HIGHER EDUCATION IN THE FEDERAL REPUBLIC OF GERMANY

Developments and Recent Issues

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Contents

Preface

This book is a collection of papers on higher education in the Federal Republic of Germany written in 1981-85. The first two papers are based on research work conducted in the last few years, whereas the other four papers were completed for the occasion of various conferences. I am grateful to H. Becker, B.R. Clark, J.A. Perkins, B.C. Sanyal, V. Selvaratnam and H. Wasser for their invitations to conferences or their encouragement to write the texts published here. I am grateful to my colleagues in Kassel for their critical discussion of my manuscripts. I have revised the papers with the support of the Netherlands Institute for Advanced Study in the Humanities and Social Sciences in Wassenaar which provided a fellowship in 1985/86. Anne Simpson helped me to overcome the typical weaknesses of texts not written in one's native language. The publication is jointly supported by the Center for European Studies, Graduate School and University Center, City University of New York, and the Center for Higher Education and Work, Comprehensive University of Kassel. My hope is that these chapters contribute to the maturing scholarly discipline of comparative higher education of the Federal Republic of Germany with an eye always open to research and policy elsewhere.

The second edition does not differ systematically from the first one. Only minor corrections have been undertaken.

Ulrich Teichler

INTRODUCTION

by

Henry Wasser

Language barriers interfere with information flow on the development of higher education systems and on research conducted in the field of post-secondary education. Since English is the language of discourse throughout the world in most fields, research in non-English speaking countries in social sciences as well as information from non-English speaking societies is poorly represented in comparative and international views and reports.

This is true for information in Germany as well and, in this case, with respect to both higher education operations and research. Admittedly, a comprehensive bibliography could list publications in English on higher education in The Federal Republic of Germany, but the articles are scattered, provide an incomplete overview and are particularly limited with regard to insights of research on higher education.

Filling this described need are the essays in English gathered together in this volume by Ulrich Teichler who is especially qualified for this task. In addition to his professorship and directorship at Kassel, Teichler serves on several European Commissions as well as being senior research associate at the Center for European Studies, Graduate Center, City University of New York. He has cooperated closely with the Center since 1975, having presented papers at eight conferences or panels held either at the Center or in other

locations, sponsored by the Center. Indeed, the first two chapters of this book derive from such presentations. Moreover, C.U.N.Y's European Studies Center has worked closely with Kassel's Center for Higher Education and Work in analyzing structural developments of higher education (see Harry Hermanns, Ulrich Teichler, Henry Wasser, eds.: The Compleat University: Break from Tradition in Germany, Sweden and the U.S.A. Cambridge, Massachusetts 1983).

Teichler has described and interpreted issues of higher education and their societal contexts on numerous occasions of international conferences and in reports to international organizations. In addition to the six papers published here, the appendix lists works previously written by him on higher education in the Federal Republic of Germany.

The publications draw on Teichler's ten years' experience as a research associate at the Max-Planck-Institute for Educational Research in Berlin and eight years as Director of the Center for Research on Higher Education and Work at the Comprehensive University of Kassel. His research focuses primarily on the connections between higher education and the employment system as well as on quantitative and structural changes in Germany's higher education system. The first two chapters of this volume are associated closely with these research interests, whereas some of the latter ones aim to provide an overview of other areas not in the domain of the author's major research areas.

Ulrich Teichler addresses most of the themes he analyzes from a comparative point of view. He has done significant work on higher education and society in Japan and has extensive knowledge of higher education and work in the U.S.A. as well as in many countries in Western and Eastern Europe. Thus, he explains higher education in his own country to foreign readers from a comparative and a cross-national point of view. For example, he shows that the emphasis on the homogeneity of German universities caused much stronger concern for the impact of expansion on higher education than took place in hierarchically structured systems of higher education.

In most of his publications, Ulrich Teichler discusses implicitly and explicitly concepts on the functions of higher education prevalent in pragmatic research on higher education as well as in general and implementational research on higher education policy. He claims that many scholars in these areas follow too easily in their notions the conventional wisdom prevailing at

universities that high quality teaching and learning should be protected from the masses by means of hierarchically diversified or segmented structures of higher education and that higher education should reflect the utilization of graduates in the existing occupational hierarchies.

To avoid the snare of merely reproducing in research the conventional wisdom of the system, Teichler suggests developing alternative hypotheses on the functions of the higher education system and analyzing them within the framework of competing hypotheses. He proposes examining higher education also from alternative assumptions regarding its potential to cope with heterogeneous student bodies, to counterbalance early selection and to shape actively the occupational system by not delivering graduates in accord with existing divisions of labor and occupational hierarchies.

Research based on explicit examination of the plausibility of competing assumptions might lead - this is the underlying hope - to more valid understanding of the functions of higher education systems than could be expected in the past when higher education as a field of study was young and strongly embedded in practical decision-making.

Teichler's chapters are full of insights one associates with the careful scholar who notes the complexities and gradations of opposing interpretations. In accounting for policies with respect to institutional patterns in the Federal Republic of Germany and their outcomes, he describes the competing concepts of the diversified model and the integrated in a single country. Remarking the aspects of the diversified model which distinguishes it from a clearly stratified model, Teichler points out that Western industrialized countries believed that although the expansion of higher education might exceed the presumed manpower demand, it should be channeled through restructuring the higher education system.

Traditionalist concepts of higher education lend more support to the preservation of a small elitist system or to integrated approaches than to a pronounced institutional hierarchy. First impressions may result in the conclusion that Germany was successful in diversification and a failure in efforts toward a comprehensive pattern. But Teichler's detailed argument concludes that the Federal Republic has not stablilized the elements of diversity. In reality its higher education system is a mixture of elitist, comprehensive, diversified, and stratified approaches with no signs of reaching

a consistent model of any kind.

There are numerous other perceptions in Teichler's essays. He notes the "parking lot" aspect of entrance into a Numerus clausus discipline i.e. most who fail of entrance wait and continue, rather than give up their application. Unemployment of skilled labor grew more rapdily than graduate employment, thus negating an outlet for those not employed in the discipline for which they were educated.

Universities are diffident, even hostile to further education. As he can do in most issues, Teichler supplies many relevant reasons for this conclusion. He is, in addition, particularly detailed in argument regarding the complex relations between Federal and State government in the Federal Republic of Germany.

The deteriorating academic labor market and growing traditionalism in German higher education has led to renewed emphasis on "Habilitation" and to increasing concentration by the academic profession on self and promotion rather than on university. The balance between autonomy of universities and devices for interaction between higher education and society varies from society to society and reflects historical circumstances, accounting, for example, for the much greater pressure for rapid change in research in the U.S. than in the Federal Republic.

Balance, Teichler concludes, between research in response to external demand and research in isolation, between higher education on the Acropolis and higher education in the Agora must be sought. Probably Teichler's most noteworthy effort in these chapters is to seek constantly for the new center point of balance and to muster an impressive array of arguments supporting his decision as to where it is.

I.

CHANGING THE PATTERN OF HIGHER EDUCATION SYSTEMS: AN ACCOUNT OF ACCESS AND STRUCTURAL POLICIES IN THE FEDERAL REPUBLIC OF GERMANY IN COMPARATIVE PERSPECTIVE

1. Introduction

After World War II higher education experienced an almost continuous increase of persons wishing to enrol at institutions of higher education. Generally speaking, the dominant view in most Western industrialized countries was that "social demand" for higher education was not in harmony with the level of demands for highly qualified manpower, but rather that it would lead to a substantial oversupply of university graduates on the labour market. In response to this thinking the higher education policies of most Western industrial societies neither followed the "social demand" for higher education (i.e. expansion to match the number of applicants), nor the "manpower demand", (i.e. restriction of admissions according to manpower requirements). Rather, greater efforts were made to change the institutional pattern of the expanding higher education system.

In this paper I shall first discuss the background of this policy. I will then go on to explain the different structural models prevalent in the international debate on changing institutional patterns, as well as related policies, in regard to access to higher education. I will also give an account of policies on institutional patterns in the Federal Republic of Germany, and on their outcomes, to show the competing concepts of the diversified model, and the integrated model in a single country. Finally, the problems of the different structural models will be discussed in comparative perspective.

2. Expansion of Higher Education as a Challenge to Structural Policies

Higher education in industrial societies expanded after World War II at an unexpected pace. An average increase of one percent of freshmen among the corresponding age group was common in many countries for a long period during the sixties and early seventies.[1]

There are many factors which can lead to an almost continuous increase of applicants at institutions of higher education: The growing wealth of societies, a re-structuring of secondary education which opened further routes to higher education, the assumption that the expansion of higher education stimulates economic growth, a spread of egalitarian values, the growing trends towards justification of social inequality as a product of mobility, of a just and open race for success.

It does not, of course, follow that growing pressures for the expansion of higher education necessarily lead to changing its institutional pattern. One could have expected that a policy of open access for all those with the necessary qualifications for higher education would have resulted in a general expansion of the existing pattern of the higher education system. On the other hand, without addressing the institutional pattern per se one might also have expected an admissions policy to match the presumed manpower requirements, so establishing restricted admissions in some fields of study or at some institutions, and open admissions in other areas.[2]

An access policy of matching the number of students to the presumed manpower requirements has been frequently attributed to East European countries. Some of those countries have indeed established planning devices to enable them to gear the number of students as closely as possible to the expected job vacancies for graduates. Rumania is possibly the most extreme case in question of all industrial societies: The Rumanian Ministry of Education requests all government ministries to present the exact figures of the number of graduates they expect to employ 4½ years hence in the coprresponding occupational areas. These ministries will, in the final event, be responsible for offering positions corresponding to the number of graduates they had "ordered".[3]

Careful observation discloses, however, that the access policy of these countries is not strictly geared to presumed manpower requirements.[4] In Rumania, for example, the very detailed categories of fields of studies and

very narrow classification of jobs had to be discontinued in planning schemes around 1980 to allow more flexibility and adjustment. In Poland there have been substantial changes in the perception of manpower requirements: The more educational aspirations grew, the more graduates were considered necessary to fill the employment system. Thus, both friction and adjustment processes on the labour market for graduates were not less dramatic, although they were more precluded, than in Western industrialized countries.[5]

There are four major reasons for not gearing access to higher education as closely as possible to the presumed manpower demand:

a. There has been a period in which a general lack of highly qualified manpower was presumed. Influenced by optimistic economic forecasts, and by the human capital approach in economics of education, there was a tendency to believe that the shortage of qualified labour in general precluded the advent of any detailed measures regarding access to higher education, apart from a general "opening up" in most sectors of the higher education system. However, this view was very short lived and, in most cases, did not really apply to all sectors of higher education.

b. Efforts to assess the manpower requirements and shape the quantitative development of higher education correspondingly proved to be far more difficult than anticipated and led to no clear-cut results in terms of the "needs" of the employment systems. This was due to uncertainties about the future development of, and to the time lag in, education planning. Problems also arose from assessments of past and present demand whatever course they followed (i.e., the analysis of education and job structure of manpower requirements analyses, the cost benefit approach, or the employers' or graduates' surveys on the utilization of skills). Whichever course was followed there was a tendency to overlook the typical misconceptions and biased views as regards the skills required. There were, of course, numerous other problems to be faced, for instance, the difficulties of identifying the impact of certain curricular elements on the job performance, the impact of status dimensions on the perception of the utilization of skills, the adjustment towards "under-qualification" or "over-qualification", and the impact of political intentions for counter-balancing the "academic drift" on statements about manpower requirements.[6]

It should be noted that insight of the difficulties to realize a policy of

gearing higher education to manpower requirements applied not only to "planning" approaches of the relationship between education and employment systems. It applied also to "market" approaches. Both these approaches differ in assessing requirements and in their choice of measures to shape higher education according to manpower requirements, although a "market" approach does not automatically preclude such efforts. Where "planning" approaches which prevail in the Federal Republic of Germany are concerned, it is necessary to identify manpower requirements or "mismatches" between education and work. Such identification is made on the basis of the relationship between fields of study and categories of jobs, or on the basis of assessing the skills supplied compared with the actual skills needed on the job. After defining the capacities required of the higher education system, measures could be taken to adjust education and the labour market by either restricting admission or allotting money for increasing the capacity in certain fields of study or corresponding institutions. On the other hand, "market" approaches, as prevailing in the United States, tend to accept the rate of return of similar measures as being indicators of the demand. Another typical example of the kinds of indirect manpower policy in the United States are the adjustment measures of indirect intervention. An example of these are the regulations shaping the influence of professional associations on higher education, establishing or reducing student aid schemes, aid to graduate and professional school students, subsidies to institutions of higher education.

c. Inequality of opportunity is a barrier to mobility, but the efforts to reduce inequality and foster all talents might turn out to be in conflict with the aim of gearing education to manpower requirements. However, whatever the reasons for reducing such inequality, whether they were based on egalitarian views, or only a desire to pacify the disadvantaged and thereby keeping inequity, they favoured an expansion of higher education beyond the presumed manpower requirements.

d. Imperfections in steering the educational system make it preferable to expand beyond presumed demand. This applies firstly to forecasting demand: If uncertainty remains about the demand for highly qualified manpower it is safer to risk the strategy of over-qualification than under-qualification.[7] Secondly, if there are increasing doubts about the fairness and predictive validity of selection within education, such doubts can be circumvented by

opening up those areas which were previously selective. Thirdly, the expansion of higher education will reduce strong resistance by the privileged to any measures taken to allow entry of the underprivileged into attractive routes of education.[8] Fourth, the increased competition in secondary education as a consequence of restricted admissions has frequently been considered intolerable.

A policy to open up higher education to an increasing number of applicants without changing the structure has been an exception among nations. Generally speaking, Italy and Austria are considered to be the only examples of this kind.[9] Some experts have argued that the decline of standards and high unemployment levels of undergraduates in Italy can be attributed to policies of expansion without structural changes. Unfortunately, it is beyond the reach this essay to engage in this discussion. Suffice it to say that the international debate on higher education has not considered the policies of Italy worth following. Also, the Austrian example has hardly been discussed in international comparisons.[10]

Four major arguments were brought forward against expansion without structural changes:

a. It was argued that the enrolment of students whose qualifications would not previously have permitted them to enter the existing institutions of higher education would place too much of a burden on them, so denying them the opportunity to properly cultivate their talents.[11]

b. Many representatives of the higher education system feared that expansion without structural changes would lead to a reduction in the quality of higher education. It was feared that many of the additional students would be unable to follow the programs. If this were so, then the universities would face considerable pressure if they persisted in maintaining their normal standards, especially in the face of a possible dramatic increase in the number of drop-outs. Thus, a reduction in the level of quality might be the unavoidable consequence of increased numbers into the existing structure.

c. Governments were not prepared to increase expenditure on higher education to the levels required by the rising "social demand". Understandably, governments sought cheaper solutions in the face of the dramatic rise of student numbers, and because of the widespread doubts of the

justification (in terms of manpower requirements and students' abilities) of this expansion. This reluctance of governments also affected the structural development of higher education in those countries where private institutions play a significant role: In Japan, which has the largest proportion of private higher education among industrialized countries, the government accepted the expansion of higher education primarily at the bottom of the status hierarchy.[12]

d. It was generally assumed that the "mismatch" between the number of graduates and available jobs could be kept within bounds if the existing institutions of higher education did not expand proportionally, and that expansion should be concentrated primarily on the less prestigious but more vocational institutions. There was a virtual consensus in all Western industrialized countries that although the expansion of higher eduction might exceed the presumed manpower demand, it should be channeled through a restructuring of the higher educational system.

3. Ways of Restructuring Higher Education in Western Industrial Societies

In most of the Western industrialized countries the growing number of students was absorbed by primarily extending the less prestigious sectors of higher education. Three major directions of this policy could be observed.

a. The differences between fields of study became more pronounced. On the one hand, restricted admissions became more prevalent in those fields of study having very high unit costs. In most countries the study of medicine was affected;[13] and the professional lobbies supported such restrictions in order to secure a higher status for the profession. On the other hand, some fields of study experienced almost unlimited growth.[14]

b. In many cases the growth focused on the lower end of the status hierarchy of institutions of higher education. For example, some countries established institutions in remote areas in order to reduce regional inequalities, but unfortunately did not allow them sufficient financing to compete succesfully with already existing institutions. Additionally, many of the less prestigious institutions tended to increase enrolment to a greater extent than prestigious institions.

c. One very popular policy for channeling the increasing number of students was to enlarge (or to establish new) the non-university level sector of higher

education. In some cases, for example the IUT in France and the koto senmon gakko in Japan, new institutions were established. There were other cases, however (the Fachhochschulen in the Federal Republic of Germany) where former vocational schools were upgraded to institutions of higher education. There were yet other cases, (the polytechnics in England) where the existing institutions were expanded. With the exception of England, these institutons offered short-cycle courses - shorter than the ordinary university courses.[15]

The structural policies in all countries focussed upon institutional changes, such as establishing new institutions or extending public institutions as already mentioned, or in changing/handling regulations regarding the establishment or extension of private institutions. In many countries the regulations for access and admissions were changed primarily to extend the less prestiguous sectors of higher education. For example, Sweden introduced the 25/5-scheme in the late sixties allowing adults without full secondary school credentials to enter some faculties. In the Federal Republic of Germany, various types of academic secondary education were introduced as well as Fachhochschulreife, which gave the opportunity of admission (without Abitur) to non-university level institutions of higher education. Only a very few countries changed student-aid schemes in order to reinforce their institutional policies. For example, special scholarships were introduced for students in Japanese vocational colleges (koto senmon gakko) established in 1962.[16]

In some countries the development towards an increasing diversity of the higher education system was not the result of an outgrowth of "strategic" political decisions, but rather the consequence of various trends, as well as institutional or general political decisions. Strategic debates and crucial decisions were taken in many countries. But as a rule, controversies arose in all countries on the merits and demerits of the growing stratification of the higher education system.

Inevitably, the debates in all countries were somewhat influenced by international comparisons and international organisations, in particular the OECD. Such comparisons led to some categorization of institutional patterns of higher education. In some cases, such "models" were named according to the number of the various types of institution, such as unitary or binary models. The major debate, however, did not so much focus on the number of

institutional types as on the question of whether it was preferable to retain control of the differences of goals and standards, or to establish a variety of approaches and a sharp institutional hierarchy. It might be appropriate to use such terms as "integrated" or "comprehensive" higher education on the one hand, and of "diversified" higher education on the other hand.[17]

It is pertinent to mention here that considerable attention was given to proposals for a more drastic recasting of the institutional pattern of higher education. A Swedish proposal to establish a system of "recurrent education" became the most popular of this kind. It was promoted by the OECD for a long period.[18] The model of "recurrent education" allowed students initially to receive only some basic higher education prior to taking up their occupations. Additional education could then be acquired later according to occupational needs or the individual desire for promotion. The aim of this model was to relax the strong competition in the most attractive sectors of higher education so as to avoid the typical consequences of presumed over-qualification. The lack of strong competition should reduce the impact which higher education has always had on career chances, and allow promotion to depend on job performance, or on any further educational qualifications gained during the working career. This model has not yet been realized in any country although the debate on "recurrent education" might have encouraged the measures taken to offer special programs for adults, or to ease access of adults to higher education.

In many countries the diversified model has been a more or less "natural" outgrowth of the policy introduced to cope with the rising student numbers. In particular, this model extends the low prestige sectors, cheap sectors and short-cycle education. The general mood favouring this model became strikingly visible at the OECD conference in 1973 on "Future Structures of Post-Secondary Education".[19] By then, earlier assumptions that the expansion of higher education would stimulate economic growth had already been substituted by fears of "over-education". It was a time when hopes of reducing inequality of educational opportunity and social inequality through education had turned to absolute pessimism. To some extent the diversified model reflected the educators' continuing faith in the importance of education because there was no suggestion of returning to much smaller student numbers or to the restrictive concepts of matching manpower requirements. However,

at the same time, the diversified model suggested that less ambitious educational provisions for the masses would be in harmony with their potential, and more suitable for the employment system.[20] However, we should mention here some of the important aspects of the diversified model which distinguish it from a clearly stratified model. First, diversity was supposed to be realized both on a vertical and a horizontal dimension: As well as ranking, there should be distinct educational goals in qualitative terms between institutions of higher education. Second, many proponents of the diversified model favoured a certain degree of "permeability" of the higher education system, for example, regulations enabling the transfer from short-cycle institutions to universities.

The comprehensive or integrated model had been enormously popular during the later sixties. But it had by then become clear that equality of educational opportunity would not be easily realized, and nor would educational expansion necessarily be in harmony with manpower requirements. Nevertheless, optimism prevailed. There was a general belief in the importance of improved educational and social conditions and the impact this would have on the development of talents as well as on the economic desirability of educational expansion. The comprehensive system suggested that an intake of a heterogenous study body to an intra-institutionally differentiated and permeable system, would provide the best stimulation and opportunity for the previously disadvantaged without reducing the opportunities for, and the standards of the traditional input to higher education. At the same time this would stimulate new qualities of teaching and learning, as well as of research, through a creative interaction of previously separated elements of higher education.

The contrast between the diversified model and the integrated model might be described on the basis of five aspects:

a. Promotion of talents and equality of opportunity: The diversified model claims to meet the existing diversity of talents; if properly allocated, persons would be able to develop their abilities in the best way possible, and regulations regarding transfer might balance any mis-allocations; it considers a homogeneity of students to be a superior learning environment. Conversely, an integrated model might place too much pressure on the less talented,

increase the level of drop outs, and neglect encouragement of the abilities of the most able students. The integrated model claims that it offers a basis for students to appreciate the various possibilities and to find the most suitable solutions; it considers a heterogeneity of students stimulating. In contrast, a diversified system would be a "cooling out"-device, or tracking system device which only pretends to offer opportunities.[21]

b. Attraction of students and effects on competition: On the one hand, it was argued that only institutions which are strictly separated from universities are likely to develop distinct programs to serve the needs of, and employment opportunities for less able students. On the other hand, it was claimed that an integrated setting avoids fierce competition for admission to university because the selection will take place within the institutions of higher education. In a diversified system many students shun non-university higher education because of its tracking effects.

c. Educational outcomes: The intention of the diversified model is to promote a variety of skills both through varied cognitive levels, and through the kinds of goals of the programs. In this way it claims to serve both the variety of students' talents and the manpower requirements. As opposed to this, the integrated model prefers to move the educational aims of the non-university sector closer to the university sector and, in some cases, considers a synthesis of the aims of the previously separated institutions to be desirable.

d. Impact on research: According to the diversified model, research is more likely to flourish if resources are concentrated in elite institutions. According to the integrated model, it would be desirable to involve the teaching staff of the non-university sector, at least to some degree, in research.

e. Utilization of resources: Both models claim various advantages in terms of the utilization of resources. For example, proponents of the diversified system think that this setting saves useless expenditures for the unsuccessful efforts of students to reach educational goals beyond their capabilities. On the other hand, proponents of the integrated model stress avoidance of additional costs for the detours which students have to make while moving from one level to another.

The international debate on the structural development of higher education has had less impact than anticipated in terms of promoting a convergence of institutional patterns of higher education in various countries.

It appears that national traditions have proved to be more enduring than the planning mood of the last decades had suggested.[22]

Furthermore, there is little sign of there being any education system anywhere which nearly matches the ideal types of the models discussed so far. Some experts conceive the Californian three-tier-system to be a good example of a diversified system, while others prefer the example of the historically grown mix of institutions in Massachusetts. Both these systems, however, lack some elements of the diversified model. A few comprehensive universities have been founded in the Federal Republic of Germany which are close to the model of comprehensive higher education, but even these cannot test the potentials of comprehesive systems sufficiently because of their exlstence alongside universities and non-university-level institutions of higher education.[23]

One might argue, therefore, that any comparison of the diversified model and the comprehensive model is an anachronistic topic, for the latter model has not proved successful. I believe, however, that the range of decisions combined in these models - inter-institutional vs. intra-institutional diversity of programs, homogenous vs. heterogenous student body, maintaining distinct educational goals in higher education, or closing the gap between the different institutional philosophies, etc. - has retained its vital importance. Also, the preference for binary[24] and of hierarchical or stratified syems[25] to the real diversified system of some countries has to be considered when comparing such models. Higher education systems have not been shaped according to the diversified or comprehensive model, although most decisions on the structure of higher education have been influenced by considerations of the strengths and weaknesses of the principles of diversification, or integration of higher education.

