamon Press, Oxford.

Kivinen, O. and Rinne, R., 1996b, *The Social Inheritance of Education. Equality of Educational Opportunity among Young People in Finland*. Statistics Finland, Helsinki.

Kivinen, O. and Rinne, R., 1996c, Higher Education, Mobility and Inequality: the Finnish Case. *European Journal of Education*, 31, 3, 289-310.

José-Ginés Mora Ruiz (Spain)

Professor of Economics, Department of Applied Economics, University of Valencia (Spain)

Born 1946, Licenciado in physics, Doctor of Economics

National Prize of Research on Higher Education, member of the National Committee for Quality Assessment of Universities

Major research areas: economics of education, evaluation of higher education.

More than 50 publications in related areas, among others:

Mora, J.G., 1990, La demanda de educacion superior: Un estudio analitico. Consejo de Universidades, Madrid.

Mora, J.G., Palafox, J. and Pérez, F., 1995, *Capital humano: Educacion y empleo*, Bancaja, Valencia.

Mora, J. G, Vila, L. E. 1996, Educacion e ingresos de los trabajadores en Espana: Evolucion en los aflos ochenta. In Grao J., and Ipiñola A., eds., *Economia de la Educacion. Temas de estudio e investigacion*. Gobierno Vasco, Vitoria-Gasteiz, 233-257.

Mora, J. G, 1997, Universidad y trabajo. In de Luxan, J. ed., *Politica Universitaria*. Barcelona, CEDECS, (in press).

Levin, H and Mora, J. G, 1997, Socioeconomic Background, Schooling, Employment, and Monetary Rewards in Spain. *Journal of Human Resources* (in press).

Mora, J. G, 1997, The Demand for Higher Education in Spain. *European Journal of Education* (in press).

Roberto Moscati (Italy)

Professor of Sociology of Education, Faculty of Political Science, University of Trieste (Italy)

Born 1937, master's degree in political science ("Laurea"), Università Cattolica di Milano; master of arts in sociology, Northwestern University, Evanston - Illinois; educational master, Harvard University, Cambridge - Massachusetts; post-doctoral fellowship, Istituto per gli studi di Politica Internazionale, Milano; Harkness fellowship, Commonwealth Fund of New York

Major research areas: the academic profession, the university as an organization, higher education and the region, higher education and employment, evaluation of universities

Major publications:

Moscati, R., 1986, Scuola, mercato del lavoro, professionalità. In Gattulo, M. and Visalberghi, A., eds., *La scuola italiana dal 1945 al 1983*, La Nuova Italia, Firenze, 229-245.

Moscati, R., 1988, Quale occupazione per i laureati? *Università Progretto*, 33-34, 20-26.

Moscati, R., 1993, Moving Towards Institutional Differentiation: The Italian case. In Gellert, C., ed., *Higher Education in Europe*, Jessica Kingsley, London and Philadelphia, 72-83.

Moscati, R. and Pugliese, E., 1995, Higher Education and the Labour Market in Italy: Continuities and Changes. In Brennan, J, Kogan, M. and Teicher, U., eds., *Higher Education and Work*, J. Kingsley, London, 118-135.

Jean-Jacques Paul (France)

Professor of Economics, Institut de Recherche sur l'Economie de l'Education (IREDU), Université de Bourgogne, Dijon (France)

Doctorat d'Etat des Sciences Economiques (Université de Bourgogne), doctorat de Troisième Cycle Economie des Ressources Humaines (Université de Bourgogne), formerly researcher at IREDU, presently director of the Students Observatory at the University of Burgundy and of the Regional Center associated to CEREQ; consulting work in Africa and Latin America for ILO, the World Bank, UNESCO, UNIDO and in Europe for the Liaison Committee of Rectors Conferences, for CEDEFOP and for the European Community

Major research areas: costs and financing of education, efficiency of educational systems, training and employment, labour market for scientist, human resource management

Major publications:

Paul, J.J., 1989, La relation formation emploi: un défi pour l'économie, Economica, Paris.

Paul, J.J., 1992, Le conge individuel de formation dans les trajectoires professionnelles. *Formation Emploi*, 39, 55-76.