4. The System of Higher Education in the Federal Republic of Germany

4.1 Characteristics of Higher Education

Needless to say the various national discussions about the structural policy of higher education were not confined to pondering the merits and demerits of models which were being discussed at the international level. The traditions of the higher education systems within those individual countries inevitably exerted a heavy influence. Let me give as an example, five characteristics of German higher education which have had considerable

impact on the structural policy:[26]

- Higher education in Germany puts great emphasis on specialization and the promotion of specific skills.
- In spite of the rhetoric about research-orientation, universities stress preparation for a career. Other potential educational goals of cultivating the personality and fostering non-cognitive socialization have not been highly regarded.[27]
- The academic and research orientation plays a significant role insofar as all students should be involved in a research-oriented learning process.
- The universities were considered to be more or less equal in standard, and higher educational policy aimed at retaining a homogeneity of institutions.
- Almost all institutions are public, and higher education is almost exclusively financed by public sources.

It is understandable firstly, that the expansion of higher education was not likely to be as easily implemented in the Federal Republic of Germany as in some other countries where expansion led to an extension of the bottom of the system, and a gradual process of adjustment to the changing job prospects of graduates. Rather, the whole West German system of higher education had been substantially shaken. Secondly, the search for an overall strategy to cope with the changing conditions was more likely to occur in Germany than a pragmatic and gradual adjustment to the changing conditions. Finally, the traditional concepts of higher education lent more support to the preservation of a small elitist system, or to integrated approaches, than to a pronounced institutional hierarchy.

4.2 Enrolment Trends

After World War II the number of students at West German institutions of higher education almost doubled each decade. As indicated in Table 1 we have included those institutions which were officially institutions of higher education in 1980: It should be remembered that Fachhochschulen were officially founded in 1971: The table includes estimates of student figures for the earlier institutions (engineering schools and higher vocational training schools). The percentage of freshmen among the corresponding age group rose during this period from 8.7 to 19.5 per cent. It should be noted that the figures of students' intake did not increase as much as the total number of students;

Table 1 Students at German Institutions of Higher Education by Type of Institution[+], 1950-1982

Type of institution	1950	1960	1970	1975	1980	1982
Universities (including technical & special universities)	112, 000	217, 000	350, 000	553, 000	735, 000	832, 000
Comprehensive universities	-	-	-	42, 000	70, 000	78, 000
Teacher colleges	ca 10, 000	33, 000	59, 000	79, 000	19, 000	19, 000
Theological seminaries	5, 000	3, 000	2, 000	2, 000	2, 000	3, 000
Art academies	5, 000	8, 000	11, 000	15, 000	18, 000	20, 000
Fachhochschulen (short-cycle institutions)	ca 40, 000	ca 68, 000	ca 112, 000	146, 000	202, 000	241, 000
Total	ca 172, 000	ca 329, 000	ca 534, 000	837,000	1, 044, 000	1,203, 000

Source: H. PEISERT and G. FRAMHEIN: Systems of Higher Education: Federal Republic of Germany. New York: International Council for Educational Development 1978 p. 14; data on 1980 from Bundesminister fuer Bildung und Wissenschaft: Grund-und Strukturdaten 1982/83. Bonn 1982; data on 1982 from Statistisches Bundesamt.

[+] German and foreign students; the figures are those of winter semesters.

[++] Including newly established Fachhochschulen of Public Administration.

this was due to a gradual increase in the average length of study at institutions of higher education.

According to forecasts compiled by the Permanent Conference of the Ministers of Education of the States of the Federal Republic of Germany in 1982, the total number of students is likely to rise from 1,350,000 to 1,400,000 in 1988 and 1989, and to decline thereafter.[28] This prediction, however, is based on the assumption that the percentage of qualified secondary school leavers transferring to institutions of higher education, as well as the average length of study, will decline slightly. If we expect a continuation of the status quo, figures of 1,500,000 to 1,550,000 seem to be likely.[29] According to recent estimates of the increasing numbers of students on the academic track of secondary education, an increase of student numbers of up to 1.7 million cannot be excluded.

The increase of student numbers in the seventies should be attributed primarily to demographic factors - the increase of live births until 1964 - and to the increased average period of study. According to the Federal Ministry of Education and Science, students graduating from universities in 1974 had spent 11.2 semesters at institutions of higher education; this time span rose to 11.8 semesters in 1979.[30] In contrast to those factors, the freshmen quota of the corresponding age group remained constant at about 19 per cent from 1972 to 1980.

During the eighties, the demographic "bulge" will contribute to an increased number of students until 1988/89 because the mean age of students is about 24 to 25. In addition, it is interesting to note that in recent years of declining job prospects a growing percentage of youth choose the academic and intermediate track of secondary education. This prompted the prediction of the Permanent Conference of the Ministers of Education in 1982 of an increase of the freshman quota of the corresponding age group from 19 per cent in 1980, to 24-25 per cent in 1985, and 27-28 per cent in 1990.[31]

4.3 The Emergence of Numerus Clausus

According to the German tradition, any qualifled secondary school leaver - that is, the persons passing the Abitur after four years in primary school and 9 years at a Gymnasium - was entitled to enrol at any university in any chosen field of study. The pattern of transfer from secondary to higher education

was more or less upheld until the mid-sixties. From the mid-sixties until half way through the seventies, the medical fields of study and subsequently many other fields of study, introduced a Numerus clausus - restricted admission and procedures of selection.

Numerus clausus became a very controversial issue because of its dramatic effect of the education system: The competition in secondary schools grew to a degree considered by most education experts to be detrimental to both the educational process and to the development of personality. There were significant changes in the earlier preference patterns for fields of study. Whereas up to the sixties successful secondary school students used to choose quite a variety of fields of study, more and more students achieving high grade-points turned to Numerus clausus fields. Mobility from one university to another became more complicated, and there were controversial debates on the issue of manpower planning through access policy.[32]

In 1972, the Federal Constitutional Court principally upheld the right of the Abiturient to enroll in any field of study of his or her choice. This was considered to be an integral part of the constitutional right to free choice of an occupation. The court, however, allowed restricted admissions if the capacity of a university was exhausted, and if, in addition, increased government expenditure on the higher education sector would have resulted in an intolerable decrease of government money to other sectors, or if the increased enrolment into higher education was obviously contradictory to manpower requirements. Subsequently, the Central Admissions Agency was established in Dortmund to administer admissions for all Numerus clausus fields. Although the Court gave priority to the right to access, many experts predicted a spread of Numerus clausus to all major fields of study within a few years.

Although the major political parties took different positions regarding the need and desirability of substantial increases in student numbers, there was an impressive increase of public expenditure on higher education during the late sixties and early seventies. However, during the early seventies both governments and planning agencies reached the conclusion that it simply was not feasible to follow "social demand" by financing increased university capacity in all fields of study. The need to keep the expansion of higher education within bounds was reinforced by deliberations of the Science Council in 1975 regarding demographic development: As a reduction of student

numbers was predicted in the late eighties due to demographic development, the targets for expansion of facilities, especially constrcution targets, were lowered in 1975.

However, we must consider that Numerus clausus does not necessarily reduce the total enrolment at institutions of higher education. Some applicants who are not admitted choose other subjects as a temporary measure during their waiting time. Others gave up hope and turned to other fields of study, although few of those striving for Numerus clausus fields gave up studying altogether. It affected only the pattern of fields of study. Only if a total Numerus clausus had been developed for all major fields would it have to be considered as a mechanism for controlling overall enrolment.

4.4. The Policy of "Opening Up Higher Education"

During the early seventies there was a decline in the public mood favouring the expansion of education; also governments were not ready to increase expenditures for higher education in correspondence to the growing number of students; finally, there was more concern about the job prospects of graduates because of growing economic difficulties, and the first cobweb effects of the preceeding expansion of highly qualified manpower. Under these conditions it would therefore not have been surprising if there had been strong support for public measures to increase Numerus clausus and introduce policies to restrict admissions. But this did not happen. On the contrary, in 1976/77 higher education in the Federal Republic of Germany took a surprising turn towards what was called "Opening of Higher Education" (Oeffnung der Hochschulen).[33]

This political compromise by all major parties, governments, and major interest groups, was based on two major considerations. First, as already mentioned, those concerned about over-competition due to Numerus clausus supported the view that action had to be taken to avoid a general deterioration of the educational system. Second, there was wide support for the argument that an "opening of higher education" was needed to avoid intolerable educational disadvantages for those age groups belonging to the demographic "bulge". This was important because if the intake into higher education did not grow to match the number of applicants, then a growing number of academic secondary school graduates would turn to apprenticeship training and thereby

"displace" other secondary school leavers from vocational training.[34]

The turn towards a policy of "opening higher education" was surprising also in view of the meager actions taken for the success of such a policy. It was not a program of extending resources, but rather one of persuading universities to accept more students on their existing resources. Universities were urged to accept an additional "load" of about 30 per cent for a limited time span of about a decade. In addition, the governments of the states (Laender) in the Federal Republic of Germany agreed to reduce the number of "hard" Numerus clausus fields of study by transferring them to a scheme of "regional distribution". This was no more than a demontsrative act to play down the Numerus clausus phenomenon by indicating that some Numerus clausus fields of study were less competitive than others, and that admission in these fields could be handled by a softer selection mechanism.

Taking the measures and their expected outcomes as a yardstick, we can assert that the policy of "opening of higher education" was very successful. This can be seen, first, by a comparison of the growth of student numbers with increases in staff and buildings: the growth of "load" at institutions of higher education was about 25 per cent from 1977 to 1982. For, whereas staff and facilities increased by less than 5 per cent, the number of students grew by about 30 per cent. Second, the moderate modifications of the admissions scheme did indeed reduce the tendency towards Numerus clausus fields: Whereas the total number of qualified secondary school leavers increased by 29 per cent from 1977 to 1982, the number of applicants of 9 major Numerus clausus fields grew by only 15 per cent.[35]

The policy of "opening higher education " again became a controversial topic during the early elghties. The recent debate was strongly affected by expectations of further substantial increases in the number of students until the late 1980s.

4.5 Recent Debates on Quantitative Developments

The recent debate on whether or not the policy of "opening higher education" should be continued in the eighties has certainly been influenced by the fact that the Christian Democrats - usually more sceptical than Social Democrats about educational expansion - acceded the federal government. There are, however, issues and concerns which are not really connected to any

of the major political parties. For instance, the concern about a deterioration of the quality of higher education due to an intolerable "over-load", is more widespread than political support for the Christian Democrats. And likewise, many more people are against reviving a strong Numerus clausus (and its consequences) than would support the Social Democrats!

Most representatives of the higher education system are concerned about the risk of a serious decline in quality if funds for higher education are not substantially increased in the process of rising student numbers. Many of them are especially concerned that the higher education system of the Federal Republic of Germany would no longer be able to foster the intellectual and scientific elite needed to survive in international competition.

There have been many recent proposals on how to avoid further substantial increases in the number of students without introducing additional restrictions to admissions. A frequent suggestion is to restrict the duration of study by expelling those students who continue their studies far beyond the required period. This proposal enjoys substantial emotional support because - as frequently claimed - universities should not become waiting rooms. But emotions are unlikely to shape policies when given the facts. Generally speaking, it is only a nominal number of students who do prolong their studies well above the norm. Furthermore, the high unemployment quota does not invite a policy of expelling students who are actually less of a national financial burden than unemployed persons.

There are also proposals to increase the number of qualified secondary school leavers who prefer apprenticeships to university training. A decline in the number of school leavers going into apprenticeship is anticipated from 1984-1985. Some experts believe this will off-set the load of institutes of higher education. This is unlikely, however, because the absolute number of students is expected to rise nevertheless because of the demographic "bulge", and it is yet to be seen how qualified secondary school leavers are to be persuaded to follow this direction without enforcement by Numerus clausus.

All in all, success in restricting quantitative expansion rests on structural concepts, and thus continue the efforts towards this end which began almost two decades ago.

5. Structures of Higher Education and Structural Policy

5.1 Models Discussed

Higher education policy in the Federal Republic of Germany in the post-war period had opted for a unitary system: thus, during this period until the mid-sixties the emphasis was placed on blurring the existing instutional differences. The name "university" which had previously been given only to institutions offering the full range of subjects could now be used by specialized institutions. Engineering and teacher training colleges which had not belonged to the universities were gradually incoporated in to them, or declared equivalent.[36]

Since about the mid-sixties, educational planners and scholars have been discussing the need to restructure the higher education systems - in terms of institutions as well as course patterns - in the face of an increased student population. This longstanding debate has obviously been influenced by discussions at the international level. It is interesting to note, however, that the debate in the Federal Republic of Germany has been shaped considerably by certain characteristics of the German higher education system. This is visible in the fact that many other proposals became popular in addition to a diversity of formally equal institutions, among them models to keep institutional hierarchies within bounds.

Major proposals discussed and, to some extent, implemented were:

a. the establishment of a variety of types of institutions,
b. the establishment of a comprehensive model of higher education,
c. the introduction of short-cycle courses at universities alongside long courses,
d. the diversification or hierarchization of universities,
e. the establishment of a sequential system of courses.

We will now give a brief explanation of these models and discuss the impact they have made.

5.2 Variety of Types of Institutions

In the late sixties there was a general breakthrough of an educational policy favouring expansion. At the same time, however, there was virtual consensus that a unitary system of courses could not be financed and would

disregard the fact that a broader range of occupations had to be served by such an expanded system. The first step taken towards a diversified system was a treaty between the German states in 1968 to upgrade what were formerly engineering schools, and higher vocational schools, to Fachhochschulen (vocational colleges) in the year 1971. This decision was taken in order to raise the standard and reputation of these institutions, as well as to ensure the international recognition of their graduates. The establishment of such a new non-university level sector of higher education also gained support because many planners considered it undesirable to follow the social demands for expansion of the university sector.

Up to 1970, persons who had completed their compulsory education and apprenticeship training were, after a few years of work, eligible to sit the admission tests of engineering schools and higher vocational schools. A major role in the deliberations and decision making process was played by those who argued that this scheme would interfere with the international mobility of engineers, and would encourage the growing tendency of talented youth to opt for academic secondary schooling and a university education. Admission to Fachhochschulen, therefore, now requires the intermediate track of a lower secondary education (Realschule) and two years' attendance at a vocational high school or completion of academic secondary schooling after 12 years, instead of the customary 13 years, for being eligible for admission to university.[37]

The continuous debates about the relationship between these institutions and universities have focused on which would be the most satsifactory policy to follow. Should the programs of vocationally oriented colleges remain very distinct from university programs, or should the gap between the two be narrowed?[38] The debate also continued on the appropriateness of the change in admissions requirements which came into force with the upgrading process from higher vocational schools to non-university institutions of higher education - 12 years of schooling instead of vocational experience. These institutions have always held a stable position because their graduates fitted into the traditional occupational hierarchy at the semi-professional level, and had staffed the second of four career ladders of the public services. However, Fachhochschulen did not become as popular as many of its proponents had hoped. The Science Council's 1970 recommendations, for instance, had

envisaged that 60 per cent of new students would enter non-university level education, whereas the level actually remained at around 30 per cent during the seventies.

In addition, various efforts were made to diversify other types of institutions and courses. Among others, there was a proposal in the early seventies to establish a new type of institution which would lay between the vocational colleges on the one hand, and vocational schools on the other: Berufsakademien (vocational academies) were supposed to offer a shorter alternative to secondary school leavers: between one and two years spent partially on schooling and partially on on-the-job training.[39] Institutions of this type had been established in only two states, offering training opportunities for less than one per cent of those eligible for higher education.

Finally, in the late seventies, the state governments established Verwaltungsfachhochschulen for the training of second-rank personnel in the non-technical areas of the public service sector (public administration, library science, training of personnel for employment agencies, etc).[40] These institutions are intended to be of the same level as vocational colleges, but with two notable differences: Only persons who have been given a contract by public agencies are entitled to enrol; the total training phase lasts three years, 18-24 months at college, and 12-18 months on-the-job training. In 1980, 6 per cent of all freshmen at institutions of higher education were enrolled at these Verwaltungsfachhochschulen.

5.3 Comprehensive Universities

Merging institutions of higher education into comprehensive universities where feasible (within the regional institutional setting) became a very popular idea in the late sixties and early seventies. Around 1970, all major parties, and most of the major societal groups concerned, agreed upon the concept of comprehensive higher education wherein all universities and Fachhochschulen should be institutionally merged into comprehensive universities (Gesamthochschulen).[41] The major proponents of a comprehensive higher education suggested that students from both the academic secondary education track and those eligible for vocational colleges, should attend courses jointly at comprehensive universities. Two models of the so-called Integrierte Gesamthochschule were finally realized. These were the "consecutive model", in which both groups of students take part in a joint program up to the first degree which is at least equivalent to a vocational

college degree although somewhat closer to the university program. The students could then continue their studies up to a second degree which would be equivalent to the university degree. The second model, known as the Y-model, allows students to take part in a joint introductory program of at least one year, and then split into short-cycle and long-cycle programs. Some people were reluctant to establish such a degree of integration and suggested that some of the mergers should introduce any of those integrated models they might choose, whereas others were in favour of the so-called kooperative Gesamthochschule which should retain separate courses within one institution, but establish joint bodies to reduce the gaps between the programs and to ease transfer.

Only 11 comprehensive universities were founded in the seventies, none of which incorporated a previously existing university: 6 of these established integrated courses (5 the Y-model, one the consecutive model). The number of students who enrolled at comprehensive universities remained at about 6-7 per cent.

The major reason for the failure of comprehensive universities to become the regular model of higher education was because of a superficial compromise between conflicting goals. Whereas some proponents favoured an integrated model - a new synthesis between the research-oriented university and the vocationally oriented Fachhochschulen which would reduce institutional and program hierarchy - others considered comprehensive universities as a tool to make short-cycle higher education more attractive and more stable. But, proponents of the latter concept soon withdrew their support as doubts began to grow about the capability of comprehensive universities to take over such a "cooling out" function, and because of the strong resistance of universities against such a merger.[42]

Thus, comprehensive universities became a small additional sector to the German higher education system which eased the transfer from school to higher education for those who chose such institutions. From about 1976/77, the Science Council, the West German Rector's Conference, as well as several state governments, have withdrawn their support of this model as a major structural pattern of mass higher education.

5.4 Short-Cycle Courses at Universities

In 1976 and 1978 the Science Council suggested the introduction of

short-cycle courses at universities as a third type of course to be given alongside the long courses at universities and the vocationally oriented courses of Fachhochschulen.[43] The Council was convinced that an elite sector for about five per cent of the corresponding age group was needed, whereas for most other students any type of shorter program was considered suitable. The Council had reached the conclusion that the Fachhochschulen were not sufficiently attractive and could not overcome their tradition of primarily serving the three major fields of engineering, business and social work. The Science Council also hoped this move would ensure the universities' support for short-cycle higher education.

However, it transpired that most university representatives considered these short-cycle courses to be nothing more than a means of watering down the quality of higher education to an intolerable level within the tradition of German universities. Furthermore, employers' representatives also strongly opposed the introduction of such courses:[44] according to them, the introduction of such a third type of course was superfluous given the occupational structure. It could only lead to endangering Fachhochschulen and thus encourage an academic drift. The proposals to establish a broad range of short-cycle courses at universities were not implemented at all. At the same time, the only major sector of shorter courses in the university sector - the teacher training for elementary schools and for the so-called main schools (Hauptschulen), the lowest of the tracks of secondary education - decreased in size due to low replenishment ratios of teachers and declining age cohorts of pupils of corresponding age. In addition, prolongation of study, as well as the share of students taking a second course of study or taking advanced courses, increased in the latter half of the 1970s.

5.5 Hierarchization of Universities

As already mentioned, many scholars and educational planners in the Federal Republic of Germany share the view widely held internationally that an expanded system of higher education needs an elite sector. Since various proposals to restructure the institutional and course patterns did not succeed, many proposals were subsequently made to reinforce differences of quality and prestige of formally equal institutions. As the debate focuses on differences in quality and prestige rather than any genuine diversity of goals,[45] it seems

appropriate to name the goal of these proposals "hierarchization" rather than diversification.

There have been continuous debates as to what extent a hierarchy of universities had developed in recent years. A survey published in 1977 on employers' ranking of universities[46] and a survey on choice of universities of applicants of Numerus clausus fields[47] seem to support the view that we find a clear-cut prestige hierarchy of institutions. In addition, some new universities face difficulties in increasing their enrollment; it was frequently claimed that the new universities are less attractive because they offer less frequently restricted and otherwise attractive fields of study, lag behind in establishing an academic reputation and in part started educational experiments which did not prove successful.

A more detailed analysis shows that the hierarchy of institutions might be considered significant if we take as a yardstick the concept of equal standard of all institutions as traditionally considered to be desirable in Germany, but that the hierarchy is very limited if we compare it to diversified systems of higher education or if we take the proposals of proponents of a hierarchization as a yardstick. Some findings are briefly explained:

Table 2
Rank Order of Universities according to Students-Capacity Ratio in 1979

Ranks	Number of "new" universities	Name/locality of "new" universities
First - 10th	2	GH Duisburg, GH Kassel
11th - 20th	4	GH Essen, GH Paderborn, Oldenburg, Kaiserslautern
21st - 30th	4	Bremen, Eichstaett, Dortmund, GH Siegen
31st - 40th	4	GH Wuppertal, Bochum, Lueneburg, Osnabrueck
41st - 50th	7	Bamberg, Ulm, Bayreuth, Hildeshelm, Trier, Regensburg, Duesseldorf
51st - 54th	4	Augsburg, Passau, Bielefeld, Konstanz

Source: Cf. Hansgert PEISERT: Studienortwahl und Entwicklungsprobleme neuer Universitaeten. Konstanz 1981, mimeo.; based on Wissenschaftsrat: Ausbaustand und Entwicklungsbedingungen neuer Hochschulen. Koeln 1980.

- The Science Council calculated the ratio of students to official capacity of each of the 54 universities in the Federal Republic of Germany. Table 2 shows that many new universities are on the bottom of such a list, if utilization of capacity can be considered as a measure of prestige. However, there are some new institutions ranking highly in such a list.
- It was frequently claimed that new universities provide "cheap" and less attractive fields of study over-proportionally as a consequence of policy to expand higher education in a somewhat cheap way. However, as table 3 shows, the differences between "old" and "new" universities regarding fields of study are quite small. In addition, the argument is somewhat contradicted by the fact that the student-teacher ratio is smaller at "new" universities than at "old" universities.
- In terms of students' choice, the hierarchization of fields of study due to Numerus clausus[48] is far more striking than any hierarchization of institutions.
- The claim of a striking hierarchization tends to compare the ideal of the past to the reality of the present. Historical analyzes on stratification in the past can show that hierarchies within fields of study are not a new phenomenon.[49] On the contrary, it is striking to see that factual hierarchies did not lead to policies of reinforcing these hierarchies.

No matter, whether one perceives the existing prestige differences between institutions of higher education in the Federal Republic of Germany as remarkable or negligible, it is interesting to note that most institutional and policy measures continue to be designed in a way which keeps the equity of institutions as norm. For example, admissions to Numerus clausus fields is centrally organizaed, public financing of universities is only weighed according to fields of study, but not according to institutional prestige, a major goal of curricular coordination is to preserve the opportunity to move freely from one institution to another, professors can increase their salary only when receiving a "call" from another institution. There has not been any striking change towards weakening of mechanism which keeps the hierarchy of institutions within bounds.

Table 3

Students by Field of Study and Student-Teacher Ratio at "Old" and "New" Universities in the Federal Republic of Germany 1979

Fields of study	Percentage of students		Student-teacher ratio*	
	"old" univ.	"new" univ.	"old" univ.	"new" univ.
Humanities, education	35.0	29.1	18.8	14.5
Economics and social sciences	21.0	25.1	24.2	19.2
Mathematics, sciences	17.0	18.6	9.4	8.1
Agricultural and food sciences	2.5	0.9	12.8	(39.0)**
Engineering	11.5	14.1	12.8	11.2
Fine arts, sports	2.1	4.0	18.5	18.4
Medical fields	10.9	8.2	4.3	4.0
Total/mean	100.0	100.0	12.0	10.9

Source: Based on Wissenschaftsrat: Ausbaustand und Entwicklungsbedingungen neuer Hochschulen. Koeln 1980, p. 12.

"New universities": founded after 1958; fine arts colleges are not included.

* All university-trained staff included.

** Refers only to one university

Also employers seemed to take a cautious position in this debate. It must be noted that many employers' representatives expressed their annoyance about a survey on the ranking order of universities according to employers' views: On the one hand they like to make known their disagreement to some university reforms, but on the other hand they do not want to reinforce a trend towards an institutional prestige hierarchy.[50]

Finally, the majority of students is not concerned about institutional

ranks. Many of them prefer to go to universities in large cities or in old university towns. According to a recent survey, this is primarily due to expectations of the living environment rather than the assessment of quality of higher education per se.[51]

It is therefore not surprising to find that proponents of the establishment of an elite sector of higher education gradually gave up the hope that a gradual process of hierarchization between institutions would lead to the diversity they consider necessary. The recent proposals discussed in the next section are based on the assumption that a trend towards a hierarchization is not sufficiently strong.

5.6 Sequential System of Courses

In 1982 and 1983, we observed a boom of proposals to establish a sequential system of courses similar to the Anglosaxon tradition of the bachelor and master. For example, the previous president of the West German Rectors' Conference, Turner, his successor Berchem, the Christian Democrat minister of higher education and science in Lower Saxony and West Berlin, Oschatz and Kewenig, as well as the Social Democratic minister of higher education and science in Northrhine-Westphalia, Schwier, proposed fairly similar models of that kind.

It is not surprising to find proposals of this kind in the Federal Republic of Germany; the new quality of the debate is rather such a convergence of arguments that this model would be the most appropriate one. From my point of view, the following aspects help to explain the context of these proposals:

- Already during the seventies, critics of a strong hierarchy of higher education gave up their hopes that a policy of restricted admissions would keep expansion within bounds. Therefore, Turner argues that a sequential model could offer all qualified secondary school leavers the right to study but at the same time permit a restriction of the second stage to about 25 per cent of the most qualified students.[52]
- The proponents of an elite sector take into account that any proposals to expand short-cycle higher education parallel to long courses at universities and any efforts to increase institutional hierarchies were not successful. They hope that a sequential model meets less resistance in the context of desired equity of institutions.
- The financial problems of the governments as well as recent predictions

of a further significant rise of student numbers unite educational planners of various backgrounds in efforts to find some ways of reducing the average length of study as an alternative to increasing Numerus clausus. They hope that under these pressing circumstances a compromise of a sequential model can be achieved more easily.

These models, however, meet with substantial cricitism which is somewhat similar to the criticism of the poposal to establish short-cycle courses alongside long courses at universities: Within the German context of a fairly specialized professional/vocational preparation both in vocational education and higher education, general first degrees following the Anglosaxon model of a bachelor degree will have no significant drawing power on the labour market: Students will consider this only as a dead end under the conditions of a constrained labour market. From my point of view, the proposals themselves are self-defeating in this respect: Turner, for example, argues, that the stage model will result in graduates having more moderate job expectations initially, and will thus ease transfer to the types of jobs they will anyway have to accept, but he does not propose any curricular substance for the first stage which might help to create any kind of professional pride or identity. These shortcomings lead me to believe that these proposals will not be successful in the context of the Federal Republic of Germany.

As in the case of previous suggestions to establish short-cycle courses alongside regular university courses at universities, these proposals for a sequential model met similar reservations. In addition, the Federal Minister of Education of the new coalition of Christian-Democrats and Liberals which has been in power since autumn 1982, favoured a policy of diversification of what are formally equal institutions rather than the introduction of a new degree (similar to the bachelor degree) at all institutions.[53] Finally, in 1985/86 the Science Council recommended a solution which seems to strive for a compromise between those positions. According to these new proposals, it was hoped that the universities would no longer resist shorter periods of study, if

- efforts were made to make sure that students can conclude, and are urged to conclude, their course of study after four years instead of the average six years,
- universities no longer emphasize research-related teaching in the regular degree courses, but rather emphasize advanced and graduate courses which ought to be introduced on a regular basis instead of the

predominantly informal or scattered arrangements which presently exist.

These proposals seem to me to give up all hope that the universities will develop any positive views towards shorter courses. Instead, it is hoped that the university professors will direct their interests primarily towards to advanced and graduate courses and will not seek solutions for the regular degree-level courses favoured by educational planners.

5.7 The Outcome of Structural Trends and Policies

In summing up the experiences of the structural policies regarding higher education in the Federal Republic of Germany, one might be inclined - at a first superficial glance - to claim successes in efforts towards diversification, and failures in efforts towards a comprehensive pattern. At least for the period until the mid-seventies, there was an increase in the prestige differences between field of studies and between universities. Also, additional types of institutions of higher education have been established. Further, whereas only very few comprehensive universities have been established - and these are now under great pressure to justify and adapt themselves - at least the vocational colleges (Fachhochschulen) are now generally accepted.

A more detailed analysis, however, can only conclude that the higher education system in the Federal Republic of Germany has not gone very far in the direction of a diversified system and that elements of diversity have not stabilized. Five findings support this conclusion:

a. Diversification was intended to open up higher education to a variety of talents and to lower the minimum standards significantly, and at the same time channel the diversity of talents and abilities to a diversity of institutions and programs. In the Federal Republic of Germany, however, the Abitur - understood as a credential gained after a very intensive learning process - remained the prime prerequisite for access to higher education, with its guarantees, in principle, of access to all parts of the higher education system. This general view of the need for certain minimal standards for access to higher education which in turn leads to any sector of higher education, remains strong in spite of some exceptions: for instance, the special route into vocational colleges, the few exceptions for adults without Abitur on the one hand, and the additional barriers to entering Numerus clausus fields, on the other hand. However, there is at the moment substantial popularity for the concept of setting closer common standards for the Abitur.

b. The notion that efforts to establish comprehensive universities showed the inadequacy of the concept, needs to be qualified.[55] The concept of the comprehensive university became very popular around 1970, because it was supported by those in favour of egalitarian reforms as well as by those who hoped that it would halt expansion of university-trained persons. Clearly this coalition could not continue, no matter what parts of the contradictory expectations were realized. The comprehensive universities lost their popularity because they did not pacify status conflicts but, rather, allowed latent conflicts to manifest themselves. Obviously, comprehensive universities did not work as a "cooling out" device, but rather allowed many young people without Abitur to qualify for university degrees. Finally, the concept faces problems because efforts in higher education, and on the labour market in general, to retain clear-cut differences proved to be much stronger than expected. Under these conditions, it is not surprising that the major success of comprehensive universities in the face of the debate on the strengths and weaknesses of comprehensive or diversified models tends to be overlooked: Students who qualified for vocational colleges are almost as equally successful as students having Abitur.[56]

c. Vocational colleges (Fachhochschulen) are often praised by politicians as a successful outcome of the structural policies. But if something more than survival is taken as a yardstick, one has to note that stablization is lacking. Most of the employers' praise continues to be overshadowed by a nostalgic view of the earlier institutions. The majority of representatives of vocational colleges now stress their differences to universities in the hope that this will be helpful for their graduates, but at the same they strive for an extension of the study period, and a stronger involvement in research: some elements of an "academic drift" cannot be overlooked. The regulations of the new vocational colleges for public administration have been created as tighter counter-measures against any blurring of differences between universities and the non-university level of higher education. Finally, the vocational colleges were expected originally to attract an increasing percentage of students, but they have not succeeded in this respect.

d. Trends and measures towards a more diversified pattern of higher education lead to such an increase in competition to enter the most attractive sectors of higher education, that the majority of people involved in the decision-making agreed that measures to relay these competitions were

needed. Consequently, various steps were taken to keep hierarchies within bounds. These findings do not contradict the arguments of proponents of the diversified model that a "true" diversification, which not only establishes hierarchies but promotes a variety of distinct goals, might have been more successful. However, the first steps taken in that direction in the Federal Republic of Germany led to the impression that further steps were more likely to cause over-competition than any relaxation of competition.

e. In recent years the system of higher education in the Federal Republic of Germany has been criticized by proponents of a diversified pattern for not being sufficiently diversified. For example, the German-U.S. Study Group on Access to Higher Education organized by the International Council for Educational Development came to the conclusion that the Federal Republic of Germany could solve most of its admissions problems if it turned towards a truly diversified structure.[57] In early 1979 the Science Council argued that universities in the Federal Republic of Germany do not sufficiently take into account the varied talents of students and thereby neglect the training of an elite.[58] One might disagree with these arguments, but they indicate that higher education in the Federal Republic of Germany has not been a success story as regards efforts towards a diversified model. Rather, higher education in the Federal Republic of Germany became a mix of elitist, comprehensive, diversified and stratified approaches, and current policies show no sign of reaching a consistent model of either kind.

6. Past Experiences and Future Prospects: The Failure of Structural Strategies

In trying to summarize trends in access to higher education and the structure of the higher education system in Western industrialized societies in the last two decades, one can undoubtedly detect a widened access in general. Many countries opened up access to youth who had not followed an "academic" secondary education. Various efforts can be observed to open up higher education to "new students"[59] - students belonging to disadvantaged groups and/or were (according the previous regulations) not entitled to enrol at institutions of higher education. There are, however, substantial differences from country to country so that it would not be justified to state a convergence in terms of the percentage of students enrolled, prerequisites for access to higher education, or efforts to serve certain previously

disadvantaged target groups.

Second, one finds a growing diversity of institutions and programs in most countries. In analysing the development of the institutional settings one can point at certain common trends, such as a growing prestige of the non-university "vocational" programs in higher education on the one hand, and the decline of prestige of humanities and social science at university on the other. This is due primarily to changing labour market conditions.[60] A growing diversity of institutions and programs in almost all countries - again - does not automatically imply a convergence of the pattern of higher education systems. Substantial differences have remained. One might state a long list of variations such as the following one: In some countries restricted admissions dominate in the university sector, whereas the majority of non-university level institutions offer open admissions; in other countries, the non-university institutions are more prone to restricted admissions.

Third, one finds a fairly limited role of structural strategies. Even in countries, such as the Federal Republic of Germany, where serious efforts were made to revamp higher education strategically, we see neither the results of consistent strategical actions in the past, nor a desire for real strategical action in the future. The belief in the virtue and the feasibility of structural strategies seems to have vanished.

Searching the reasons for the "failures" of strategies to reform the structure of higher education generally, one might state growing insights in general about the difficulties to be faced when reforming higher education.[61] There was a general decline in the belief that society can be changed systematically; the increasing popularity of the implementation approach in the social sciences reflects this trend. In addition, we observe that higher education might be especially resistant to systematically induced change: The open, diffuse, and consensus oriented decision making structures,[62] as well as the skepticism of scholars being confronted with proposals for change,[63] offer little chance for systematic innovation strategies. Most implementation processes of major programs faced substantial difficulites - no matter whether efforts were directed towards an integrated, as in the case of Gesamthochschulen in the Federal Republic of Germany, or towards a diversified model, as in the case of the IUTs in France.

But even where efforts to realize structural strategies succeeded in structural changes, the structural models frequently discussed did not meet

expectations. On the one hand, in only a very few countries were efforts made to establish - at least partially - an integrated model. These experiments of integration can claim some achievements although these "successes" tend not to be highly appreciated. For the proponents had higher expectations, while the critics changed their yardstick in such a way that successes according to the original goals are now counted as failures, and many problems remain unsolved. The diversification-model now meets more favourable conditions because the general trends of widening access, and the increasing institutional diversity, is closer to a strategy of diversification. Furthermore, the general mood of society now fits better to this model. But the harsh and frequently polemic tone of proponents of the diversified model[64] does not support the impression that they feel very certain about the plausibility and likely success. Also, the mood in favour of a certain model might not be based on a far-reaching consensus, but just on certain constellations: For example, the institutional integration in Sweden finally began in 1977 when international efforts of that kind were on the wane. But it is interesting to observe, as Rune Premfors did, that the majority of members of the Swedish parliaments had not studied at university, whereas in some other countries which were more prone for diversification the majority were university graduates.[65] The value orientation influencing the assessment of higher education systems might be more diverse than some reports lead us to believe.

The problems of these models to gain general acceptance are not surprising, if we take into account the expectations for them. Since it is generally considered that expansion of higher education tends to lead to "over-education", the structural models are expected to reduce the number of students striving to enter the prestigious sectors of higher education and also to reduce the institutions' "drift" to become similar to the prestigious institutions.[66] Neither models proved to be the solution for these status problems.

One might ask, however, whether any changes of these conditions can be expected in the future to support certain structural models. Among the many recent publications on higher education in the 1980s and 1990s,[67] we frequently find the argument that changes in the labour market for graduates in the seventies began to challenge existing prestige hierarchies in higher education. But such a change does not necessarily favour one of the discussed models: On the one hand it might improve the conditions for what is called the

true diversification, a variety of hierarchical steps mixed with a diversity of characteristics; on the other hand, this trend might narrow the gaps between the non-university level of higher education and universities, and thereby ease the establishment of comprehensive settings. Therefore we might be justified in concluding that we cannot really expect a trend towards more consistent structures of higher education in the future. In most countries a mix might continue which contains elements of diversity, but does not consequently follow the inner logic of a diversified model. It remains an open question which role will be played by the different aims of the diversified model on the one hand, and the comprehensive model on the other - for example homogeneous or heterogenious student body, distinct or integrated curricular goals etc. - in the future development of access to, and the structure of higher education.

Notes

1. On recent quantitative development of higher education in Western Europe see also Ladislav CERYCH, Sarah COLTON and Jean-Piere JALLADE: Student Flows and Expenditure in Higher Education. Paris: Institute of Education, European Cultural Foundation 1979; OECD: Educational Trends in the 1970s: A Quantitative Analysis. Paris, 1984. Reinhart SCHNEIDER: "Die Bildungsentwicklung in den westeuropaeischen Staaten," in Zeitschrift fuer Soziologie, Vol. 11, No. 3, 1982, pp. 207-226.

2. On various structural policies in response to the expansion of higher education see Ulrich TEICHLER, Dirk HARTUNG, and Richard NUTHMANN: Higher Education and the Needs of Society. Windsor: NFER Publishing Company 1980.

3. On admissions and manpower policy in Rumania see Maria MICLESCU: Der Hochschulbereich in Rumaenien. Frankfurt: Deutches Institut fuer Internationale Paedagogische Forschung 1977; Ministerul Educatiei Invatamintului: Admiterea in Invatamintul Superior 1980. Bucarest 1980; Dan MIHOC: "Problemes actuels de l'acces a l'enseignement superieur en Roumanie," in Consultation for the Preparation of a Study on Access to Higher Education in Europe. Bucarest: UNESCO/CEPES 1978, pp. 87-90; see also Ulrich TEICHLER: "Hochschule und Beruf in Rumaenien," in Paedagogik und Schule in Ost und West, Vol. 29, No. 3, 1981, pp. 57-62.

4. See also R. AVAKOV et al.: Higher Education and Employment in the USSR and in the Federal Republic of Germany. Paris: Unesco, IIEP 1984.

5. See Jan KLUCZYNSKI: "Das Hochschulwesen in Polen - Probleme und Perspektiven," in Jan KLUCZYNSKI, Ulrich TEICHLER and Christian TKOCZ (eds.): Hochschule und Beruf in Polen und in der Bundesrepublik Deutschland. Kassel: Stauda 1983, pp. 10-24; for more detailed information see Bikas C. SANYAL and Adam JOSEFOWICZ (eds.): Graduate Employment and Planning for Education in Poland. Paris: International Institute for Educational Planning 1978.

6. See TEICHLER, HARTUNG and NUTHMANN, op. cit., pp. 21-57.

7. Dieter MERTENS, "Unterqualifikation oder Ueberqualifikation?" in Gewerkschaftliche Monatshefte, Vol. 27, No. 8, 1976, pp. 488-497.

8. On problems of the inner logic of selection in education see especially Torsten HUSEN, "Strategies for Educational Equality," in OECD (ed.): Education, Inequality and Life Chances, Vol. 1, 1975, pp. 308-343.

9. See Corrado DE FRANCESCO: "The Growth and Crisis of Italian Higher Education during the 1960s and 1970s," in: Higher Education, Vol. 7, No. 2, 1978; cf. also Manfred TESSARING and HEINZ Werner: Beschaeftigung und Arbeitsmarkt fuer Hochschulabsolventen in den Laendern der Europaeischen Gemeinschaft. Nuernberg: Institut fuer Arbeitsmarkt- und Berufsforschung der Bundesanstalt fuer Arbeit 1981, pp. 140-164.

10. On access to higher education in Australia see Paul KELLERMANN: Studienaufnahme und Studienzulassung. Klagenfurt: Kaertner Druck-und Verlagsgesellschaft 1984.

11. Some of the argument in the U.S. has been summarized in Ulrich TEICHLER: Admission to Higher Education in the United States: A German Critique. New York: International Council for Educational Development 1978, pp. 91-101.

12. See Shogo ICHIKAWA: "Finance of Higher Education," in William K. CUMMINGS, Ikuo AMANO and Kazuyuki KITAMURA (eds.): Changes in the Japanese University. New York: Praeger 1979, pp. 40-63.

13. See Barbara B. BURN (ed.): Admission to Medical Education in Ten Countries. New York: International Council for Educational Development 1978.

14. On the quantitative development of higher education until the early 1970s, see OECD: Development of Higher Education 1950-1967, 2 vols., Paris 1970-71; Ulrich TEICHLER: "Trends in Higher Education with Respect to Student Population," in Higher Education in Europe, Vol. 5, No. 2, 1980, pp. 24-34.

15. See OECD: Short-Cycle Higher Education: A Search for Indentity. Paris 1973.

16. See Lillemor KIM: Widened Admission to Higher Education in Sweden - The 25/5 Scheme. Stockholm: National Board of Universities and Colleges 1982; Willi BECKER: : Barriers to Higher Education in the Federal Republic of Germany. New York: International Council for Educational Development 1978; Ministry of Education: Education in 1968-70. Tokyo: Ministry of Education 1971, p. 93; Ulrich TEICHLER: Das Dilemma der modernen Bildungsgesellschaft: Japans Hochschulen unter den Zwaengen der Statuszuteilung. Stuttgart: Klett 1976, pp. 152-156.

17. Harry HERMANNS and Ulrich TEICHLER: "Integration of Higher Education - Concepts and Models," in Harry HERMANNS, Ulrich TEICHLER and Henry WASSER (eds.): The Compleat University: Break from Tradition in Germany, Sweden and the U.S.A. Cambridge/Mass.: Schenkman 1983, pp. 1-19.

18. OECD: Recurrent Education, Paris: OECD 1973; see also Torsten HUSEN: "Recurrent Education's Impact on the Universities," in Barbara B. Burn (ed.): Higher Education and Current Crises. New York: International Council for Educational Development 1975, pp. 199-207.

19. See OECD (ed.): Policies for Higher Education. Paris 1974; OECD (ed.): Towards Mass Higher Education: Issues and Dilemmas. Paris 1974.

20. See for example Martin TROW: "Reflections on the Transition from Elite to Mass Higher Education," in Daedalus, Vol. 90, No. 1, 1970, pp. 1-42; Martin TROW: "Problems in the Transition from Elite to Mass Higher Education," in OECD (ed.): Policies for Higher Education. Paris 1974, pp. 51-101; Burton R. CLARK: "The Benefits of Disorder," in Change, Vol. 8, No. 10, 1976, pp. 31-37.

21. See especially Jerome KARABEL: "Community Colleges and Social Stratification," in Harvard Educational Review, Vol. 42, No. 4, 1972, pp. 521-562.

22. Cf. Dorothea FURTH: "Higher Education in the 1980s: Some Key Issues in West European Countries," in Higher Education in the 1980s. Hiroshima: Hiroshima University, Research Institute for Higher Education 1980, pp. 160-172.

23. See the overview in Ladislav CERYCH, Ayla NEUSEL, Ulrich TEICHLER and Helmut WINKLER: Implementation of Higher Education Reforms: The German Gesamthochschule. Paris: Institute of Education, European Cultural Foundation 1981; Ayla NEUSEL and Ulrich TEICHLER: "Comp-

rehensive Universities - History, Implementation Process and Prospects," in HERMANNS, TEICHLER and WASSER, op.cit., pp. 125-196.

24. Some authors consider thus the term of "binary systems" only appropriate for the case of the coexistence of two types not differing according to the length of study: This applies to universities and polytechnics in England. For detailed information on this system see Anthony BECHER, Jack EMBLING and Maurice KOGAN: Systems of Higher Education: United Kingdom. New York: International Council for Educational Development 1978. Other authors consider all systems binary which are based primarily on two types of higher education institutions.

25. The most obvious example of a hierarchical or stratified system among industrial societies is Japan; for detailed information see Katsuya NARITA: Systems of Higher Education: Japan. New York: International Council for Educational Development 1978; Ulrich TEICHLER: Geschichte und Strukur des japanischen Hochschulwesens. Stuttgart: Klett 1975.

26. See Ulrich TEICHLER and Bikas C. SANYAL: Higher Education and the Labour Market in the Federal Republic of Germany. Paris: UNESCO Press 1982, chapter 4.

27. This concept became recently visible again when the West German Rectors' refuted the proposal by the Permanent Study Reform Commission to take into account such aims in higher education; see Ulrich TEICHLER: "Recent Developments in Higher Education in the Federal Republic of Germany," in European Journal of Education, Vol. 17, 1982, pp. 169-176.

28. Sekretariat der Staendigen Konferenz der Kultusminister der Laender in der Bundesrepublik Deutschland: Prognose der Studienanfaenger, Studenten und Hochschulabsolventen bis 1995. Bonn 1982, mimeo.

29. Cf. the overview on recent trends and policies in Ulrich TEICHLER: Oeffnung der Hochschulen" - auch eine Politik fuer die 80er Jahre? Bremen: Senator fuer Wissenschaft und Kunst 1983.

30. Bundesminister fuer Bildung und Wissenschaft: Studienerfolg - Aufwand und Ertrag. Bonn 1983, p. 19.

31. Cf. Bund-Laender-Kommission fuer Bildungsplanung und Forschungsfoerderung: Strukturprobleme zwischen Bildungs- und Beschaeftigungssystem und ihre Konsequenzen fuer die Bildungsplanung. Bonn 1983, mimeo., p. 16.

32. On access and admissions see Willi BECKER, op. cit.; Barbara B. BURN: "Access to Higher Education in the Federal Republic of Germany and the

United States," in International Review of Education, Vol. 22, 1978, pp. 193-201; Ulrich TEICHLER: "The Federal Republic of Germany," in Burton R. CLARK (ed.): The School and the University. Berkeley/California: University of California Press 1985, pp. 45-76.

33. Ulrich TEICHLER: "Recent Developments," op. cit.

34. See Stifterverband fuer die Deutsche Wissenschaft (ed.): Schuelerberg und Ausbildung. Stuttgart: Klett 1976.

35. Ulrich TEICHLER: "Oeffnung der Hochschulen" - auch eine Politik fuer die 80er Jahre?" op. cit., pp. 31-38: on data on recent developments of higher education see Wissenschaftsrat: Zur Lage der Hochschulen Anfang der 80er Jahre, 2 vols. Koeln 1983.