Paul, J.J., 1993, Analyser les trajectoires professionnelles: quelques jalons. In Gazier, B., ed, *Emploi; nouvelles donnees*, Economica, Paris, 171-193.

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Paul J. J. and Vermeulen M., 1994, *Generation and Use of Information for Recruitment Policies and Forward Management of Human Resources in the European Union, Synthesis Report*, CEDEFOP, Berlin.

Beltramo J. P., Bourdon J. and Paul J. J., 1995, An Attempt to Forecast the Labour Market for Scientists in France, In Brennan, J, Kogan, M. and Teicher, U., eds., *Higher Education and Work*, J. Kingsley, London, 227-238.

Risto Rinne (Finland)

Professor of Education, Department of Education, University of Turku (Finland)

Born 1952, master in history and education, Dr. Phil, University of Turku, chair of the Board of Research Unit for Sociology of Education

Major research areas: sociology and history of education, higher and adult education, educational policy and comparative education

More than 200 publications, among others:

Kivinen, O. and Rinne, R., eds., 1992, *Educational Strategies in Finland in the 1990s*. University of Turku, Research Unit for the Sociology of Education (Research reports, 8), Turku.

Kivinen, O. and Rinne, R., 1993a, Educational Qualifications and the Labour Market: A Scandinavian perspective. *Industry and Higher Education*, 7, 2, 111-118.

Kivinen, O. and Rinne, R., 1993b, The Education Market, Qualifications and European Integration. *Higher Education in Europe*, 18, 2, 24-36.

Kivinen, O. and Rinne, R., 1995, The Social Inheritance of Education. Statistics Finland. *Education* 1995/15.

Goedegebuure, L., Meek, V., Kivinen, O. and Rinne, R., eds., 1996a, *The Mockers and Mocked. Comparative Perspectives on Differentiation, Convergence and Diversity in Higher Education*. Pergamon Press, Oxford.

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Kivinen, O. and Rinne, R., 1996c, Higher Education, Mobility and Inequality: the Finnish Case. *European Journal of Education*, 31, 3, 289-310.

Michele Rostan (Italy)

Post-doctoral research fellow, Faculty of Political and Social Sciences, University of Pavia (Italy)

Born 1960, Laurea in Economics (University of Pavia), Ph.D. in sociology (University of Pavia), concurrently research associate of IARD (Institute for Youth Research), Milano, five years research fellowships from Italian government and research agencies

Major research areas: youth, sociology of development, training and employment

Major publications:

Buzzi, C. et al., 1988, *I giovani e la condizione lavorativa*, IARD, Milano.

Bresciani, P.G., et al., 1988, *I contratti di formazione e lavoro. Analisi della domanda*, IARD, Milano.

Calanca, A. and Rostan, M., 1993, *Le opinioni e gli atteggiamenti degli studenti della provincia di Como: le zone del Lario Intelvese e delle Alpi Lepontine*, IARD, Milano.

Rostan, M., 1994, Reticoli imprenditoriali e sviluppo locale: il caso di Santa Nimfa, *Rassegna italiana di sociologia*, 4, 519-568.

Harald Schomburg (Germany)

Senior Researcher, Centre for Research on Higher Education and Work, Comprehensive University of Kassel (Germany)

Born 1951, diploma in social sciences (University of Göttingen)

Major research areas: higher education and graduate employment and work, research methodology and statistics

Major publications:

Teichler, U., Schomburg, H. and Winkler, H., 1992, *Studium und Berufsweg von Hochschulabsolventen. Ergebnisse einer Langzeitstudie*, Bundesministerium für Bildung und Wissenschaft (Bildung - Wissenschaft - Aktuell, 18/92), Bonn.

Schomburg, H. and Teichler, U., 1993, Does the Programme Matter? *Higher Education in Europe*, 18, 2, 37-58.

Schomburg, H., 1996, *Standard Instrument for Graduate and Employer Surveys*, Wissenschaftliches Zentrum für Berufs- und Hochschulforschung, Kassel and Deutsche Gesellschaft für Technische Zusammenarbeit, Eschborn.