36. On the institutional pattern see Hansgert PEISERT and Gerhild FRAMHEIN: Systems of Higher Education: Federal Republic of Germany. New York: International Council for Educational Development 1978.

37. On Fachhochschulen see Deutscher Bildungsrat (ed.): Gutachten und Materialien zur Fachhochschule. Stuttgart: Klett 1974; "Das zukuenftige Angebot der Fachhochschulen" (special issue), in Die neue Hochschule, Vol. 18, No. 6, 1977.

38. See Ludwig GIESEKE: "The 'Fachhochschulen' in the Federal Republic of Germany," in Higher Education in Europe, Vol. 6, No. 2, 1981, pp. 42-46; cf. also TEICHLER, HARTUNG and Reinhard NUTHMANN, op. cit., pp. 111-114.

39. See especially Ministerium fuer Wissenschaft und Kunst Baden-Wuerttemberg (ed.): Berufsakademie Baden-Wuerttemberg. Villingen-Schwenningen: Neckar-Verlag 1978.

40. Hans BRINCKMANN, Susanne HACKFORTH and Ulrich TEICHLER: Die neuen Beamtenhochschulen. Frankfurt and New York: Campus 1980.

41. As for the original concepts, see International Association of Univertsities (ed.): Problems of Integrated Higher Education: An International Case Study of the Gesamthochschule. Paris: International Association of Universities 1972.

42. On the implementation process see Ladislav CERYCH, Ayla NEUSEL, Ulrich TEICHLER and Helmut WINKLER: Gesamthochschule - Erfahrungen, Hemmnisse, Zielwandel. Frankfurt and New York: Campus 1981.

43. Wissenschaftsrat: Empfehlungen zu Umfang und Struktur des Tertiaeren Bereichs. Koeln 1976; Wissenschaftsrat: Empfehlungen zur Differenzierung des Studienangebots. Koeln 1983.

44. Bundesvereinigung der Deutschen Arbeitgeberverbaende: Fachhochschule-Kurzstudiengaenge: Gedanken zur Differenzierung der Studiengaenge. Koeln 1978.

45. In this respect the debate differs markedly from the proposal to create a "true diversity" made by the German-U.S. Study Group; cf. Access to Higher Education: Two Perspectives. A Comparative Study of the Federal Republic of Germany and the United States of America. New York: International Council for Educational Development 1978.

46. Reinhard SCHMIDT: "Schlechte Noten fuer rote Unis," in G. BRAUNGART et al. (eds.): Studium 80. Stuttgart: Alektor 1981.

47. Ernst GIESE: "Die Anziehungskraft wissenschaftlicher Hochschulen in der Bundesrepublik Deutschland," in Die Erde, No. 113, 1982, pp. 115-132.

48. Cf. for example the correlation of grades and preferences of field of study as shown by Tino BARGEL: "Schulleistung und Ausbildungswahl," in Hansgert PEISERT, ed.: Abiturienten und Ausbildungswahl. Weinheim and Basel: Beltz 1981, p. 145.

49. Cf. Hirotoshi YAMAZAKI: "Hierarchy Structure and Mobility of Professors among Universities in German-speaking World, - Case of Medicine since the Late 18th Century," in Daigaku Ronshu (Hiroshima), No. 10, 1981 (in Japanese).

50. See the survey on the criteria and processes of recruitment of University graduate in private large firms: Ulrich TEICHLER, Michael BUTTGEREIT and Rolf HOLTKAMP: Hochschulzertifikate in der betrieblichen Einstellungspraxis. Bad Honnef: Bock 1984.

51. Gerhild FRAMHEIN: Alte und neue Universitaeten. Bonn: Bundesminister fuer Bildung und Wissenschaft 1983.

52. George Turner: "Massenuniversitaet und Elitenbildung?," in Deutsche Universitaetszeitung, No. 7/1983.

53. Dorothee WILMS: Langfristige Konzeption fuer das Hochschulwesen," in Deutscher Bundestag/Bulletin, Nov. 10, 1983, pp. 1103-1107.

54. Geschaeftsstelle des Wissenschaftsrates: Entwurf: Empfehlungen zur Neustrukturierung des Studiums. Koeln 1985, mimeo.

55. See CERYCH et al.: Gesamthochschule - Erfahrungen, Hemmnisse, Zielwandel, op.cit.

56. See Rudolph MILLER: "Zur Bedeutung der sozialen Struktur, ausgewaelter psychosozialer Parameter und der Leistungsentwicklung von Studenten in integrierten Studiengaengen," in Joern SCHMIDT (ed.): Gesamthochschule: Eine vorlaeufige Bilanz. Hamburg: Arbeitsgemeinschaft fuer Hochschuldidaktik 1980, pp. 23-60; Josef HIT-

PASS and Juergen TROSIEN: "The Contribution of the Comprehensive University to Equality of Opportunity," in HERMANNS, TEICHLER and WASSER (eds.), op. cit., pp. 205-210.

57. Access to Higher Education: Two Perspectives, op. cit.

58. Wissenschaftsrat: Emfehlung zur Foerderung besonders Befaehigter. Koeln 1981, mimeo.

59. See OECD: "Access to Higher Education," in OECD: Policies for Higher Education in the 1980s. Paris 1983, pp. 73-211.

60. Op. cit., pp. 81-85.

61. See Ladislav CERYCH: "Retreat from Ambitious Goals?" In European Journal of Education, Vol. 15, No. 1, 1980, pp. 5-13.

62. See the concluding chapters in CERYCH et al.: Gesamthochschule - Erfahrungen, Hemmnisse, Zielwandel, op. cit.

63. See for example Astin's "Theory of institutional conservatism" in Alexander W. ASTIN: Academic Gamesmanship. New York: Praeger 1976.

64. See the overview in Henry WASSER: "Comparative Survey of Integration in Higher Education," in HERMANNS, TEICHLER and WASSER (eds.), op. cit., pp. 227-243.

65. Rune Premfors: The Politics of Higher Education in a Comparative Perspective. Stockholm: University of Stockholm 1980, pp. 145-148.

66. The impact of the "Academic drift" on non-integrated systems of higher education has been stressed by Guy NEAVE: "The Dynamics of Integration in Non-Integrated Systems of Higher Education in Western Europe," in HERMANNS, TEICHLER and WASSER (eds.), op. cit, pp. 263-276; on the impact of status problems on higher education in general see TEICHLER, HARTUNG and NUTHMANN: Higher Education and the Needs of Society, op. cit.

67. See, for example OECD: Policies for Higher Education in the 1980s, op.cit.; Verne A. Stadtman (ed.): Academic Adaptations: Higher Education for the 1980s and 1990s. San Francisco/Cal.: Jossey-Bass 1980; Higher Education for the 1980s - Challenges and Responses. Hiroshima: Hiroshima University, Research Institute for Higher Education 1980; Ulrich P. RITTER (ed.): Higher Education by the Year 2000. Frankfurt and New York: Campus 1985.

II

THE CHANGING LABOUR FORCE AND EXPANSION OF HIGHER EDUCATION IN THE FEDERAL REPUBLIC OF GERMANY

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1. Introduction

Views on the relationships between higher education and the occupation system changed dramatically in the 1970s. During the late 1950s and early 1960s the expansion of higher education was beginning to be conceived as a major factor for the stimulation of economic growth. There was a spread of optimism throughout international educational politics that the expansion of education would help to reduce social inequalities and contribute to economic growth. But already in the 1960s there was popular support for the viewpoint that any expansion of education would be inconceivable unless it was accompanied by far-reaching changes within higher education. For instance, higher education should respond to both the changing student population in terms of its talents and motives, as well as the changing job prospects of graduates. Such a response should undertake the modification of the structural patterns of the higher education system and changes in the curricular approaches of the "less noble" (less reputable) sectors of the higher education system. By the 1970s, earlier optimism regarding educational expansion turned to extreme pessimism: Serious 'mismatches' in the education-employment relationships were feared in terms of "over-education"; there was also growing disappointment about the limited role of education in reducing social inequality.

The substantial change in the general mood regarding the relationship

between the higher education and employment systems brought the debate to a focus on the problems arising from a high supply of graduates and the trends to reduce such problems and possibly, any new problems arising from those adjustment processes. This is also true of the 1980s, although the pessimistic mood of the late seventies gave way to more pragmatic views which show some signs of adjustments being made while other some problems for granted.

According to traditional views the discrepancies between the expansion of higher education and the demand for graduates could lead to a variety of consequences. On the basis of the approach derived from research and political debate we can establish five major areas of possible change:

(a) The first of these areas would be a change in enrollment.[1] As a consequence of admissions policies, or of decisions made on behalf of potential students reflecting their employment opportunities, the expansion of higher education might slow down or even come to an end.

The impact of enrollment trends and of admissions policies on higher education-employment relationships had been a very popular theme in the 1970s. In recent years, however, this element has suffered a substantial decline in popularity. This is due to the experience that comprehensive admission policies face too many problems which must be resolved and that changes in the social demand for higher education was not sufficiently extensive to force discrepancies on the labour market to be more or less resolved.

(b) The second area of change could be the higher education system itself. Major debate focuses on the institutional and course patterns in higher education, the distribution of students by field of study, and also curricular changes.

Already in the sixties there was strong emphasis on the restructuring of higher education. Several countries established a non-university sector of higher education through the foundation of new institutions, by up-grading higher vocational schools, or by expanding the sector which already existed. Subsequently, the debate focussed on the overall structure of the higher education system; a diversified pattern favouring a steep hierarchy with blurred borderlines between sectors became the most popular model in this debate.[2]

In the 1970s, more emphasis was placed on changing fields of study. This

reflected the general experience that higher education per se was not necessarily in demand and nor did it promise higher positions: in fact the value placed by the labour market on degrees became more and more diverse. Restricted fields such as medicine seemed to promise extraordinary privileges. The economic and engineering fields were also emphasized, partly reflecting public fiscal problems and partly opportunities for substitution in industrial and trade organizations. On the other hand, graduates from fields which are prominent in the teaching professions, as well as those which lack typical corresponding employment sectors, seemed to face growing employment problems. It was therefore possible to observe in several countries a trend toward a gradual dissociation of academic reputation and labour market value of fields and institutional types[3] as well as an increase in the percentage of students enrolling in those fields which promised relatively good employment prospects.[4]

Finally, many institutions of higher education modified curricular in response to the changing labour force, and to the changing work tasks of graduates. Motives for these changes were very diverse and did not necessarily imply adaptation to presumed demands, although considerable efforts continued in some countries and fields to render graduates more "employable".

These factors, when taken altogether - the changing higher education policies and the choices of students as regards the structures of higher education, fields of study, and curricular emphasis - lead to a growing "vocational" dimension in higher education. This trend seems to have been especially pronounced in the United States, given the substantial change of enrollment by field of study[5] and the offer of new vocational courses.[6]

(c) A third consequence of the rich supply of graduates are the overt problems pertaining to the transition from education to work. Prolonged periods spent in the search for employment, a growing "grey" labour market for graduates in terms of unstable employment, efforts to make a livelihood by combining various part-time activities, under-paid employment, self-employment with its consequent irregular income, etc. and finally, long-term unemployment, or any other social conditions usually depicted by the phrase "academic proletariat."

(d) A fourth direction of change due to the large supply of graduates might

be the absorption of the growing number of graduates without innovative or productive consequences. The employment problems of graduates who appear to be superfluous according to traditional standards of manpower demand, were overcome to some degree by a lowering of graduates' expectations regarding the correspondence of education and job task as well as income and status. According to this model employers would screen the graduates either in the recruitment process or after a period of work, and cope with the increased number of graduates through vertical substitution and various kinds of adaptations of the wage structure.

(e) Finally, the fifth direction of change are the innovations and other means of productive developments in terms of the character of work, the division of labour and status structure, as well as the "outcome" of the work as a consequence of a large supply of graduates. In contrast to the model discussed above, the unexpected supply would not merely be absorbed without causing any substantial change, but changes in education would have "push" effects on the employment system.[7]

These five areas of change as a consequence of the expansion of higher education can be analytically established if we assume that there are at least inclinations toward an increasing choice of higher levels of education, while at the same time there is stagnation, or a slower increase, of the level of qualification requirements demanded by the occupation system. It is obvious, however, that such a model does not give a complete description of the major changes occuring. In addition to such dynamics in the relationships between the education and occupation systems, other factors must be considered which influence the quantity and structure of the labour force, and the employment and work prospects of graduates.

During the 1970s, the economic problems which arose from the autumn of 1973 onwards had a great effect on the employment and work prospects of graduates. These economic problems obviously aggravated the discrepancies to be expected anyway as a consequence of rapid educational expansion and the comparatively slower changes of the occupational system. This set of circumstances reduced the bargaining power of graduates on the labour market in the face of increased unemployment and fewer manpower requirements than anticipated. Also, public expenditure was curtailed in many countries, and this

created further drastic reductions in the employment prospects for recent graduates in many fields of study.

In addition, it became obvious in many countries that trends in higher education and employment cannot merely be discussed in terms of percentages of enrollment among corresponding age cohorts or percentages of positions which are suitable and open to graduates. Demographic changes also play a considerable role.[8] As the demographic changes were less uniform than other issues in the Western industrialized countries it is not surprising to find that the debate on demographic issues was less of an "international debate" than were some of the other issues.

Two further issues gained widespread attention during the 1980s. First, a lack of organized work - most strongly visible by a high unemployment quota - was no longer conceived as a short-term phenomenon under difficult economic conditions. This situation began to be seen as a typical outgrowth of a 'crisis of a work society' in which the constant losses of organized work due to rationalization of the production processes are no longer nullified by the creation of new organized work.

Second, new technologies seemed to restructure work tasks and qualification requirements at a much faster pace than could be observed in previous decades. Demands for innovation in education became more pronounced, and there was growing uncertainty about future demands as regards fields, levels of education, the kinds of specialization required, etc.

Some experts claim that these two issues are in the process of revolutionizing the relationship between the education and occupation systems to such a degree that previous debates are already outmoded.[9] According to such views, the basic issue of the higher education-labour market relationship is no longer about how higher education and the occupational system should cope with a greater supply of graduates but, rather, how the education system should respond to the changes in production and the labour force.

The aim of this paper is to analyze the changing relationships between higher education and the occupation system in the Federal Republic of Germany from the time that the notion of a presumed - or real - oversupply of graduates due to the expansion of education became both widespread and a part of the general pessimistic notion of major educational reform efforts of the past. This change in the dominant mood of the times came about during the years 1972-74; where regular statistics are available we will go back in

some cases to 1970.

The underlying question is: What kind of solutions prevailed in this country for coping with the potential discrepancies on the labour market due to the trend of educational expansion? To what extent, and what kind of changes occurred in higher education as a response to these discrepancies? How did the labour market of graduates develop? What were the trends regarding the employment and work assignments of graduates? This is how we might assess the changes in the light of the changing dominant views on the possible virtues and detrimental aspects of the expansion of higher education.

Additionally, we will examine whether recent developments in the relationship between higher education and the occupation system indicate substantial changes due to the continuous shortage of organized work and new technologies. Do these issues, as some experts believe, already overshadow the issues discussed earlier? Before presenting the available information relevant to these two major questions under discussion, we will briefly outline the developments in higher education and graduate employment in postwar Germany.[10]

2. Higher Education and Graduate Employment until the Early 1970s

Higher education in the Federal Republic of Germany was preoccupied in the early postwar years with problems of reconstruction. Recovery was needed in terms of facilities, staff, and the living and working conditions of students. As far as the character of higher education was concerned, initial debates led to the underlying philosophy of the reconstruction period which emerged as the belief that the traditional German "Idea" of the university as had already emerged in the Humboldtian reforms in the early 19th century could continue as a guiding principle, and that maximum efforts should be made to correct the distortions of the Nazi era.

Already in 1955 expansion of the academic track of secondary education and the enrollment quota in higher education among the corresponding age group had become the continuing phenomenon. Debates about the need to expand higher vocational education and higher education to match the growing manpower demands had also begun prior to the international spread of concepts of the economics of education as well as OECD policies around 1960. These international debates, however, had made a strong impact since 1962,

because they indicated that the pattern of the West German education system and its the quantitative development seemed to be lagging substantially behind other countries. It was feared that this "educational catastrophe" would have strong negative repercussions on Germany's economic development. The fact that around 1960 only 5 percent of university students came from blue-collar social backgrounds, was also viewed as an indication of societal backwardness.

Although debates about the needs for expansion, the goals of educational policies and the approach to major educational reform turned out to be extraordinarily controversial, efforts in education planning were intensified to provide the money, facilities, staff etc. needed to accommodate the increasing demand for education. The percentage of GNP spent on education increased from 2.7 in 1961 to 5.5 in 1975; the corresponding share on higher education increased from 0.5 to 1.3 percent in the same period.

The 1960s showed a substantial expansion of advanced education. If we include the institutions upgraded to institutions of higher education in the early 1970s, the total number of students at such institutions increased from about 172,000 in 1950 to 329,000 in 1960, and 534,000 in 1970. The percentage of beginner students (again including the institutions upgraded in the early 1970s) grew from 8.6 percent in 1960 to 15.0 percent in 1970 and almost 19 percent in 1972.

It was obvious, however, that both the processes of educational expansion as well as that of changing graduate employment modes would not be smooth but would be - in comparison to many other industrialized countries - very complicated. The academic and research orientation of the German higher education systems would undoubtedly render expansion very costly. The emphasis on preparation for careers could not but complicate processes of substitution and the gradual changes in new employment prospects for graduates. The rather homogenious quality standards of German universities did not permit, as was the case in hierarchically structured systems of higher education, any of the "elite" universities to remain almost untouched by expansion: all universities were affected by the changing composition of the student body. And finally, the substantial influence of government on the planning of the higher education system continuously raised the issue of the responsibility of educational planning for the job prospects of graduates.

The structural pattern of the higher education system also underwent

great change. Most institutions previously not considered universities had been upgraded to universities, notably engineering institutions. Most teacher training colleges were also upgraded in the 1970s. On the other hand, efforts to re-structure the higher education system gained momentum. In 1971, engineering schools and higher vocational schools, especially for business and social work training, were upgraded to non-university level institutions of higher education. These were known as "Fachhochschulen". Around 1970 there seemed be a consensus that all institutions of higher education should be merged into so-called "Gesamthochschulen" (comprehensive universities). But in the final event only 11 institutions of this kind were actually established between 1971 and 1974.

3. The Changing Mood in the Early Seventies

Retrospective views frequently over-estimate the changes of thinking and the mood of the past. In the Federal Republic of Germany there has been no "golden age" of education in terms of a widespread consensus on educational expansion and most of the educational reforms. For example, employers were not convinced of the need for the upgrading of engineering and higher vocational schools. However, the problems of international recognition facing German semi-professional engineers if they wished to work abroad was the final argument which led to a breakthrough in favour of the upgrading. Also, around 1970, employers' representatives frequently argued that the expansion of higher education would lead to a substantial over-supply of graduates and to the emergence of an "academic proletariate".

Nevertheless, we are justified in stating that the dominant view was in favour of educational expansion. Constitutional amendments in 1969 strengthened the power of joint coordination of higher education planning, construction, and students aid etc., on the part of Federal and state governments. In 1970, both the Science Council and the Education Council forwarded plans regarding the targets of educational expansion, its implementation, as well as the major reforms. Federal Government - the Social Democrats and Free Democrats had formed a coalition in autumn 1969 - expressed their sympathy with those plans in their Education Report '70.

Negotiations on a general education plan beginning in 1971 soon led to a

breakdown of the hitherto seemingly far-reaching consensus as regards educational expansion and major although disagreement became evident about targets of educational expansion and the possibility of providing money for schools, teachers etc. A compromise was finally reached after substantial changes in the provisions of educational expansion and the exclusion of a nation-wide regulation of major reforms. Because no compromise could be reached efforts to reach coordination in higher education reform by way of a Framework Act for Higher Education ceased in 1972. The debate was revived again in 1975 and led to a much less forceful law on the degree of coordination between different state laws on issues such as the structural pattern of the higher education system, the role of university presidents and administrations, as well as decision-making patterns in higher education.

The international economic crisis which struck in 1973 added to the pessimistic mood on educational reforms and expansion. It would be misleading, however, to consider this "external" factor to be primarily responsible for the change of mood which had gradually been developing since 1971, and had already led to an overt political rift between the two major political parties in 1972.

Finally, in 1975, very bleak reports on higher education expansion and graduate employment was published. According to projections on the part of private and public employers in that year, only about 40 percent of all persons graduating from institutions of higher education in the 1980s were likely to find appropriate jobs.

4. Trends and Policies since the Mid-Seventies

4.1 Access, Admissions and Quantitative Development of Higher Education

By the early 1970s the traditional German system of access and admission to higher education seemed to be on the verge of collapse. The early selection in educational careers on the one hand, and the freedom of those who have successfully completed the academic track of secondary education to enroll in any field of study at the university of his or her choice on the other hand, gradually eroded in the 1960s when admission to medical fields became selective. Many planners and educational experts at that time considered a total change of the admission system to higher education a matter of course. Given the strong emphasis on quantitative issues of

education and on quantitative educational planning at that time, it would not have been surprising if a restricted admissions policy had become the major tool in the Federal Republic of Germany in response to to the expected employment problems of graduates.

For various reasons, however, admissions policies did not become an important instrument for steering the education-employment relationships.[11] In the first place, such a drastic change in the selection and admission system proved to be unacceptable. The Federal Constitutional Court ruled in 1972, and again in 1977, that the right of open admissions for those who had successfully completed academic secondary education was part of the constitutionally protected right of a free choice of occupation, and that therefore Numerus clausus was only justified under certain limited conditions. These conditions were, among others, that tests and other specific selection devices for admissions were acceptable only if they measured competencies which are not measured by any kind of school assessment. There was also widespread criticism of the severe competition in secondary education as a consequence of Numerus clausus. It was obvious too, that Numerus clausus in some fields of study would not lead towards a better match between qualifications and demand, but would rather cause many students to choose fields of study which, upon graduation, might result in their facing even worse employment opportunities.

A second major reason was the fact that the major debates of the mid-1970s about a complete change of the admissions system was influenced by statistical information which showed that the rapid expansion of beginner students among the corresponding age groups had come to a halt after 1973. This information encouraged those who supported the idea of market regulation rather than educational planning.

Finally, there was a drastic change in the direction of debate when educational planners became aware of the fact that the demographic bulge of those born around 1964 was creating a substantial challenge to educational planning. All political parties, governments and major interest groups agreed to support a policy of "opening up higher education" by means of temporary emergency measures aimed at avoiding an inter-generational inequality of educational opportunity whereby a restrictive admissions policy in higher education would lead to displacement in other sectors of education and

training and to an increasing number of youth with no vocational training at all.[12]

Although the admissions regulations played a minor role in shaping the overall numbers of graduates, the "pressure of the numbers" as regards the supply of graduates turned out to be lower than expected. As already mentioned, this phenomenon became visible for the first time in statistics of the quota of beginner students in the mid-seventies. More details are essential, however, in order to understand the changes taking place.

Until about 1975, the number of beginner students in higher education roughly corresponded to the number of secondary school leavers having entrance qualifications for higher education. While a small percentage of those secondary school leavers did not enrol, there was a small percentage enrolling who had qualified for enrollment by other means (special exams etc.). According to data published by the Federal Ministry of Education and Science (presented in table 1), in 1975 19.4 percent of the corresponding age group had completed secondary education qualifying for entrance into higher education. The corresponding quota of beginner students in the same year was 19.5 percent.

These statistics show that the percentage of qualified secondary school leavers was 22.0 percent in 1980, and had substantially increased to 28.7 percent in 1984; choices of types of schools and courses by pupils completing primary school led to estimates of a likely increase to 36.8 percent in 1989.[13] On the other hand, the percentage of beginner students at institutions of higher education was estimated as 19.1 percent in 1980 and 20.6 percent in 1984. Expansion continues to take place in advanced sectors of secondary education, but an increasing proportion of secondary school leavers qualified for entrance to higher education either defer this transition or do not enroll at all.

Annual surveys indicate that the percentage of secondary school students in their final year who intend to enroll at institutions of higher education dropped from 79 in 1975, to 59 in 1985; during the same period those who were not intending to enroll increased from 9 to 16 percent. The highest increase can be observed among those who were not certain whether to proceed to higher education: their share increased from 12 to 25 percent.[15]

Table 1 Qualified Secondary School Leavers, Beginner Students and Graduates 1975 - 1995 (absolute numbers and percentages*)

Year	Qualified secondary school leavers		Beginner students		Graduates	
	In 1,000	Percentage	In 1,000	Percentage	In 1,000	Percentage
1975	175.0	19.4	166.6	19.5	117.3	13.7
1980	221.7	22.0	195.0	19.1	123.7	14.3
1984	302.5	28.7	221.3	20.6	137.3**	14.8**
1990	247.1	35.8	218-247	27-30	191-203	18-19
1995	191.1	32.2	168-192	27-31	179-202	20-22

Source: Based on Bundminister fuer Bildung und Wissenschaft: Grund- und Strukturdaten 1985/86. Bonn 1985, pp. 63, 65, 116, 122, 164; Harald SCHOMBURG and Wolfgang STEUBE: "Materialien zur Hochschulpolitik," in Martin BAETHGE et al. (eds.): Studium und Beruf. Freiburg: Dreisam 1986, p. 258.

* Percentage of qualified school leavers (Hochschulreife, Fachhochschulreife) among 18 years old population; percentage of beginner students among average of 19-21 years old population; percentage of graduates among average of 25-27 years old population.

** Data refer to 1983.

It has become increasingly difficult to estimate how many school leavers finally transfer to higher education, because there is an increase in the numbers of those who decide very late. Whereas in 1975, 73.0 percent of beginner students had completed secondary education either in the same, or in the preceding year, this percentage was only 57.0 percent in 1982.[16] On the basis of follow-up surveys it was recently estimated that the percentage of qualified secondary school leavers finally transferring to higher education will drop from 83 percent in the case of the school-leaver cohort of 1976, to 69 percent of those who left school in 1983.[17]

A considerably high number of school leavers who are qualified for entrance to higher education in fact opt for vocational training. According to

the afore-mentioned survey, 29 percent of the 1980 cohort reported 4½ years later that they had followed vocational training schemes. About a third of those (9% of the qualified school leavers) also enrolled at institutions of higher education, mostly after completion of vocational training. Some, however, did not complete vocational training before entering higher education, while others enrolled during the course of their vocational training.[18]

One has to take into consideration, however, that this changing trend by qualified school leavers cannot be interpreted solely as a response to perceived labour market conditions. For among the growing number of youth opting for advanced secondary education there is certainly an increasing number who never even consider this choice as an option for higher education. There has been a relative decline in financial aid for students since the mid-seventies, both in terms of a decrease in the percentage of recipients of student aid as well as in the proportion of students covered by scholarships.[19] Finally, in 1983, the system of financial aid for students was changed from a mixed grant-loan scheme to a loan scheme.

In addition to these changes in access to higher education, the number of college graduates heading for the labour market turned out to be lower than expected as a consequence of changing study behaviour:

- First, the period of study for concluding a course program increased. In the case of university courses leading to a diploma or masters, the average study period in the respective field of study of those graduating in 1974 and in 1979 was 11.4 semesters and, finally, 11.8 semesters for those graduating in 1984.[20]
- Second, the percentage of university graduates continuing their studies - who enroll in another field of study, taking advanced courses or heading for a doctoral dissertation - increased substantially in recent years. According to an expert's assessment of available data, this percentage rose from about 10 percent in the late 70s to about 16 percent in 1982.[21]

It is not possible to establish clearly to what extent the overall prolongation of the average period enrolled at institutions of higher education is due to such elements as the increasing requirements or organization deficiencies of programs; the growing importance of additional qualifications on the labour market; the need of students to earn money to cover their expenses or, finally, a waiting period in the face of the labour market problem which is disguised by the formal status of "student". According to a survey

conducted in 1984, about a fifth of all graduates seem to have spent some period being formally enrolled but not actively studying.[22]

Altogether, the number of successfully completed final examinations at institutions of higher education in the Federal Republic of Germany increased moderately according to the available statistics of the Ministry of Education and Sciences's, these increases were from 117.300 in 1975 to 137.700 in 1983. These data indicate an increase of graduates among the corresponding age group from 13.7 to 14.8 percent.[23] If one takes statistics supplied by the Science Council (excluding doctoral degrees of persons who were previously deferred first degrees, and also graduates of Fachhochschulen of public administration which had been upgraded in the late 1970s), the number of graduates increased from 101,300 in 1975 to only 111.000 in 1984; their quota of the corresponding age group declined slightly from 11.9 to 11.6 percent.[24]

In summing up these findings, we note that one could have expected considerable increases in the quota of college graduates among the corresponding age group from 1975 until now as a consequence of the expansion of advanced secondary education in the respective preceding years. What emerged though, was a stagnation of the quota of graduates. For among the qualified secondary school leavers

- some decided definitely not to proceed to higher education,
- some opted for vocational education and postponed their decision of whether or not to go on to college having experienced other avenues of learning, and other occupational areas,
- also, some students choose waiting periods prior to enrollment or learning, or waiting periods in higher education before they graduated,
- finally, some students continued their studies beyond a degree.

Experts agree that the stagnation of the graduate quota which has come about in spite of the expansion of advanced secondary education was primarily caused by changing views of youth in terms of labour market opportunities: the content and meaning of future work as well as their talents and inclinations. It is, of course, true that public debates on these issues might have had some influence in shaping the viewpoint of present-day youth. Measures such as restricted admissions to some fields of study, the relative decline in financial aid for students, and measures regarding the capacity of institutions of higher education, also had an impact in this direction. There are dissenting views about the weight of such measures, but obviously the stagnation of the

graduate quota is not predominantly caused by direct steering measures.

In order to avoid misunderstanding we must assert that the stagnation of the graduate quota since the mid-seventies, or thereabouts, might well have alleviated tensions in the labour market but it has certainly not led towards a smooth transfer of graduates to the occupation system. As will be discussed later, many graduates have faced employment problems in recent years. Above all, available data suggests that the percentage of graduates within the overall labour force is going to increase substantially in the coming years.

4.2 Institutional Structure, Courses and Curricula

As already mentioned, many politicians and planners in the Federal Republic of Germany considered the introduction or expansion of short courses in higher education to be the most important response to the expansion of higher education, and to the expected changes of employment and work assignments of graduates. The upgrading of former engineering schools and higher vocational schools to Fachhochschulen in 1971 was a step in this direction; also, some proponents of Gesamthochschulen hoped that a comprehensive pattern of higher education would attract more students to settle finally for degrees indicating the completion of short study programs.

In 1970 the Science Council predicted a gradual increase of the share of beginner courses enrolling in short courses (about a three year program) from 26 percent in 1971 to only 29 percent in 1975, and to 62 percent in 1980.[25] The Science Council is the highest consulting body for higher education in the Federal Republic of Germany; it assumed that a change of institutional and course structure could be implemented in the first half of the 1970s which would lead to such far-reaching changes in enrollment. It had become clear by 1976 that the implementation of structural changes was more complicated than anticipated and the Science Council set a new moderate target of 45 percent beginner students for short courses in 1985.[26]

If we take the definition of higher education as it was legally determined in the early seventies, the percentage of beginner students at Fachhochschulen among all beginner students in higher education increased from 25.6 percent in 1975 to 27.2 percent in 1984. These data do not suggest a general increase of the popularity of non-university level higher education among students.

Rather, they are a surprisingly small by-product of a decreasing popularity of teacher training courses not represented in Fachhochschulen on the one hand, and the increasing popularity of engineering and business subjects which are strongly represented in Fachhochschulen, on the other hand. If we include students at the newly established non-university institutions for higher education for public administration, the so-called Verwaltungs-fachhochschulen, the total share of beginner students in both types of Fachhochschulen among all beginner students increased from 26.3 in 1975 to 30.2 percent in 1984.[27]

In the same period, the percentage of beginner students enrolling at comprehensive universities and finally graduating with a short-cycle degree, probably remained more or less constant at about 2 percent of all beginner students. Finally, there was a drastic decline in the percentage of beginners in teacher training courses for primary schools and the main track of lower secondary schools. Thus, altogether, the share of beginner students in courses which are shorter than regular university courses, remained about constant at somewhere above 35 percent from the mid-seventies to the mid-eighties.

There have been many proposals to increase the share of short-cycle courses. As it became obvious that Fachhochschulen were unlikely to expand correspondingly, the Science Council recommended in 1976, and again in 1978, the introduction of short university courses alongside traditional university courses. During the same period, the model of a comprehensive university lost its earlier broad political backing. This was partly due to the resistance of the universities, and partly to the spreading rumours that comprehensive universities do not work as "cooling-out" devices, but rather encourage students to strive for university-level degrees. In the early 1980s several prominent persons responsible for higher education policy suggested the introduction of a stage model of courses similar to the bachelor, masters and doctor degrees in Anglo-saxon countries, or the "two-stages" model introduced in the Netherlands at that time. Finally, the Federal Ministry of Education and Science since 1983 has advocated a diversification of the higher education system in general.

But apart from the establishment of colleges for public administration[28] for those already under contract in the public sector, all such efforts for structural change since the mid-seventies have not led to any changes of the system.[29]

A second, and frequently discussed major change in the higher education system which took place in response to labour market requirements, is the pattern of fields of study. This issue is closely related to access and admissions, because the quantitative development of selective admissions fields might be a direct outgrowth of admissions policies. This aspect is, of course, also greatly influenced by students' choices at the moment of transfer from secondary to higher education. On the other hand, it reflects measures of personnel and other resource allocations in higher education as well as policies to promote certain types of degree courses.

As table 2 indicates, changes in the percentage of students by major disciplinary groups did not occur rapidly. Around 1980, some employers and conservative politicians claimed that a negative attitude among reformist teachers towards technological progress had led to a decline in engineering students,[30] but both surveys on secondary school students' attitudes and options,[31] as well as the enrollment statistics, show that there were no substantial changes over time in the number of persons entering the humanities and social sciences, engineering, and medicine. The most striking change is the decline in the number of students enrolling in programs leading to the state examination for teacher training: the shift here is from 29.0 percent in 1975 to 12.2 percent in 1985. Many students now choose humanity courses leading to a "Magister" degree but, according to available surveys, job prospects for these graduates are very bleak. One might therefore summarize that changes in the labour market for graduates since 1975 have not led to substantial changes in the selection of fields of study: there has been no increase in "vocational" or "professional" options for students.

Changing job prospects have affected the program and curricular approaches at many institutions of higher education more strongly than the institutional pattern, or the distribution by field of study. There are, however, divergent views among experts about the extent to which curricular changes have taken place in this respect. A divergence of opinion is not surprising because it is very difficult to measure and assess curricular changes; additionally, the curricular changes implemented obviously fall far short of the reform programs envisaged in the 1970s.

Table 2 Field of Study of Students at Institutions of Higher Education 1975, 1980 and 1984 (percentage)

Field of study	1975	1980	1984
Humanities	26.8	24.9	22.5
Social sciences	23.2	26.0	26.9
Natural sciences	16.6	15.3	15.3
Engineering	19.4	17.9	20.2
Medicine	6.7	8.0	7.6
Agriculture	2.2	2.7	2.6
Fine arts	5.1	5.1	5.1
Total	100.0	99.9	100.0
(Absolute number, in 1,000)	(841)	(1,044)	(1,314)
Students enrolled in teacher training	29.0	20.5	12.2

Source: Based on Bundesminister fuer Bildung und Wissenschaft: Grund- und Strukturdaten 1985/86. Bonn 1985, pp. 128-130.

The Framework Act of 1976 explicitly stated that institutions of higher education ought to prepare students for "berufliche Taetigkeitsfelder" (areas of occupational practice), conceived as larger sections of the occupational system than a given, narrow occupational category. The Framework Act also called for the establishment of study reform commissions, in which representatives of institutions of higher education, government, and the occupational system, cooperate in recommending principles of reforms for course programs, thereby taking into consideration changes in the occupation system.[32]

Already during the late 1960s there was growing criticism about the

universities' lack of orientation towards practice. The accusations about the "ivory tower", the professors, etc. seemed quite homogeneous at first glance, but there were obviously some quite different views. Strong criticims was, for example, volced by students, junior staff and some professors that the fragmentation of knowledge and the lsolation of the university from its surroundings had destroyed any comprehensive understanding, and any sense of social responsibility on the part of the scholar. Some people claimed that universities in terms of scientific-technological innovation, were falling more and more behind specialized research institutes and industry, nor were they sufficiently able to adapt themselves to changes in the qualification requirements of the employment system. Employers frequently argued that students were not sufficiently prepared for working life and that universities did not care enough about the social skills of students. There was a widespread belief that the expansion of higher education would increase the percentage of graduates who would not follow any kind of scholarly or research position. Since in the past the university predominantly tended to train and socialise scholars it was necessary to revamp higher education to prepare students for other kinds of jobs.

Two further arguments were important in the seventies. Firstly, there was a growing concern about the flexibility of graduates. As it seemed to become more and more difficult to establish a quantitative match between the number of graduates in certain areas on the one hand and the number of corresponding job openings on the other, and as graduates had to face significant changes of job tasks in their working life, it was felt that students should be more flexible. But this was to be achieved without turning to knowledge of such a general nature that they would be helpless in taking up certain assigned positions. Secondly, there was considerable debate about the similarities and differences of goals of the universities on the one hand, and the Fachhochschulen on the other. In the early seventies arguments in favour of minimizing the differences were quite popular: stressing more strongly an orientation towards practice in the universities and strengthening the scholarly basis of the Fachhochschulen. The idea of the integrated comprehensive university obviously meant avoidance of too much of a difference between the goals of the different institutions of higher education. In the late seventies,

however, there was growing concern about a loss of what might be called the identity of Fachhochschulen and of an over-production of academically-oriented young people. It now became the aim to preserve and foster the distinct goals of different types of institutions of higher education.

A stronger "orientation toward practice" (Praxisorientierung) of study programs was a frequently stated goal of curricular reforms. This did not mean a strong "vocational" emphasis, but a teaching and learning process whereby typical tasks and problem-solving in graduates' jobs would be addressed and systematically confronted with theories, methods, and ways of problem-solving in the domain of knowledge and research. This could be realized in anticipating the occupational practice in regular lectures and seminars, or in additional arrangements for directly addressing occupational practice. Typical means of the latter were:

- "Wechsel der Lernorte" (shifting the locations of learning) means emphasizing a "dual" system of learning in higher education, whereby students spend some time in work places. There are a number of divergent models for coordinating learning experience at college and at the work place.
- "Einphasige Ausbildung" (single phase education and training) is the integration of the two phases of training for teachers, lawyers, doctors, etc. Instead of having first a university education, followed by about 2 years of preparatory practical training supervised by the employer (in most cases the government), new models aim to integrate academic education and professional training.
- The introduction of courses at higher education institutions was suggested which offer information for students on working life, labour market conditions, etc.
- In some cases the creation of new areas of study has been realized, which take into account new job tasks or roles.
- "Projektstudium" (learning by projects) requires students to join working groups in order to explore and solve complex interdisciplinary and, at the same time, practical problems.
- Incorporating or stimulating occupational experiences in class, for example, through excursions, games, etc. is a further approach.[33]

Curricular innovations of this kind meet with mixed responses. On the one hand private employers criticized the universities' lack of regard for the occupational system, and on the other hand, they did not fully support curricular efforts to strengthen "orientation toward practice". There were various reasons for this situation, among them is the fact that curricular experiments also intended to contribute to substantial changes in the occupation system. The majority of public employers decided to discontinue "single phase education and training" models. These employers obviously favoured having undivided control of initial professional training rather than accept cooperation with universities in the form of merging study and initial professional training. The majority of university representatives claimed that such curricular reforms weakened the quality of learning.

Generally speaking, there is justification for stating that the employment problems of graduates exerted pressure on the institutions of higher education to conceptualize and implement curricular reforms. Alternatively, however, criticism of the educational and organizational reforms in the early seventies gained momentum around 1980. There was strong resistance among the majority of university professors to cooperating with representatives of government and the occupation system in the framework of study reform commissions.[34] The growing concern for quality in education served as an argument for justifying the traditional scholarly approach which was not prepared for an "orientation towards practice". Thus, curricular approaches which are neither solely disciplinary-centered, nor just adaptive "vocationalism," remained the exception rather than the rule.

Some changes in higher education which are important for the relationship with the occupational system are even more difficult to establish than those of curricular change. There are at least two aspects which should be mentioned in this respect. First, a temporary emergency policy was introduced to cope with the demographic bulge which led to many constraints on the resources of institutions of higher education. The most visible of these is the increasing student-professional staff ratio from 11:1 in 1975, to 14:1 in 1984.[35] It is perhaps justified to assume that, ironically enough, the higher education system responds to the employment prospects less through deliberate change than through the unintentional reduction of quality which

matches the fact that a growing share of graduates is forced to settle for less demanding jobs.

Second, the changes of motivation and aspirations among the students might have an important impact on the qualifications which they finally acquire upon graduation. Around 1980, many experts claimed that a dramatic collapse of students' motivation could be observed as a consequence of deteriorating job prospects.[36] Recent surveys show, however, that the majority of students accept relative status losses, and that many who are following fields of study whose graduates are faced by the employment problems remain fairly optimistic about finding opportunities to make use of their qualifications.[37] Table 3 shows, for example, the case of social work. However, this does not imply that students simply adapt to changing employment prospects. Much research has been carried out to investigate the growing problems of students and, of the various findings, it is worth mentioning that psychological problems are far more widspread among students who anticipate considerable problems in finding employment.[38]

4.3 Transition from Study to Work, Absorption of Graduates and Changing Assignments

As already pointed out, analysis shows the impact of discrepancies between the supply of graduates and presumed manpower demands in terms of changes

- of the transition from study to work,
- of the absorption of graduates through substitution and other means which do not basically change the occupation system,
- "push" effects of the high supply of graduates leading to innovations in the organiztaion of work, job assignment etc.

The available sources do not allow us to make clear-cut distinctions in this respect, however. For example, unemployment, and temporary jobs unrelated to one's study which are being taken up by recent graduates might indicate either transition problems, or permanent changes of employment. The fact that graduates are accepting jobs previously held by non-graduates might be an absorption phenomenon in the short-run which could lead to a long-term systematic change in the utilization of manpower. With this in mind, it will be useful to present various findings about the labour market and job assignments

of graduates here in one section, and utilize the above mentioned analytical framework for the interpretation of those findings.

In the first place, we can safely state that many more graduates found gainful employment than might have been expected in view of the pessimistic forecasts made in the mid-seventies. According to the census and microcensus data available - data in table 4 partly refer to the labour force and partly to persons employed - the number of employed, or self-employed, college trained persons was

- about 1.38 million in 1970 (quota of 5.2 percent),
- about 1.84 million in 1976 (7.2 percent),
- 2.31 million in 1982 (8.6 percent).[39]

Table 3 Job Expectations Held by Students - Survey Conducted during Periods of Final Examinations 1983-85 (percentage)

Job expectations	Fields of study		
	Mechanical engineering	Social work	Business/ economics
a. Opportunities to find employment			
Good	38	5	46
Fair	60	62	51
Little/no	3	33	3
	100	100	100
b. Expected utilization of qualifications acquired (2 years after getting employed)			
Dominant	7	15	11
Partial	70	58	61
Little or no	17	17	24
I cannot imagine yet	6	10	4
	100	100	100
c. Expected position (2 years after getting employed)			
Appropriate	50	33	61
Almost appropriate	13	11	13
A position not considered appropriate, but acceptable to me	14	23	16
Inappropriate and not acceptable	1	3	1
I cannot imagine yet	21	30	10
	100	100	100

Source: Ulrich TEICHLER et al.: Hochschule - Studium - Berufsvorstellungen. Bad Honnef : Bock 1987.

Table 4 Educational Attainment of Labour Force 1961-982

Year	Total (in 1,000)	University-trained (in 1,000)	Quota	Fachhochschule-trained (in 1,000)	Quota
1961*	26,527	773	2.9	.	.
1970*	26,610	1,002	3.8	394	1.5
1976**	26,696	1,305	4.9	581	2.2
1982***	26,774	1,591	5.9	718	2.7

Source: Based on Bund-Laender-Konferenz fuer Bildungsplanung und Forschungsfoerderung: Kuenftige Perspektiven von Hochschulabsolventen im Beschaeftigungssystem. Bonn 1985, mimeo., table 1.

* Census data unemployed persons included
** Microcensus data, unemployed persons included
*** Microcensus data, unemployed persons excluded

More detailed data suggest that graduate employment continues to increase in both public and private sectors. Non-profit organizations, and other less formally structured organizations than the public core administration, and major production and trade organizations, seem to be a relatively fast growing labour market for graduates.[40]

Employment opportunities for graduates also proved to be more favourable than predicted in the most problem-ridden sectors, notably the teaching profession. In 1977, when the total number of school teachers in the Federal Republic of Germany was 537,000, the Federal-State Commission for Educational Planning and Research Promotion (BLK), predicted a total of employed teachers of 485,000-560,000 for 1985, as opposed to a total supply of 616,000-708,000 persons trained, and seeking employment as school teachers. The mean score for the expected over-supply was 139,000.[41] In 1985, the Federal employment agencies registered 29,000 unemployed teachers, and the teachers' union GEW estimated the figure of unemployed teachers (including those taking up other jobs on a temporary basis), 60,000.[42] Unemployment

turned out to be less than expected, partly because of changes in students' course choices, partly because of the transition of some graduates to other areas of employment, but also partly because the responsible authorities established, or retained, more positions for school teachers under conditions of declining age cohorts and fiscal constraints than they would probably have done had there been no pressures imposed by too great a supply.

In 1975, the registered unemployment quota was 1.5 percent for university-trained persons, 3.2 percent for short-cycle graduates, and 4.4 percent for the total labour force. In 1984, the corresponding figures were 4.8, 4.9, and 8.6 percent as shown in table 5. This indicates that graduates lost only a little of their advantage over other persons. It is useful to compare the unemployment ratio of university graduates with those of skilled labour,[43] for it becomes clear that the general visible trends do not confirm the frequent argument that the labour market is characterized by an over-supply of graduates on the one hand, and a shortage of skilled labour. It is more accurate to state that skilled labour has also faced increasing employment problems in the early 1980s. Thus, the unemployment quotas by type of education and training either challenge the arguments which claim a particularly high graduate over-supply, or at least document the event of a high degree of substitution which was never envisaged by the bleak forecasts of employers in the mid-seventies.

However, it is important to mention that recent graduates have a larger share of all college-trained unemployed than do the new labour force from other types of education and training, even though unemployment amongst recent graduates does not generally continue for very long. The present relatively widespread unemployment among recent graduates therefore only indicates that a period of registered unemployment while searching for one's first job has become a fairly common phenomenon. A survey conducted on graduates from a single university concluded that those graduating in 1977-1981 spent an average of 3.4 months after graduation prior to beginning work for the first time.[44] Given the changes in the labour market since 1981, it would not be surprising is such a period of unemployment was now about 6 months.