Schomburg, H. and Teichler, U., 1996, Hochschulabsolventen im Beruf: Ein Sekundäranalytischer britisch-deutscher Vergleich, in Kehm, B. and Teichler, U., eds., *Vergleichende Hochschulforschung: eine Zwischenbilanz*, Wissenschaftliches Zentrum für Berufs- und Hochschulforschung, Kassel, 137-163.

Ulrich Teichler (Germany)

Professor of Higher Education and Work, Centre for Research on Higher Education and Work, Comprehensive University of Kassel (Germany)

Born 1942, diploma in sociology (Free University of Berlin), Dr. phil. (University of Bremen), formerly research associate of the Max Planck Institute for Educational Research (Berlin), formerly part-time professor at Northwestern University (U.S.), currently part-time professor at the College of Europe (Belgien), additional teaching in Germany and Austria, research fellowships in Japan and the Netherlands, member of the Academia Europaea, member of the International Academy of Education, Chairman of the Consortium of Higher Education Researchers (CHER), co-editor of *Higher Education*, *European Journal of Education*, *Asien*, and *Das Hochschulwesen*.

Major research areas: higher education systems, higher education and graduate employment and work, international mobility and cooperation in higher education

More than 500 publications, among others:

Teichler, U., Hartung, D. and Nuthmann, R., 1980, *Higher Education and the Needs of Society*, NFER Publ., Windsor.

Teichler, U., 1988, *Changing Patterns of the Higher Education System*, London: J. Kingsley.

Teichler, U., Buttgereit, M. and Holtkamp, R., 1984, *Hochschulzertifikate in der betrieblichen Einstellungspraxis*, Bock, Bad Honnef.

Teichler, U., 1988, Higher Education and Work in Europe. In Smart, J.C., ed. *Higher Education: Handbook of Theory and Research*, Vol. 4. Agathon, New York, 109-182.

Teichler, U. and Winkler, H., eds., 1990, *Der Berufsstart von Hochschulabsolventen*, Bock, Bad Honnef.

Teichler, U., 1992, Occupational Structures and Higher Education. In Clark, B. R. and Neave, G. R., eds., *The Encyclopedia of Higher Education*, Pergamon, Oxford, 975-992.

Teichler, U. and Buttgereit, M., eds., 1992, *Hochschulabsolventen im Beruf*, Bock, Bad Honnef.

Teichler, U., 1996, Higher Education and New Socio-economic Challenges in Europe. In Burgen, A., ed., *Goals and Purposes of Higher Education in the 21st Century*, Jessica Kingsley, London, 96-111.

Teichler, U., 1997, *Higher Education and Employment in Europe: Select Findings from previous decades*. Wissenschaftliches Zentrum für Berufs- und Hochschulforschung, Kassel (in press).

Rolf van der Velden (The Netherlands)

Chief researcher, Research Centre for Education and the Labour Market, Maastricht University

Born 1955, master's degree in Sociology, University of Groningen (1983), doctor's degree in Sociology, University of Amsterdam (1991); head division Education and Labour Market, Institute for Educational Research RION,

University of Groningen; researcher, Institute for Educational Research RION,
University of Groningen; member ESF Network Transition in Youth

Major areas of research: Transition from school to work, education, labour
market

Major publications

Bosker, R. and Van der Velden, R., 1989, Schooleffects on Educational Perspectives, In Bakker, Dronkers and Meijnen, eds., *Educational Opportunities in the Welfare State. Longitudinal Research in Educational and Occupational Attainment in the Netherlands*

Van der Velden, R., 1991, *Sociale herkomst en schoolsucces. Het effect van culturele en sociale hulpbronnen op de schoolloopbaan* (proefschrift).

Van der Velden, R. and Willems E, 1994, Competition on the Labour Market. An Analysis of the Position of Occupations and Types of Education in the Netherlands, In Heijke H., ed., *Forecasting the Labour Market by Occupation and Education*, Kluwer Academic Publishers, Boston/Dordrecht/London.