Table 5 Quota of Registered Unemployment by Type of Education and Training 1973-1984

Year	Unskilled labour	Skilled labour	Higher vocational training	Fachhoch-schule graduates	University graduates	Total
1973	1.4	0.7	0.6	1.1	0.6	1.0
1974	3.7	1.7	1.0	2.2	0.9	2.4
1975	6.7	3.2	2.2	3.2	1.5	4.4
1976	5.6	3.1	2.7	3.3	1.8	4.0
1977	5.9	3.0	2.6	3.1	2.0	4.0
1978	5.7	2.8	2.4	2.4	1.8	3.8
1979	5.1	2.3	1.9	2.2	1.9	3.2
1980	6.0	2.4	1.8	2.0	2.1	3.4
1981	9.5	3.4	2.4	2.9	2.8	5.1
1982	13.8	5.1	3.5	4.2	3.6	2.3
1983	12.4	5.9	4.3	5.0	4.5	8.6
1984	18.7	5.9	4.2	4.9	4.8	8.6

Source: Bund-Laender-Kommission fuer Bildungsplanung und Forschungsfoerderung: Kuenftige Perspektiven von Hochschulabsolventen, Bonn 1985, mimeo., Uebersicht 6 (data refer to September in respective years).

To assess the effects of increased numbers of graduates on the transition to work and the job assignments, one would need regular surveys over time in order to measure historical changes. Certainly hundreds of surveys have already been conducted on graduate employment since the early seventies,[45] but they differ in approaches and target-groups (single fields, institutions of higher education or occupation, certain areas etc.) to such an extent that it is impossible to establish any sort of time series from the data available. Only surveys addressing heads of personnel offices, or other representatives of private industry and service firms, attempt to analyze historical change in this context. Respondents were asked in some cases to describe retrospectively changes of personnel policies, recruitment criteria and the quantity of graduate recruitment.

One survey conducted under the auspices of the Federation of Employers' Associations in the early 80s concluded that private enterprise had recruited many more graduates than could have been expected according to the forecasts of the mid-seventies based on employers' surveys. The respondents themselves could not provide any conclusive explanation for this change. Neither did they believe that the demand for graduates had increased considerably, nor even that there had been any substantial change in recruitment policies; almost all denied that the recruitment of graduates was superfluous in terms of qualification level and only recruited because of the changing supply.[46]

In a similar survey in 1981/82 we asked heads of personnel divisions of large firms to describe the changes in recruitment criteria and procedures. The results of this survey showed that few firms seem to recruit more graduates because of the high supply of graduates. Respondents frequently stressed that higher levels of education are sought for vacant positions because of gradual changes in job requirements. For example, one respondent stated that university-trained engineers substitute short-cycle engineers because the latter might be qualified to solve the technical problems of a given job, but only university-trained engineers are, as a rule, able to respond to the growing demand for communicating these solutions by means of written explanations etc. This survey indicated that most respondents did not see any substantial changes in recruitment over the last few years. The two most frequent changes mentioned were an increased concern about personality and social skills, and about the readiness of applicants to accept regional mobility.[47] Attention to personality and social skills might well be seen as a change of criteria due to high supply: If there are many applicants who satisfy the cognitive standards and professional expertise of a job, the firm might be more selective in terms of additional criteria. Most respondents, however, stressed that it was the changes in the jobs themselves, and not the changing supply, which have led to modifications of recruitment policies in this respect.

The second change is surprising. Although it is frequently claimed that a readiness to accept regional mobility is declining in the Federal Republic of Germany, one could have expected that graduates whose bargaining power in the recruitment process has diminished over time due to the high supply, would be willing to accept conditions set by the employers. But firms continue to

come across graduates who turn down offers of employment in spite of the tight labour market conditions. This concurs with one interesting essay which cites also graduates in other fields who face even more serious labour market conditions, who are not ready to accept just any job, but rather maintain certain yard-sticks because the generally deteriorated conditions for graduates have rendered waiting periods, temporary employment etc., less threatening.[48]

In another survey of large private industrial concerns and service industries representatives were asked to give their reactions to, and reasons for the present tendency to employ graduates. Among the reasons given for graduates being recruited for jobs previously held by non-graduates, 80 percent refer to the changing job requirements, or useful competencies of graduates. As table 6 shows, only 17 percent of the statements refer to the consequences of the market situation: In cases of doubt, one would choose a graduate given the high supply; the expansion of education has led to a smaller pool of talented people with no degree from an institution of higher education.

Employment problems have led to a "second labour market" for graduates in the Federal Republic of Germany since the mid-seventies. Some graduates have decided to work in an "alternative" economy understood to be a challenge to both the products and services, as well as to the modes of production and working conditions prevailing in society; some work under conditions which are sometimes known as the "grey labour market" which are, in terms of wages, working conditions, continuity and social welfare, below the standard of the regular labour market; some choose "self-employment" with no short-term chance of achieving an income and working conditions similar to those of well established graduates.[49] There are no exact figures of how many graduates are active (at least for some period after graduation) in areas, or under conditions, which might be called the "second labour market." Given the various reports and surveys, about 20 percent might be an appropriate estimate. Of course, it is not yet possible to estimate how many graduates might continue to work in such a sector for long periods of their working life.

Given the Federal Republic of Germany's tradition of a close correspondence of field of study on the one hand, and occupation on the other,

employment problems are especially grave for graduates in fields which allow no easy vertical substitutions. Whereas graduates in economics and business are absorbed into middle-level positions, the problems teacher training graduates face are the very limited chances of employment in public administration, or in private industry and commerce.[50] Second, employment problems are grave for graduates in fields which do not prepare them for certain established occupations, fields such as sociology, political science etc. Large numbers of graduates in these fields turn to the "second labour market,"[51] although some experts claim that also graduates from law and some other traditionally well established areas are facing similar problems in increasing numbers.

Table 6 Reasons Stated by Representatives of Large Firms for Recruiting Graduates instead of Non-Graduates (percentage of reasons named)

Reason stated	Percentage
1. Due to changing job requirements (increasing demand for analytical and strategic skills, modern planning and operation techniques, new technological developments)	60.4
2. Due to changing patterns of skills needed (higher education level reduces period of initial training, leads to increased flexibility etc.)	18.9
3. Due to changing supply (in case of similar compentences, graduates will be preferred etc.)	12.6
4. Declining standards of other educational routes (talented youth opt now for higher education, talented practitioners were not available etc.)	4.5
5. "Spiral-effect" of educational expansion (since clients and partners tend to employ more graduates, we have to follow the same route etc.)	3.6
Total	100.0

Source: Georg von LANDSBERG: "Personalwirtschaftliche Reaktionen privater Wirtschaftsbetriebe auf die Zunahme von Bewerbern mit Hochschulabschluss," in M. KAISER, R. NUTHMANN and H. STEGMANN (eds.): Berufliche Verbleibsforschung in der Diskussion. Materialband 3. Nuernberg: Institut fuer Arbeitsmarkt- und Berufsforschung der Bundesanstalt fuer Arbeit 1985, p. 151.

It certainly would be misleading to conceive the phenomena discussed here only as indicators of under-employment of graduates. The "alternative" sector - according to a survey, about 40 percent persons working in this sector are graduates from institutions of higher education[52] - addresses changing values and needs. Many graduates working in this "second labour market" enter new forms of social work, legal advice for clients who may otherwise be neglected, the production of new products etc., and thus fill a gap in the production and service industries which is overlooked on the "first labour market." Thus may the rigidities of the established occupation system create a segmented sector for trial and error innovation rather than the gradual differences visible under the more flexible conditions in other countries, such as the U.S.

Several surveys on Germany students and university graduates have indicated that most of them emphasize the content and function of their occupation, and a close relationship between content of study and work. Many of them accept temporary or permanent losses in terms of occupational status in order to fulfill such goals.[53]

As regards graduates who gain employment immediately, or soon after, graduation, it is not possible to get a very clear picture about changes in positions, income[54] and utilization of their qualifications.[55] Only a minority seem to be employed in positions which are obviously lower than those traditionally expected, whereas for the majority there are only at most small losses compared to the traditional privileges of graduates. There are some examples of the "push" effects of graduates on changes of tasks and division of labour, but research does not provide sufficient information on the extent to which such phenomenon occur.

In summing up the changes in transition from study to work, graduate employment, and work assignments due to educational expansion, we can observe that there is no dominant phenomenon of an adaptation problem, or innovation, but there are a variety of coexisting "solutions": "Buffers" of extended waiting and search periods, work considered to be transitory, "alternative" work, unemployment, vertical substitution, gradual change of presumed demand for graduates, new kinds of typical jobs for graduates as well as new demanding assignments for graduates, have developed as a consequence of high supply. It is not possible to establish exact quantities, but

the broad range of consequences challenges both very optimistic and very pessimistic views about the consequences of the expansion of higher education.

4.4 Changing Relationships between Higher Education and the Occupation System in the Late Seventies and Early Eighties: a Preliminary Conclusion

Available information indicates that the possible discrepancies on the labour market between high supply of graduates due to educational expansion on the one hand, and the slow growth of demand for graduates - according to traditional notions of demand - did not lead to any single major conflict area, adaptation strategy, or any other single dominating phenomenon. The result - neither satisfying for those who set high hopes on educational expansion, nor for those fearing detrimental consequences, nor even for those who believe in major single factors shaping societal developments - is that a variety of changes occurred dividing the effect in such a way that one can hardly point out a small list of "major" effects: rather

- some decline of intentions of qualified secondary school leavers to enrol,
- some access and admissions policies discouraging enrollment,
- some "buffers" of extension of study as well as waiting periods before and after study,
- some changes of the structure of the higher education system, choice of field of study, curricula and study behavior,
- some phenomena of unemployment and under-employment,
- some new types of employment such as 'alternative' work does not fit into old systems of assessing graduates' work,
- some gradual change of regular graduate employment and changing views on appropriate employment,
- some innovation in work and organization of work due to the high supply of graduates.

An appropriate account of all the changes is not yet possible because long-term effects have to be taken into consideration. In comparative perspective we observe that adaptation processes to the increased number of graduates were more complicated in the Federal Republic of Germany than in many other countries, both for the education and the occupation system. It would not be justified, however, to point only at the conflicts and hardships of the difficult adaptation due to characteristics of higher education and the

employment system in the Federal Republic of Germany. In addition, it is interesting to note that the traditional emphasis on a close relationship between higher education and work assignments kept alive hopes among the majority of students that their learning at institutions of higher education will remain important for their assignments under difficult labour market conditions. It also led to an attitude to accept a certain degree of status loss for retaining this relationship between the content of learning and work. This might contribute to long-term active influences of higher education on the occupation system.

These findings do not, however, confirm political views whereby one might rely solely on the "invisible hand" of gradual adaptation processes. Under the given uncertainties stuudying is a burden for many students. Labour market problems might be less severe than some predicted, but this is not just a negligible phenomenon. Finally, scenarios about societal needs neglected by the current employment system point out many important possible changes of the occupation system, and a fundamental need for a high number of qualified manpower.[56] Active employment strategies seem to be indispensible for reducing the problems of those who are negatively affected by the existing problems in the higher education-occupation relationships. They are also required in order to utilize the potentials of the educational expansion.[57]

5. The "Crisis of the Work Society" and "New Technologies": Factors Basically Changing Higher Education - Occupation Relationships?

The debates in the Federal Republic of Germany during the 1980s on the relationships between higher education and employment gradually changed their focus. On the one hand, the debate on the issue of presumed over-qualification lost some momentum as signs of gradual adjustment became evident. On the other hand, two further issues were frequently discussed: The impact of high unemployment and lack of organized work, and the issue of new technologies.

Registered unemployment in the Federal Republic of Germany increased from an annual average of about 5 percent in 1980 to more than 9 percent in 1984. High unemployment seems to have become a more or less permanent phenomenon in spite of various measures such as reducing weekly working hours, early retirement, change of registration and in spite of some

indicators of economic growth. Many social scientists claim that work is gradually losing its overall dominant impact on society, but the occupation system and the education systems have proved to be very slow in coping with the changing conditions.[58]

It is, of course, very difficult to predict future development. As far as the early 1980s are concerned, the information available does not support the view that the assumed "crisis of the work society" has changed the higher education-occupation relationship fundamentally. Graduate unemployment increased proportionally to the growing unemployment of non-graduates. There is neither an emergence of a more or less perfect split between the conventional labour market on the one hand, and a "second labour market" on the other, nor does the shortage of organized work begin to dominate labour market policies and educational policies. The shortage of organized work rather adds to problems which already existed.

Although we are not yet sure whether the system of work and its role in society will undergo fundamental changes, the shortage of organized work has become such an important phenomenon, that higher education will contribute to increasing problems of graduate employment unless these changing conditions are taken into consideration. One could imagine that higher education would respond to this situation by emphasizing qualifications needed in order to create new work. Such a response would require the development of vision about societal needs which are now adequately served by the present employment system, and to foster the corresponding qualifications. On the other hand it is obvious that graduates can no longer count on the established organizations of the employment system as a reliable agent for transforming new needs into organized work. Perhaps the graduates themselves might also be compelled to find innovative ways in the organization of work and universities could be of help in fostering students' competencies to cope with organizational matters involved.[59]

New technologies have undoubtedly affected higher education in the Federal Republic of Germany in many respects during the last few years.[60] "Informatics" as a field of study grew quickly. The requirement for engineering students is frequently stressed. The promotion of research is more strongly emphasized in higher education policies. The use of computers has spread to almost all fields of study.

But again, one might raise doubts as to whether these trends and policies

have played a more important role than just a tendency to additional modifications. Projections about a growing demand for engineers have remained controversial.[61] For example, it is not yet certain whether curricular concepts will change basically. If, in fact, emphasis on general cognitive skills rather than fairly specialized education was the overall need of the growing role of 'new technologies,' the German system of education would be challenged strongly because of the weight it has traditionally placed on fairly specialized and direct preparation for an occupation.

The concern about the future role of 'new technologies' has, however, already changed the general climate of debates on education and its relationships to the occupation system to some extent. Whereas for many years the dominant concern seemed to be about "over-education", and pessimism about educational expansion dominated, now there is a vague feeling which is gathering momentum, that a high level of education among many might be needed in order to cope with future challenges.

Given the state of affairs discussed in this chapter, I expect the debates, and the quest for new solutions, on the relationship between higher education and the occupation system to continue to be focussed on the effects of educational expansion. The lack of organized work and accompanying unemployment, as well as new technologies, will be considered as additional factors rather than central factors which require great attention. These new challenges have not yet changed the relationships between higher education and employment fundamentally and do not seem likely to do so in the near future. However, statistical trends and projections indicate that the percentage of university graduates among the new labour force is likely to increase dramatically in the coming years. The demographic bulge of births around 1964 did not have the effect in the 1970s of increasing percentage of graduates among the labour force in spite of rising absolute figures. The reason for this was that the demographic bulge reached during that period the age cohort of school leavers with no college degree. As opposed to it, during the 1980s and early 1990s one can predict a considerable increase in absolute numbers of graduates and an even faster increase in percentage, because the demographic bulge will reach the typical age groups of those graduating from college whereas the absolute number of other new members of the labour force will be declining. On the basis of available statistics and projections I

have estimated that graduates of institutions of higher education made up 14 percent of the potential new labour force both in 1970 and 1985, but is likely to increase to 22 percent in 1995.[62] Thus, the major consequences of the period of rapid expansion in higher education are yet to be expected.

Notes

1 On access and admissions and its relationships to labour market issues see OECD: Policies for Higher Education in the 1980s. Paris 1984; UNESCO/CEPES: Access to Higher Education. Bucharest 1981; Christoph OEHLER, Ulrich TEICHLER and Stefan HORNBOSTEL: "Aspects of Higher Education Planning in Market Economy Systems," in Planning in Higher Education. Bucharest: CEPES/UNESCO 1986, pp. 59-116; PAUL KELLERMANN (ed.): Studienaufnahme und Studienzulassung. Klagenfurt: Kaertner Druck- und Verlagsgesellschaft 1984; cf. also Burton R. CLARK (ed.): The School and the University. Berkeley/Cal.: University of California Press 1985.

2 On structural development and policies see OECD: (ed.): Policies for Higher Education. Paris 1974; The Diversification of Tertiary Education. s'Hertogenbosch: Elsevier 1973; R.A. de MOOR (ed.): Changing Tertiary Education in Modern European Society. Strasbourg: Council of Europe 1978; Harry HERMANNS, Ulrich TEICHLER and Henry WASSER (eds.): The Compleat University: Break from Tradition in Germany, Sweden and the U.S.A. Cambridge/Mass.: Schenkman 1983.

3 Dorothea FURTH: "New Hierarchies in Higher Education," in European Journal of Education, Vol. 17, No. 2, 1982, pp. 145-151.

4 See Gareth WILLIAMS: "Graduate Employment and Vocationalism in Higher Education," in European Journal of Education, Vol. 20, Nos. 2-3, 1985, pp. 181-182.

5 Ernest BOYER and Warren B. Martin: The Role and the Functions of Universities. Country Report: United States of America. Paris: OECD 1985, mimeo.

6 Henry Wasser: "Instrumental versus Disciplinary Curricula: a Comparative Perspective," in European Journal of Education, Vol. 20, No. 1, 1985, pp. 67-72.

7 See the debate on possible effects of educational expansion on the education-employment relationships in Ulrich TEICHLER, Dirk HARTUNG and Reinhard NUTHMANN: Higher Education and the Needs of Society. Windsor: NFER Publishing Co. 1980.

8 See the special issue on "Education and Demography," European Journal of Education, Vol. 16, Nos 3-4. 1981.

9 Cf. the contribution by Ulrich BECK in the forthcoming special issue of Soziale Welt on changing relationships between education and occupation.

10 For a more detailed overview see Ulrich TEICHLER and Bikas C. SANYAL: Higher Education and the Labour Market in the Federal Republic of Germany. Paris: Unesco Press 1982; Ulrich TEICHLER and Bikas C. SANYAL: "Higher Education and the Labour Market," in R. AVAKOV et al. (eds.): Higher Education and Employment in the USSR and in the Federal Republic of Germany. Paris: Unesco, International Institute for Educational Planning 1984, pp. 89-184.

11 See Ulrich TEICHLER: "Federal Republic of Germany," in Burton R. CLARK, op. cit., pp. 45-76.

12 Stifterverband fuer die deutsche Wissenschaft: Bildungsexpansion und Beschaeftigungsstruktur am Beispiel des Abiturientenproblems. Essen 1976.

13 Projections by the Permanent Conference of the Ministers of Education of the States in the Federal Republic of Germany; cited in Bundesminister fuer Bildung und Wissenschaft: Grund- und Strukturdaten 1985/86. Bonn 1985, p. 65.

14 Ibid., p. 116.

15 See the documentation of data on access and quantitative development by Harald SCHOMBURG and Wolfgang STEUBE: "Studium und Beruf - Materialien zur Hochschulpolitik," in Martin BAETHGE et al. (eds.): Studium und Beruf. Freiburg i.B.: Dreisam 1986, p. 258.

16 Bundesminister fuer Bildung und Wissenschaft: Grund- und Strukturdaten 1985/86, op. cit., p. 151.

17 Franz Durrer-Guthof: "Veraenderungen beim Uebergangsverhalten von der Schule in Studium und Berufsausbildung," in Reinhard BADER et al. (eds.): Studenten im Schatten des Arbeitsmarkts. Frankfurt and New York: Campus 1987, p. 134.

18 Ibid., p. 137.

19 See the overview in SCHOMBURG and STEUBE, op. cit., chapter 2.

20 Reiner REISSERT and Harald WELZER: "Uebergang wohin? Ergebnisse zur Studiendauer und Uebergangsphase von Hochschulabsolventen," in BADER et al. (eds.), op. cit., p. 227.

21 Ibid., p. 228.

22 Ibid., p. 230.

23 See table 1.

24 Cf. Wissenschaftsrat: Eckdaten zur Lage der Hochschulen: Stand 1985. Koeln 1985, p. 28.

25 Wissenschaftsrat: Empfehlungen zur Struktur und zum Ausbau des Bildungswesens im Hochschulbereich nach 1970. Vol. 2. Bonn 1970, p. 375.

26 Wissenschaftsrat: Empfehlungen zu Umfang und Struktur des Tertiaeren Bereichs. Bonn 1976, p. 28. For more detailed information on these trends and policies see Ulrich TEICHLER: "Oeffnung der Hochschulen" - auch eine Politik fuer die 80er Jahre? Bremen: Senator fuer Wissenschaft und Kunst 1983.

27 Bundesminister fuer Bildung und Wissenschaft: Grund- und Strukturdaten 1985/86, op. cit., p. 116. In the former data, the beginner students at Verwaltungsfachhochschulen are excluded.

28 See Hans BRINCKMANN, Susanne HACKFORTH und Ulrich TEICHLER: Die Beamtenhochschulen. Frankfurt and New York: Campus 1980.

29 See the overview on structural debates and policies in Ulrich TEICHLER: "Zum Funktionswandel der Hochschulen," in Paedagogik und Schule in Ost und West, Vol. 24, No. 1, 1984, pp. 4-12.

30 Stifterverband fuer die deutsche Wissenschaft: Ingenieursbedarf und Studienmotivation. Essen 1983.

31 Foad KAZAMADEH and Karl-Heinz MINKS: Attraktivitaet des Ingenieurstudiums in der Diskussion - Hintergruende, Einfluesse und Wirkungen. Hannover: HIS GmbH 1972.

32 Bundesminister fuer Bildung und Wissenschaft: Framework Act for Higher Education. Bonn 1976, par. 7-8; see also Bundesminister fuer Bildung und Wissenschaft: Materialien zur Studienreform. Bonn 1977.

33 Ulrich TEICHLER and Helmut WINKLER: "Aufgaben einer Zwischenbilanz zur praxisorientierten Studienreform, " in U. TEICHLER and H. WINKLER (eds.): Praxisorientierung des Studiums. Frankfurt and New York: Campus 1979, pp. 17-18; see also Norbert KLUGE, Ayla NEUSEL and Ulrich TEICHLER: Praxisorientierung des Studiums. Bonn: Bundesminister fuer Bildung und Wissenschaft 1981; Ulrich Teichler: "Higher Education Reforms and Changing Employment Prospects of Graduates," in Guenther KLOSS (ed.): Education Policy in the Federal Republic of Germany. Manchester: UMIST, Department of Language and Linguistics and Association for the Study of German Politics 1985, pp. 69-74.

34 See Norbert KLUGE and Ayla NEUSEL: Studienreform in den Laendern. Bonn: Bundesminister fuer Bildung und Wissenschaft 1984.

35 Based on Wissenschaftsrat: Eckdaten ..., op. cit., p. 25-32. Since these date might include half positions as well as staff financed by research money, the ratio of students-professional staff positions (cf. ibid., p. 33) might be more indicative: it increased from 11:1 to 16:1.

36 See for example some essays in Ulrich TEICHLER (ed.): Hochschule und Beruf. Frankfurt and New York: Campus 1979.

37 See for example Gerhild FRAMHEIN: "Vier und acht Jahre nach Studienbeginn: Erwartungen und Erfahrungen beim Uebergang von der Hochschule in den Beruf," in Manfred KAISER, Reinhard NUTHMANN und Heinz STEGMANN (eds.): Berufliche Verbleibsforschung in der Diskussion. Materialband 3. Nuernberg: Institut fuer Arbeitsmarkt- und Berufsforschung der Bundesanstalt fuer Arbeit 1985, pp. 247-262; Manfred KAISER, Bernhard HALLERMANN and Manfred OTTO: "Fachhochschulabsolventen - zwei Jahre danach," in KAISER, NUTHMANN and STEGMANN, op. cit., pp. 321-353; Karl-Heinz MINKS and Reiner REISSERT: "Berufliche Wertvorstellungen und Mobilitaetsverhalten von Hochschulabsolventen," in KAISER, NUTHMANN and STEGMANN, op. cit., pp. 597-620; Ulrich TEICHLER et al.: Hochschule - Studium - Berufsvorstellungen. Bad Honnef: Bock 1987.

38 Hans Joachim KRUEGER: Psychosoziale Aspekte von Arbeitslosigkeitsbefuerchtung bei Studierenden, paper presented to the Symposion "Hochschulausbildung und Arbeitsmarkt", Dortmund 1986, mimeo.

39 Estimates of unemployed persons in 1970 and 1976 are deducted from the data presented in table 3.

40 See Armin HEGELHEIMER: Beschaeftigte und Hochschulabsolventen in freien Berufen. Koeln: Ludwig Sievers Stiftung 1983; Armin HEGELHEIMER: "Akademikerbeschaeftigung im Wandel," in KAISER, NUTHMANN and STEGMANN, op. cit., pp. 23-46.

41 See Bund-Laender-Kommission fuer Bildungsplanung und Forschungsfoerderung: Prognosen des globalen, des schularten- und faecherspezifischen Lehrerangebots und Lehrerbedarfs bis zum Jahr 1985. Bonn 1977, mimeo.; Bund-Laender-Kommission fuer Bildungsplanung und Forschungsfoerderung: Kuenftige Perspektiven von Hochschulabsolventen im Beschaeftigungssystem. Bonn 1985, mimeo.

42 See Martin BAETHGE, Dirk HARTUNG and Ulrich TEICHLER: "Studium und Beruf - neue Perspektiven fuer die Beschaeftigung von Hochschulabsolventen," in BAETHGE et al., op. cit.

43 See Ulrich TEICHLER: "Zum Wandel von Bildung und Ausbildung in den 70er und 80er Jahren," in Mitteilungen aus der Arbeitsmarkt- und Berufsforschung, Vol. 18, No. 2, 1985, p. 171; cf. also Manfred TESSARING: "Akademikerbedarf im Wandel," in Hans-Peter WIDMAIER (ed.): Das Arbeitskraefteangebot zwischen Markt und Plan. Berlin: Duncker & Humblodt 1983, pp. 251-280.

44 Friedrich BUTTLER et al.: "Hochschulabsolventen beim Uebergang in den Beruf - Absolventen der Universitaet-Gesamthochschule Paderborn 1977-1981," in KAISER, NUTHMANN and STEGMANN, op. cit., pp. 439-468.

45 See the overviews in Dirk BUSCH et al.: Taetigkeitsfelder und Qualifikationen von Wirtschafts-, Sozial-, Ingenieur- und Naturwissenschaftlern. Frankfurt and New York: Campus 1981; Rolf HOLTKAMP and Ulrich TEICHLER (eds.): Berufstaetigkeit von Hochschulabsolventen. Frankfurt and New York: Campus 1983.

46 Claus KEMMET, Hermann LINKE und Reinhard WOLF: Studium und Berufschancen. Herford: Maximilian-Verlag 1982.

47 Ulrich TEICHLER, Michael BUTTGEREIT and Rolf HOLTKAMP: Hochschulzertifikate in der betrieblichen Einstellungspraxis. Bad Honnef: Bock 1984; Michael BUTTGEREIT: "Certificates and Recruitment," in R. AVAKOV et al., op.cit., pp. 224-226.

48 Dirk BUSCH and Christoph HOMMERICH: "Lebensphase und Wechsel von Lebenswelten: Der Uebergang von der Hochschule in den Beruf," in Zeitschrift fuer Sozialisationsforschung und Erziehungssoziologie, Vol. 2, No. 1, 1982, pp. 21-37.

49 Dirk HARTUNG: "Some Manifestations and Implications of Underemployment of College Graduates: The Case of the Federal Republic of Germany," in R. AVAKOV et al., op. cit., pp. 212-216; Cordia SCHLEGELMILCH: "Grauer Arbeitsmarkt fuer Hochschulabsolventen," in Soziale Welt, Vol. 33, Nos. 3-4, 1982, pp. 400-439.

50 See the overview on available services in Rolf HOLTKAMP and Ulrich TEICHLER: Ausserschulische Taetigkeitsbereiche fuer Absolventen sprach- und literaturwissenschaftlicher Studiengaenge. Kassel: Wissenschaftliches Zentrum fuer Berufs- und Hochschulforschung 1981.

51 See for example Dieter GRUEHN: Sozialwissenschaftler in der Grauzone des Arbeitsmarktes. Bielefeld: AJZ Druck und Verlag 1984.

52 Manfred KAISER: " 'Alternativ-oekonomische Beschaeftigungsexperimente' - Quantitative und qualitative Aspekte," in KAISER, NUTHMANN and STEGMANN, op. cit., pp. 659-689.

53 See for example FRAMHEIN, op. cit.; MINKS and REISSERT, op. cit.; TEICHLER et al., op. cit.

54 The only in-depth study on income by educational level does not include civil servants as well as self-employed persons and thus is not representative for graduates. See Werner CLEMENT, Manfred TESSARING and Gernot WEISSHUHN: Ausbildung und Einkommen in der Bundesrepublik Deutschland. Nuernberg: Institut fuer Arbeitsmarkt- und Berufsforschung der Bundesanstalt fuer Arbeit 1983.

55 See the overview in BUSCH et al., op. cit.; HOLTKAMP and TEICHLER: Beufstaetigkeit von Hochschulabsolventen, op. cit.; Manfred KAISER et al.: Fachhochschulabsolventen beim Uebergang vom Studium in den Beruf. Nuernberg: Institut fuer Arbeitsmarkt- und Berufsforschung der Bundesanstalt fuer Arbeit 1981.

56 See C. SCHAEFER and H. TOFAUTE (eds.): Beschaeftigungssichernde Finanzpolitik. Frankfurt and New York: Campus 1980; Fritz W. SCHARPF et al. (eds.): Aktive Arbeitsmarktpolitik - Erfahrungen und neue Wege. Frankfurt and New York: Campus 1982; Rudolf Husemann: "Darstellung und Bewertung beschaeftigungswirksamer Massnahmen fuer Hochschulabsolventen," in BAETHGE et al., op. cit.

57 Cf. our recommendations in BAETHGE, HARTUNG and TEICHLER: op. cit.

58 See BECK, op. cit.

59 See BAETHGE, HARTUNG and TEICHLER, op. cit.

60 See Westdeutsche Rektorenkonferenz (ed.): Hochschule und technologischer Wandel. Bonn: WRK 1983 (Dokumente zur Hochschulreform, No. 51/1983).

61 On changes and inconsistencies of manpower demand projections regarding engineers see Manfred TESSARING: "An Evaluation of Labour-Market and Educational Forecasts in the Federal Republic of Germany," in R. Vesituluta YOUDI and Keith HINCHLIFFE (eds.): Forecasting Skilled-Manpower Needs: The Experience of Eleven Countries. Paris: Unesco, International Institute for Educational Planning 1985, pp. 57-74, see esp. pp. 68-71.

62 TEICHLER: "Oeffnung der Hochschulen" ..., op. cit., p. 87; other projections such those of the BLK and the Science Council do only relate figures of graduates to those completing apprenticeship training and corresponding training schemes, but do not include other types of training as well as new unskilled labour. On the graduate labour market in the near future see also Friedemann Stooss: "Berufseinstiegprobleme der Hochschulabsolventen - Situation und absehbare Trends," in BADER et al., pp. 272-282.

III.

FEDERAL SYSTEMS OF HIGHER EDUCATION - THE CASE OF THE FEDERAL REPUBLIC OF GERMANY

1. Introduction: The Framework of Analysis

If we examine higher education in the federal states we might be inclined to assess the various institutional settings or regulations on the basis of their effects on the "well-being" of higher education. We could choose criteria for the well-being of higher education and examine whether federal responsibilities, co-ordinated federal-state actions, or decentralized decision-making either benefits or, perhaps, hinders higher education according to these criteria. This was the approach of James Perkins in his paper "The Plural System of Higher Education". Perkins wants to examine "how our changing plural balance is affecting the management of selected key problems: ... the promotion of equality of opportunity ... the health and vitality of our research universities ...", etc.[1]

Such an approach is appropriate if we can assume a consensus about certain goals of the higher education system or of higher education policy. These goals may be widely accepted and fairly constant over time in a particular society, so allowing assessment of the changing role of coordination on the national basis, and whether or not such changes have had desirable effects. In comparative perspective, however, it is not so easy to find such a consensus about the aims of higher education or higher education policy. In looking at the existing diversity of such aims we can even observe that basic philosophies on the homogeneity or heterogeneity/diversity of the dominant

society in a country not only shape the nation-wide coordination mechanisms of higher education, but also shape the views of what "well-being" of higher education actually means in each respective society. For example, American views on what is desirable in higher education stresses the virtue of diversity, whereas West German views tend to favour a fairly homogeneous system. Naturally, assessments on which types of mechanisms of coordination are preferable will vary between nations.

In a comparative approach to an examination of higher education in federal systems I consider it necessary first to analyze those factors which might explain the different roles coordination will play on a national basis in each country. In an effort to explain the case of higher education in the Federal Republic of Germany from a comparative point of view, I suggest that four primary factors should be considered:

a. The different philosophies prevailing in a given society on the strengths and weaknesses of diversity or homogeniety, and of centralization or decentralization.

b. The different elements of higher education to be found from one country to another which are prone to coordination. For example, the Abitur in Germany constitutes a right to enrol in higher education and therefore promotes actions of nationwide coordination regarding both standards of upper secondary education as well as the admissions regulations. In this analysis we also need to include elements from other sub-systems of society closely related to higher education. For example, the homogeneity of regulations for the civil service in the Federal Republic of Germany tend to promote coordination of higher education.

c. The mechanisms of coordination on a federal basis which can be found in the legal system and traditional policy of a respective country have an impact on the kind of regulations selected for coordinating higher education. For example, the tradition in other areas of the West German political and administrative system for setting up joint Federal-State commissions or agencies affected the choice of regulations when increased coordination of higher education was considered necessary.

d. We can observe the historical changes in the demands for nation-wide coordination, and the changes in political mood which favour either centralization or decentralization, homogeneity or diversity, coordination or non-coordination. For example, the increasing faith in

social planning during the sixties hastened coordinating mechanisms in many countries. It is necessary to consider this background when analysing federal systems in each country at any given time.

I shall try to take these factors into account when explaining the targets and mechanisms of the nationwide coordination of higher education in the Federal Republic of Germany. The reader should bear in mind, however, that this can only be a tentative analysis of such factors because of the lack of a thorough comparative analysis.

2. Preservation of Uniform Living Conditions: The Rationale of Coordination at the National Level

The constitution of the Federal Republic of Germany makes provision for a federal system. The Laender were granted autonomy in state affairs which was partly a reaction to the misuse of central authority during the Nazi regime.

However, the Basic Law limited decentralized structures in two ways: First, in Article 72.3 it set a constitutional norm to preserve "uniform living conditions" in all parts of the republic. Second, it classified areas of state affairs which ought not to be handled solely by the Laender, but jointly by the Laender and the Federal government or, finally, solely by the Federal authorities.

Thus, the Federal coordination of higher education was not strictly defined but was left open to debate. The constitutional regulations on the functions of State and Federal authorities stressed cultural affairs --including the supervision of all educational institutions — as the major task of the individual Laender thus encouraging regional diversity and even competition in the area of culture. It is interesting to note, however, that the established Federal powers affected higher education more directly than other areas of the education system. This was due to the legislative authority of the Federal government to promote scientific research, and to legislative responsibility for formulating the regulations of the civil service and health services.

Additionally, the constitutional requirement to preserve uniform living conditions presented the opportunity to revise regulations on Federal responsibilities where necessary. We will also discuss later the constitutional amendments which increased Federal powers in higher education.

The "fundamental dilemma", as Peisert and Framhein[2] call it, of federalism in higher education in the Federal Republic of Germany was not just superimposed by the Basic Law, for it met the traditions of higher education as well as public expectations. Cultural diversity was accepted generally, but at the same time the Federal government's call to increase Federal powers in 1978 could claim that students, parents, and teachers expect a "minimum of necessary uniformity of education" as a precondition to mobility and equal opportunity in education and employment, as well as to the relationships between education and employment. Institutions of higher education traditionally have been under the supervision of individual states, but at the same time a certain degree of homogeneity and standardization in higher education, as well as the opportunity for professors and students to transfer easily from one university to another, was considered desirable and was taken as a matter of course.

3. The Post-War Development of Decentralization and Centralization in Managing Higher Education

Peisert and Framhein's analysis has perceived three periods of development in cultural federalism in higher education in the Federal Republic of Germany.[3] Their report on "Systems of higher education" states:

a. "Decentralized Reconstruction, 1945-1956": During this first period, federal responsibilities were limited to legislative measures and some financial support for scientific research and cultural relations with foreign nations. In 1948 the Laender decided to create the Permanent Conference of the Ministers of Culture (Staendige Konferenz der Kultusminister der Laender in der Bundesrepublik Deutschland - KMK); this was originally conceived as a forum for communication but, since about 1955, became responsible for setting guidelines for a minimum conformtity in the education system.[4] Its recommendations and preparations of inter-state contracts were based on agreements between all the Laender. Thus the coordinating power was very weak. In this period, some organizations were created at the Federal level, for example, the West German Rectors' Conference (Westdeutsche Rektorenkonferenz), the German Academic Exchange Service (Deutscher Akademischer Austauschdienst) and the German Research Association (Deutsche Forschungsgemeinschaft).[5]

b. "System-wide Initiatives, 1957-1969": In 1956, the Federal Government

began to take part in financing research bodies (German Research Association and the Max Planck Society) and the expansion of universities. A major step towards the nation-wide coordination of higher education planning was the establishment of the Science Council (Wissenschaftsrat) in 1957. This was the first central agency for education in which the Federal Government and the States worked together; the Science Council includes representatives of higher education and research institutions as well as representatives of the public. It was founded for the purpose of making recommendations for the promotion of research, but soon directed its attention towards the quantitative, structural and organizational development of the system of higher education.[6] During this period federal expenditures on higher education increased substantially, especially on buildings and facilities, promotion of research, and financial assistance for students. In 1965, federal and state governments signed a contract on a financial aid program for students.

c. "Cooperative Federalism, since 1969": During the late Sixties, the period of a generally decentralized policy of higher education comes to an end, as Peisert and Framhein note.[7] In 1969, an amendment to the Basic Law regarding the common tasks (Gemeinschaftsaufgaben) of Federal and State agencies made provision for common responsibility for facilities and construction in higher education; educational planning and research planning also fell under this mantle. On this basis a Higher Education Construction Act was passed which envisaged a 50 per cent federal share in funding the construction of university buildings. Also, a (federal-state) Planning Committee for Construction in Higher Education (Planungsauschuss fuer den Hochschulbau - PLA) was created in 1969. These changes were made before the coalition Federal Government of the Social Democratic Party and Free Democratic Party came into office in the autumn of 1969. They increased the duties of the former Federal Ministry of Scientific Research now renamed the Federal Ministry of Education and Science (Bundesministerium fuer Bildung und Wissenschaft - BMBW). In 1970, Federal and State Government signed an agreement to found the joint planning agency which, in 1975, was renamed Federal-State Commission for Educational Planning and Research Promotion (Bund-Laender-Kommission fuer Bildungsplanung und Forschungsfoerderung - BLK). The BLK was expected to submit proposals on long-term planning in education. It also created a program to promote innovation in educational

institutions: According to this so-called "Modellversuchsprogramm" the Federal Government and the respective States each finance 50 per cent of the innovation programs for institutions of education.[8] In 1976, the Framework Act for Higher Education (Hochschulrahmengesetz - HRG) was enacted which provides for some common elements in the organization of higher education. On the basis of this law the States signed a contract in 1977 to establish Study Reform Commissions (Studienreformkommission) which elaborate guidelines for common elements of curricula in institutions of higher education in the Federal Republic of Germany.

I believe we might be justified in adding a fourth period to the three suggested by Peisert and Framhein: In the Seventies there began a gradual erosion of the role of the Federal government as well as Federal-State agencies.[9] This had already started in 1972 when no substantial consensus could be reached about the first General Plan for Education (Bildungsgesamtplan)[10] and the enactment of the Framework Act was postponed. The enactment of the Framework Act for Higher Education[11] in 1976 and the creation of Study Reform Commissions in 1978 can create the misleading view that there was a continuous trend towards more systemwide coordination. It is certainly true to say that the Federal government and parliament's role in coordinating higher education was reduced.

The Federal Government published a report in 1978 on the "structural problems of the education system in the Federal state" which pointed at many heterogenous elements of the education system which threaten the desired norm of a minimum of uniform living conditions. More federal powers were demanded.[12] The Laender governments, however, began to refuse Federal-State any further regulations and agreements in educational planning. For example, they turned from federal-state to inter-state contracts for access to higher education, and they refused to establish the Study Reform Commission on the basis of a Federal-State contract or in the context of supervisory functions of the BLK. Rather, the Standing Conference of the Ministers of Culture claimed for itself responsibility for coordinating the Study Reform Commission. Finally, in the early Eighties the Federal government drastically reduced its expenditures for the expansion of facilities and construction in higher education. Some Laender governments interpreted this as an indication

of the Federal government's desire to relinquish its involvement in higher education planning.

4. The Targets of System-Wide Coordination

Efforts to reach better coordination in higher education reached into most elements of the higher education system. The major targets of systemwide coordination will be discussed briefly:

a. Cultural regulations with foreign nations were considered to be the task of the Federal government in the Basic Law and have remained more or less undisputed as such.

b. Promotion of Scientific Research was, according to the Basic Law, a Federal duty in terms of legislation but not necessarily in terms of funding. Schemes were introduced to make federal government responsible for the funding and coordination of "big science" and some special research programs. There were other schemes for mixed funding for major public research agencies and organizations until, finally, higher education planning legally became a joint federal-state task. It was also generally accepted that the Federal government would be involved in planning the promotion of research for institutions of higher education.

c. Financial aid for students: 65 per cent of this is borne by the federal government and the remainder by the state governments.[13] The Federal Ministry of Education and Science takes the initiative for the legislation and supervision of such programs which have to be agreed by the Laender. The purpose of federal involvement is to prevent regional disparities in public efforts to secure equal opportunity. The Federal government also finances the "Studienstiftung des deutschen Volkes" - a public institution which provides scholarships for outstanding students.

d. Quantitative and structural planning was originally the domain of each Land. Since the establishment of the Science Council in 1957, however, the Federal Government has been involved in recommendations. The Science Council set goals regarding the overall capacity of higher education, the quantitative development of certain fields of study, and the regional distribution of higher education. Beginning in 1969, the Federal Government became directly involved in decision-making on quantitative and structural development: in particular, long-term quantitative and financial planning by

the BLK and decisions regarding construction cannot be made without federal consent.

e. Construction of new university buildings and major new facilities (laboratories, libraries etc.) of all West German universities are financed by the Federal Government and the respective Land at the rate of 50 per cent each. No single university building will be constructed unless it is recommended by the Science Council and receives a positive decision by the Planning Committee for Construction in Higher Education.

f. Access and admission is influenced by the Federal Government in various ways. The Federal Government led preparation of the Framework Act for Higher Education which defines prerequisites for admission. It shares responsibility for the Central Admissions Agency (Zentralstelle fuer die Vergabe von Studienplaetzen). Finally, the decisions made on construction and quantitative planning are at the same time parts of access and admissions policy. Rules for access and admissions are uniform for all institutions. The rules are formulated by the Framework Act for Higher Education, the Constitutional Court, additional federal-state or inter-state treaties, or by the Permanent Conference of Ministers of Education. Where restricted admissions are concerned, it is the central admissions agency which handles the admission procedure. In cases of open admissions the individual university accepts every qualified person. In cases of restricted admission to an individual field of study in a given university, the university follows a general formula. Thus, admissions are almost totally decided on a system-wide level.

g. Curricula and examinations: Curricula have always been the domain of the individual institutions with the exception of those courses leading to the state examination (especially teacher training, law and medicine) which are the domain of the ministries responsible for those respective professions. As the Federal Government, or the federal legislative bodies, set the regulations for civil service and health service regulations, it used to be involved in questions concerning curricula in some fields of study. However, since the late Sixties the power of individual universities to shape the curricula has been substantially reduced. First, much of this power was transferred to the state governments which are accorded the right to approve university regulations regarding study courses and examinations; a right which has in fact become an instrument of considerable control.

At the same time system-wide coordination became more powerful. In those fields of study leading to a university diploma it is the commissions set up by the KMK, the WRK, and the representatives of scholars in each field (Fakultatentage), which suggest the general examination regulations which are finally approved by KMK.[14]

The Federal Government supported mechanisms to reform curricula. The BLK established a program of model experiments for innovation in education, half being paid by the Federal Government and the other half by the government of the respective state.

Finally, the establishment of the Study Reform Commissions expresses the growing interest of governments in promoting innovations to the higher education system although, at the same time, it can be considered as an instrument of system-wide coordination of curricula. The Laender governments coordinate the study reform commission while the Federal Government was granted the role of observer.[15]

h. Personnel: General regulations concerning university personnel are made on a system-wide basis, either by means of laws concerning the civil service or with the help of the Framework Act for Higher Education. In both cases the legislative initiative has to be taken by the Federal Government and the Bundestag, the Federal parliament, but it has to be approved by the Bundesrat, the chamber of the States. The federal initiative for the Framework Act intended to promote homogeniety of the academic positions, although considerable diversity remains - indeed diversity is substantial compared to teaching staff patterns in most other countries. The Laender are responsible for the supervision of staff at institutions of higher education and have suggested common patterns for the composition of academic staff, but with little success so far.

i. Administration and Self-Administration: The Framework Act was not confined solely to forming regulations for personnel but was also involved in the formation of general regulations, although the individual state remained responsible for specifying most regulations regarding the administration and self-administration of the university. Coordination was considered necessary primarily because of the very different state laws and orders regarding the participation of junior staff, administration staff, and students within the

university self-administration system, because the professors votes ranged from 30 to 70 per cent on university committees. However, the major areas of coordination were not the outgrowth of political negotiation but came about as the result of a ruling by the federal constitutional court.

Inspection of the targets of the system-wide coordination indicate that there are factors which influence the arrangements:

(1) There are certainly some areas in which system-wide coordination is considered natural, such as international education matters, or the promotion of science.

(2) As in many other countries, the Federal Government could easily step in when additional funds are needed for expansion, and although we do not accept the "power of the purse" in legal terms, legal revisions were nevertheless made when the need for federal financing was recognized.

(3) A major reason for system-wide coordination was the constitutional aim of preserving uniform living conditions. This affects many of the coordinative activities.

(4) The aim of preserving uniform living conditions could theoretically be achieved by a small amount of coordination of all aspects of higher education. There is a definite preoccupation, however, with coordinating equivalences of credentials as well as with admissions because of the tradition of uniform standards and rights gained from final examinations and degrees.

(5) Coordination has also gained momentum in aspects where a certain degree of homogeneity had been dramatically lost. This was true in the case of self-administration and personnel.

5. Characteristics of System-Wide Coordination of Higher Education in the Federal Republic of Germany

If we make an international comparison of the system-wide coordination of higher education and other federal systems it becomes apparent that a certain degree of "uniformity of living conditions" is considered important in the Federal Republic of Germany. Cultural diversity was permissable but it is generally considered undesirable to establish regional barriers concerning access to education and to any form of employment.

There are numerous regulations (and organs responsible for) pertaining to the system-wide coordination of higher education. This is to some extent due

to the fact that the federal influence is not based on "spending power" but on the definition of the "joint tasks" of federal and state governments as written into the constitution. Additionally, the multitude and overlap of organs and regulations indicates the extensive legalism of governmental activities in the Federal Republic of Germany.

6. Effects of System-Wide Coordination and of the Federal Involvement

The expansion of higher education, the growing public expenditure on higher education, as well as the growing utilization of the "products" of higher education, created the need for a multitude of regulations regarding access, institutional patterns, financing, degrees, etc. If each state had set up its own regulations the traditional openness of the system of higher education would have been lost; an openness which allows every qualified secondary school graduate to enrol at the university of his choice, allows students to transfer from one university to another, and results in credentials being valid in all parts of the country. Thus it was generally felt that a growing system-wide coordination was necessary to ensure continuing openness.