Lodder, B. and Van der Velden, R., 1995, Alternative Routes from Vocational Education to the Labour Market. Labour Market Effects of Full-time vs. Dualised Vocational Education, *Educational Research and Evaluation*, 2, 109-128.

Egbert de Weert (The Netherlands)

Research associate, Center for Higher Education Policy Studies (CHEPS),
Twente University, Enschede (Netherlands)

Born 1948, previously employed at the Dutch Council for Higher Vocational Education. Teaching assignment in Canada, editor of the Dutch Journal for Higher Education

Major research areas: comparative higher education policy, access to higher education, academic staff, higher education and employment

Major publications:

De Weert, E., 1990, A Macro-analysis of Quality Assessment in Higher Education. *Higher Education*, 19, 57-72.

De Weert, E., 1992, Continuing Higher Education between Academic Autonomy and Practice. In: Weber K., ed., *Berufliche Arbeitsteilung und wissenschaftliche Weiterbildung*, Arbeitsbericht 4, Universität Bern, Bern, 121-133.

Goedegebuure, L., Kaiser, F., Maassen, P.M., Meek, L., Van Vught, F.A. and De Weert, E., 1993, *Higher Education Policy: An International Comparative Perspective*, Pergamon Press, Oxford

De Weert, E., 1994, Translating Employment Needs into Curriculum Strategies. *Higher Education Management*, 6, 3, 305-320.

Kaiser, F. and De Weert, E., 1994, Access-policies and Mass Higher Education. In: Goedegebuure, L. and Van Vught, F.A., eds., *Comparative Policy Studies in Higher Education*, Lemma, Utrecht, 165-195.

De Weert, E., 1996, Responsiveness of Higher Education to Labour Market Demands: Curriculum Change in the Humanities and the Social Sciences. In

Brennan, J, Kogan, M. and Teicher, U., eds., *Higher Education and Work*, J. Kingsley, London,

6. Financial Information

(not included in this version of the research proposal)

7. Prior Submission of the Research Proposal

The Research Proposal "Higher Education and Graduate Employment in Europe" had been already submitted to the European Commission in the framework of TSER in 1995 (reference number 2011).

(1) The new proposal is presented by the same team of researchers (there were changes in the names of junior researchers) and comprises the same countries as the prior proposal.

(2) The basic concept remained identical. The text was revised thoroughly, notably in underscoring more consistently the specific socio-economic conditions of the 1990s as well, socio-biographic dimensions as well as those of higher education potentially relevant for subsequent career, and the dimensions of transition from higher education to employment to be addressed.

(3) The project team decided to focus the questionnaire survey only on graduates three years after graduation. However, the number of questionnaires to be mailed per country to graduates three years after graduation was increased from 5,000 to 8,000, thus expecting responses from about 4,000 graduates per country, in order to allow for a better basis of the multi-variate analysis. It is hoped that some members of the team succeed in raising additional funds for a survey on graduates 8-10 years after graduation proposed in 1995, but deleted in the new application.

(4) The co-ordinating unit, the Centre for Research on Higher Education and Work of the University of Kassel, agreed to take over all the costs for all staff required to undertake the central tasks of data analysis.

(5) In this way, it was assured that the total sum applied for was reduced from 1,183 kECU to 1,063 kECU in spite of increases of some items due to inflation.

8. Literature

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- Brennan, J. et al., 1994, The Experiences and Views of Graduates: Messages from Recent Surveys. *Higher Education Management*, 6, 3, 275-304.
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- Brennan, J., Kogan, M., Teichler, U., 1995, Higher Education and Work: a Conceptual Framework. In Brennan, J., Kogan, M., Teicher, U., eds., *Higher Education and Work*, Jessica Kingsley, London, 1-24.

- Bresciani, P.G., et al., 1988, *I contratti di formazione e lavoro. Analisi della domanda*, IARD, Milano.
- Burkart, G., ed., 1985, *Maturanten, Studenten, Akademiker: Studien zur Entwicklung von Bildungs- und Berufsverläufen in Österreich*, Kärntner Druck- und Verlagsgesellschaft, Klagenfurt.
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