The desire for such coordination was reinforced by the student protests and the subsequent higher education reform movement at German universities. The variety of proposals for curricula reform, decision-making procedures, teaching staff patterns, etc., were responsible for the introduction of a wave of state laws. As each state selected its own specific regulations, a heterogeneity of the system of higher education could be expected within a few years which would hinder mobility and prevent "uniformity of living conditions".

System-wide coordination, however, does not necessarily rely on federal involvement since it could also be organized by the states. The German Laender had previously cooperated on matters of higher education. In addition to recommendations and inter-state treaties they had even decided on the joint financing of universities located in relatively poor states.

Growing federal involvement in higher education had three obvious advantages: First, the newly established coordinating bodies could make decisions or recommendations based on a two-third or three-quarter majority as opposed to the 100 per cent consensus needed by the Standing Conference

of the Ministers of Education; thus, it was more likely that some action would be taken. Second, the federal-state regulations created a Federal Ministry of Education and Science which had no powers in routine administration and supervision but was concentrated upon planning and concepts of the future development of higher education. As the planning sections within state ministries failed to play a significant role in the face of the powerful routine administration, this proved to be the only way of securing a certain balance between broader views and administrative routine. Third, the Federal inclination to make use of its rights helped to expand the construction of higher education, to enhance the regional distribution of universities, to increase student aid, and to promote funding for innovations in higher education.

It should be noted, however, that the universities tended to complain about federal involvement and the growing system-wide coordination. Universities had either to give up innovations, or were forced only to introduce those which conformed with new system-wide regulations. Thus, they conceived the new system-wide regulations as a threat to their autonomy although, at the same time, it is interesting to note that few of these comments sufficiently considered the growing interventionism of government in general. Conflicting reform goals, expansion of student numbers, increasing expenditures, etc., anyway led state governments to supervise universities more closely. In many cases system-wide coordination under these conditions helped to ensure more leeway for universities than the regulations of individual states.

7. The Recent Decline of the Federal Role

System-wide coordination and the federal influence on higher education began to decline in the seventies. The two major reasons for this were: First, the Christian-Democratic Party superseded the governments of Lower Saxony and West Berlin during the latter half of the seventies and thus gained a substantial majority as representatives of the Laender, whereas the coalition of the Social-Democrats and Liberals remained in power at the Federal level until 1982. Thus, it became much more difficult to find the two-thirds or three-quarters majorities required in the coordinating bodies. Second, during this period of expansion most of the Federal powers were established on joint

Federal-state activities to expand higher education and introduce innovations. Once most of the decisions on construction had been made, and once the Federal government had decided on substantial reductions in the expenditures for higher education, the Federal government lost a large amount of influence on system-wide coordination. In retrospect, one might say that it was a mistake to establish federal involvement primarily on the basis of coordinating expansion and framing legislation. For there is an even more pressing need to introduce future-oriented possibilities to higher educationas well as to counter-balance the short-sighted views of the routine administration of the Laender under conditions of restricted funding and the general pessimism which prevails in the 1980s about the future of higher education.

Notes

1. Introductory note on the ICED-Aspen Seminar on Federal Systems of Higher Education 1981 by James PERKINS, unpubl.

2. See Hansgert PEISERT and Gerhild FRAMHEIN: Systems of Higher Education: Federal Republic of Germany. New York: International Council for Educational Development 1978, pp. 25-84.

3. Ibid., pp. 29-46.

4. See Secretariat of the Standing Conference of Ministers of Education and Cultural Affairs of the Laender: The Educational System in the Federal Republic of Germany. Bonn: German Academic Exchange Service 1982, pp. 9-12.

5. See Ludwig HUBER: "Ueberregionale Selbstverwaltungsorganisationen," in L. HUBER, (ed.): Enzyklopaedie Erziehungswissenschaft, Vol. X. Stuttgart: Klett-Cotta 1983, pp. 694-698.

6. BERGER, Rolf: Zur Stellung des Wissenschaftsrates bei der wissenschaftspolitischen Beratung von Bund und Laendern. Baden-Baden 1974.

7. PEISERT and FRAMHEIN, op. cit., pp. 40-45.

8. Bund-Laeder-Kommission fuer Bildungsplanung und Forschungs foerderung: Zwischenbilanz 'Fuenf Jahre Modellversuch im Hochschulbereich'. Bonn 1977.

9. See the overview on planning approaches in higher education in Hans BRINCKMANN: "Quantitative und strukturelle Planung des Hochschulwesens," in HUBER (ed.), op.cit., pp. 253-264; Wolff-Dietrich WEBLER: "Forschung und Hochschulpolitik und -planung des Staates, der Verbaende und sozialer Bewegungen," in Dietrich GOLDSCHMIDT, Ulrich TEICHLER and Wolff-Dietrich WEBLER (eds.): Forschungsgegenstand Hochschule. Frankfurt and New York: Campus 1984, pp. 233-274.

10. Bund-Laeder-Kommission fuer Bildungsplanung: Bildungsgesamtplan, 2 vols. Stuttgart: Klett 1973-74.

11. Bundesministerium fuer Bildung und Wissenschaft: Framework Act for Higher Education (Hochschulrahmengesetz). Bonn 1976.

12. Bundeminister fuer Bildung und Wissenschaft: Strukturprobleme des Bildungssystems im Bundesstaat. Bonn 1978.

13. Since the early 1980s, the Federal government has not subsidized grants for graduate students.

14. See Norbert KLUGE and Ayla NEUSEL: Studienreform in den Laendern. Bonn: Bundesminister fuer Bildung und Wissenschaft 1984, pp. 149-150.

15. Ibid., pp. 136-148.

IV.
HIGHER EDUCATION AND GRADUATE EMPLOYMENT IN THE FEDERAL REPUBLIC OF GERMANY

1. Introduction

Considering manpower planning in the Asean countries one might wonder to what extent and in which way experiences of a country such as the Federal Republic of Germany might be of any help. In the 1960s many theories regarding education and society were based on the belief of convergent trends. Observation of the pace-setters of modernisation and growth was considered instrumental in finding appropriate solutions. In the meantime though, views could change. On the one hand, doubts grew whether developing countries ought to copy the industrialised countries. For example, the similarity of the structure of the labour force between the Federal Republic of Germany and Singapore on the one hand and between other Asean countries on the other, as Table 1 shows, hardly justifies the conclusion that Asean countries ought to strive for reducing the primary sector to less than 10 per cent in their strategies of development.

Also, we observe marked differences between Asean countries. Whereas the percentage of freshmen at institutions of higher education among the corresponding age group in the Philippines is higher than in the Federal Republic of Germany, it is much lower in Singapore - an economically very successful country.

On the other hand, differences among industrialised countries regarding

Table 1 Structure of the Economically Active Population by Occupation

	Indonesia (1978)	Malaysia (1979)	Philippines (1978)	Singapore (1980)	Thailand (1980)	F.R.G. (1980)
Professional and related workers	2.1	5.6	5.5	8.4	2.5	13.4
Administration and managerials	0.5	1.3	1.0	4.7	1.3	2.9
Clerical and related workers	3.1	7.7	3.8	14.3	1.7	19.4
Sales workers	10.1	9.8	10.1	14.1	8.2	8.4
Service workers	3.8	8.5	7.4	10.5	2.7	10.7
Agricultural and related workers	61.0	33.1	49.9	1.7	70.2	5.2
Production and related workers	11.2	28.3	18.1	37.7	12.5	35.8
Not classified by occupation and persons seeking first job	8.2	5.7	4.2	8.6	0.9	4.2
	100.0	100.0	100.0	100.0	100.0	100.0
GNP per capita 1981 (U.S. $)	530	1,840	790	5,240	770	13,450

Source: Bikas C. SANYAL: Economic Growth and the Training System in the Asean Countries. Paris: IIEP 1983 Mimeo, p.11. Based on Yearbook of Labour Statistics. Geneva: International Labour Office, 1982.

higher education and its relationships to the employment system remained substantial. For example, we do not observe a convergence of freshmen quota, as Table 2 shows. Traditions of culture, higher education systems, occupational structures, etc. lead to an amazing variety of higher education - working life relationships.

Therefore, the Federal Republic of Germany can neither be taken as the model as such nor as the propotype of industrialised countries in this context. Rather, this case might broaden the view regarding the variety of cases and variety of potential solutions. Since Asean countries are more familiar with the United States and United Kingdom, information regarding various matters of higher education and employment in one continental European country certainly adds to the variety of problems as well as to possibilities of responses.

2. Characteristics of Higher Education and Employment

As already shown in Table 2, the quota of college freshmen in the Federal Republic of Germany was exceptionally low around 1960 and did not grow more than average during the sixties and seventies. Even, if one takes into account a 13-year period of primary and secondary education before enrolling at universities and very long courses - almost six years on average for being awarded a university degree and more than four years to be awarded a vocational college degree -, the Federal Republic of Germany does not seem to be a typical case of the mass higher education system.

In an earlier publication, I argued that the Federal Republic of Germany was challenged or even shaken more strongly than most other industrialised countries by the increase of student number due to certain characteristics of higher education as well as the relationships between higher education and employment.[1]:

- The knowledge-orientation and research orientation of German universities according to the Humboldtian concept makes it difficult to accept changing educational goals of high numbers of students.
- The principle of homogenity of institutions - underscored by the possibility of students to move freely from one institution to another and

Table 2 Development of Freshmen Quota in Selected OECD Member States 1960-1976

Country	Corresponding age group	Percentage of freshmen among corresponding age group 1960	1965	1970	1976
Australia	17-18	-	-	22.2	37.7
Austria	18-20	7.0	8.5	13.0	18.6
Belgium	18-20	18.3	22.0	29.5	33.9
Denmark	19-21	14.4	16.8	24.1	36.8
Finland	19-21	11.9	13.7	16.3	26.0
France	18-20	17.5	23.0	27.1	27.2
Italy	19-21	7.6	13.0	24.0	30.6
Japan	18-19	11.1	18.6	26.8	39.2
Netherlands	17-20	12.0	12.8	18.3	25.5
Sweden	19-21	9.4	15.2	26.1	33.3
United Kingdom	18-20	.	.	29.0	33.2
United States	18	35.7	38.8	47.0	42.8
Yugoslavia	18-24	22.5	30.0	30.0	34.6
Federal Republic of Germany	20-22	6.8	9.7	13.7	19.2

Sources: PELLEGRIN, J.P. (ed.): "Quantitative Trends in Post-Secondary Education", in OECD, (ed.): Towards Mass Higher Education: Issues and Dilemmas. Paris 1974, p.7. OECD: Policy for Higher Education in the 1980s. Paris 1981, p. 119.

1 Data refer to 1969
2 Freshmen of Grands Ecoles and IUTs not included
3 First-year students
4 Of 18-years old population
5 Of 18-20 years old population
6 Excluding short-cycle higher education
7 Of 18-19 years old population
8 Only degree credit students

by the fact, that professors only are eligible for negotiations regarding better payment and facilities if they have received a call from another university - does preclude the easy route towards mass higher education through widening the hierarchy of institutions.

- The emphasis on preparation of career causes problems in adjusting towards gradual processes of "upgrading" and vertical substitution on the labour market.
- Almost all institutions of higher education are public, and higher education is almost exclusively financed by public sources. Therefore, expansion of higher education led to a substantial financial burden of government.

These characteristics also lead to a substantial governmental interest in higher education planning and manpower planning. An orientation towards quantitative planning of higher education as well as the governmental concern about the future of graduates have been stronger in the Federal Republic of Germany than in any other market-oriented industrialised country.

This is indicated, among others, by the fact that more forecasts regarding requirements of highly qualified manpower have been commissioned and published than in other market-oriented countries.[2] Also, the Federal Republic of Germany developed very detailed mechanisms of quantitative planning of higher education: For example, the Science Council - an advisory body comprised of federal and state representatives as well as of scholars and representatives of the public - recommends major ways and directions of the quanititative development of higher education in a very detailed way. As 50 per cent of higher education construction costs are borne by Federal subsidies to the individual state in charge of the respective university, no single university building will be constructed without the Science Council's support[3].

One has to refer, however, to characteristics of higher education of the country under consideration again in order to explain why this did not lead to higher educational planning closely geared to presumed manpower requirements. According to the German tradition, any qualified secondary school leaver - a person passing the Abitur, the final examination, at the

Gymnasium, the academic track of secondary education - had the right to enroll at any university in any field of study. Since the mid-1960s some compromises developed between the principle of open access of the qualified secondary school leaver on the one hand and restricted admissions due to financial reasons or manpower considerations on the other, but the tradition of the Abitur undoubtedly has prevented a system of higher education closely geared to presumed manpower requirements.[4]

3. Basic Information on the Development of Higher Education and Graduate Employment

According to the definition as regards to 'higher education' valid in the 1970s, the number of students at institutions of higher education in the Federal Republic of Germany was about 172,000 in 1950, about 329,000 in 1960, 534,000 in 1970, 1,044,000 in 1980 and finally 1.2 million in 1982. It doubled fairly regularly in a period somewhat more than a decade.[5] About 20 per cent of the students are enrolled at short-cycle institutions (Fachhochschule), which were officially upgraded to institutions of higher education in 1971.

Table 3 provides data on freshmen and graduation. The number of beginner students increased from 65,400 in 1960 to 138,200 in 1980. The percentage of freshmen among the corresponding age group rose in this period from 8.7 per cent to 19.5 per cent. It might be worth noting that the figures of students' intake did not increase as much as the total number of students: this is due to a gradual increase of the average length of study at institutions of higher education.

According to forecasts compiled by the Permanent Conference of the Ministers of Education of the States of the Federal Republic of Germany in 1982, the total number of students is likely to rise up from 1,350,000 to 1,400,000 in 1988 and 1989 and to decline thereafter. This prediction, however, is based on the assumption that the percentage of qualified secondary school leavers transferring to institutions of higher education as well as the average length of study will slightly decline. If we expect a continuation of the status quo, figures of 1,500,000 to 1,550,000 seem to be likely.[6] According to recent estimates on increasing student numbers at academic track of secondary education, an increase of student numbers up to 1.7 million cannot be excluded.

Table 3 Access to Higher Education and Graduation in the Federal Republic of Germany, 1960-1980

		1960	1965	1970	1975	1980
Secondary school leavers (in 1,000)	Academic track	55.4	51.7	89.2	125.5	168.0
	Higher vocational track	-	-	-	46.7	50.6
	Total	55.4	51.7	89.2	172.7	218.6
Secondary school leavers in percent of corresponding age group*	Academic track	5.6	7.2	10.9	14.7	17.2
	Higher vocational track	-	-	-	5.5	5.2
	Total	5.6	7.2	10.9	20.2	22.4
Beginner students (in 1,000)	At universities	65.4	63.2	92.2	120.7	138.2
	At short-cycle institutions	20.6	26.5	29.2	42.8	51.7
	Total	86.0	89.7	121.4	163.5	189.9
Beginner students in percent of corresponding age group	At universities	6.6	8.8	11.2	14.2	14.2
	At short-cycle institutions	2.1	3.7	3.6	5.0	5.3
	Total	8.7	12.5	14.8	19.2	19.5
Graduates** (in 1,000)	From universities	27.9	40.5	47.3	70.7	70.9
	From short-cycle institutions	11.3	15.3	22.0	30.6	33.3
	Total	39.2	55.8	69.3	101.3	104.2
Graduates in percent of corresponding age group***	From universities	3.4	4.3	7.2	9.6	8.9
	From short-cycle institutions	1.4	1.6	3.3	4.1	4.2
	Total	4.8	5.9	10.5	13.7	13.1

Source: Based on Wissenschaftsrat: Zur Lage der Hochschulen Anfang der 80er Jahre. 2 vols. Koeln 1983.

* 18-21 years' old

** total number of exams excluding those doctoral exams not preceded by previous exams.

*** 23-27 years' old

The increase of student numbers in the seventies has to be attributed primarily to demographic factors - an increase of life birth until 1964 - and to the growing average length of study. According to the Federal Ministry of Education and Science, students graduating in 1974 from universities had spent 11.2 semesters at institutions of higher education; the time span rose to 11.8 semesters in 1979. Contrary to those factors, the freshmen quota of the corresponding age group remained constant at about 19 per cent from 1972 to 1978, and increased moderately thereafter.

During the eighties, the demographic "heap" will contribute to increasing number of students until 1988/1989 because the mean age of students is about 24 to 25. In addition, it is interesting to note that in recent years of declining job prospects, a growing percentage of youth choose the academic and intermediate track of secondary education; therefore, the Permanent Conference of the Ministers of Education predicted in 1982 an increase of the beginner student quota of the corresponding age group from 19 per cent in 1980 to 24-25 per cent in 1985 and 27-28 per cent in 1990.

As table 3 shows, the expansion of higher education leads to high numbers of graduates with a considerable time-lag. One might estimate the percentage of graduates among new labour to have been risen from about 5 per cent in the fifties to 13-15 per cent in 1980. The percentage of college-trained persons of the total labour force grew from about 4 per cent in 1960 to more than 8 per cent in 1980.

The total number of college trained labour was 773,000 in 1960, 1,070,000 in 1970 and 1,486,000 in 1980. It grew by roughly 40 per cent each decade. As Table 4 shows, this growth affected all economic sectors. The distribution of graduates by economic sector did not change substantially from 1960 to 1980. Contrary to popular beliefs, the employment of graduates in the public sector grew only to a limited extent. The graduate quota increased in the private sector more strongly than in public services.[7]

Since 1973, unemployment is an important labour market issue in the Republic of Germany. As Table 5 shows, unemployment of college trained manpower is somewhat lower than that of skilled labour and substantially lower than that of unskilled labour. There is a noteworthy trend: Whereas in the late seventies the unemployment quota of college graduates got close to

Table 4 Employment of University-trained Manpower by Economic Sector 1961, 1970 and 1980

Economic sector	Percentage of university-trained manpower			Ratio of university-trained manpower of all persons employed		
	1961	1970	1980	1961	1970	1980
Agriculture, forestry	0.8	0.6	0.5	0.2	0.3	0.5
Production	15.3	14.5	12.9	0.9	1.2	1.6
Trade, finance etc.	6.9	7.2	6.4	1.2	1.5	1.9
Other services (non-profit organizations, private households, services)	21.4	19.2	22.9	7.4	8.7	11.6
Education and science	38.9	43.2	39.6	41.8	47.8	47.4
Other public services (administration, mail, railways, public health services etc.)	16.7	15.3	17.7	5.4	4.9	6.4
	100.0	100.0	100.0	2.9	4.0	5.6

Source: Analyses of Census and Mikrocensus Data by Armin HEGELHEIMER: "Trends und Perspektiven der Beschaeftigung von Akademikern," in Reinhard BADER et al. (eds.): Studenten im Schatten des Arbeitsmarktes. Frankfurt and New York: Campus 1987, pp. 140-142.

that of skilled labour, unemployment of skilled labour grew faster in the early eighties - a period of dramatic increase of unemployment in general - than unemployment of college graduates.

Table 5 Unemployment Quota by Educational Level 1973-1982

Educational Level	1973	1975	1980	1982
Unskilled labour	1.4	6.7	6.0	13.4
Skilled labour	0.7	3.2	2.4	5.2
Technicians, etc.	0.6	2.2.	1.8	2.9
Short-cycle graduates	1.1	3.2	2.0	3.6
University graduates	0.6	1.5	2.1	3.9
Total	1.0	4.4	3.4	7.2

Source: Data by Bundesanstalt fuer Arbeit (September of corresponding years)

4. Manpower Forecasts and Research on 'Qualitative' Relationships between Higher Education and Work.

In the early sixties, the human capital theory began to gain popularity also in the Republic of Germany. Studies based on it hardly touched upon measurement of the contribution of education to economic growth or of the rate of return of investment in education approaches which had become popular in some countries. Rather, they concentrated on the prediction of demand and supply of college graduates.

The development of the forecasts on the demand and supply of college graduates can be divided into three stages.[8] The first global forecasts in the early sixties, the forecasts around 1970, most following minutely manpower requirement approach, and finally the forecasts in the mid-seventies which took up some of the objections raised against the "classical" manpower requirement approach.

The first global forecasts on the demand for university graduates were based on the assumption that the Federal Republic of Germany was lagging behind in the international expansion of secondary and higher education.

Especially an acute undersupply of teachers was expected mainly due to the increasing number of pupils.

The late sixties until the early seventies was the second period of requirement forecasts; a series of prognoses were produced based on the manpower requirement approaches. The first and the best known of them, carried out by H. Riese in 1967 under commission to the Science Council, came to the conclusion that the number of students was growing at a far faster rate than requirements; indeed, it was predicted that by 1981 there would be about twice as many graduates as job openings for people with their qualifications.[9]

The forecasts of this second period provoked a large number of criticisms. Objections were raised as regards the theoretical and political implications as well as the methods applied in the requirement forecasts. Among others, it was argued that the supply of qualified labour at the present or recent past ought not to be considered sufficient and at higher ratios of college-trained labour were likely to be needed within many occupational groups. Some critics pointed out the uncertainty of future development and other systematic imperfections of manpower planning. Also, that no allowance was made for horizontal substitution processes or the absorptive capacity of the labour market. Further, it was argued that a higher supply of graduates might have innovative effects on the organisation of work and productivity, and thus modify the demand. Besides, the forecasts were considered misleading, for they did not take into account the role of social demand in education policy, possible political programmes to utilise highly qualified manpower and the benefits of education for culture and society in general.

In the third period beginning 1973, dozens of requirement forecasts were published which took into account somehow the criticisms of the preceding forecast that had followed the manpower requirement approach. There developed such a variety of approaches that it is difficult to make any general statement about them. Among others, there are studies which only modify the classical approach marginally, just summarise employers' opinions, rely on international comparisons in the supply of professional services, estimate potentials of upgrading or present possible far-reaching qualitative change of the economy and their effects on the labour market.

It may be appropriate, though, to state that those requirement forecasts which follow some of the assumptions and methods of the manpower requirement approach, but at the same time try to develop more sophisticated concepts, tend to show the following modifications:

- to proceed from various political objectives as regards to education, labour market and economy, and to present corresponding models of the consequences expected in terms of demand and supply of graduates,
- to incorporate surveys on employers' views as regards to the present utilisation or future demand for highly qualified manpower.
- to estimate the possible range of requirements due to potentials of flexibility on the part of the employers' and the labour force.

As these modifications require a more detailed data base, most of the forecasts of the third period concentrated on segments of fields of studies or occupations. It should be mentioned that in some cases forecasts were made for requirements as regards to all levels of education, or some for certain regions.

Many of the forecasts came to the conclusion that according to more cautious expectations on future development, a remarkable oversupply of graduates could be predicted, but if substitution processes played an important role in the future and active policies as regards to economic development and labour market were to be chosen, there would not be any oversupply. Although the debate continued about the utility of such forecasts, in the seventies the number of politicians and such forecasts were neither a perfect tool nor useless but rather one of several valuable sources of information, provided their predictive validity was not overestimated.

However, it is doubtful whether these studies have been of any substantial help in government planning on higher education or even whether they have been able to make such planning more sophisticated. For, the more complex the models became and broader thus the range of potential demand and supply became, the harder it was for them or produce results that could serve as legitimization for specific political decisions.

Table 6 summarises the findings of a forecast published in 1978 which includes all levels of education. According to this study, an oversupply of university graduates in 1990 only would be avoided if annual economic growth was almost 4 per cent and if potentials of substitution were used to the highest extent possible. In addition, Table 6 shows that a shortage of unskilled labour is likely and that many skilled persons have to take over unskilled positions.

In the late seventies, the number of forecasts declined whereas surveys on transfer from higher education to employment, careers, utilisation of knowledge, etc. were conducted in large numbers and improved in quality.[10] There are various reasons why such surveys became more popular.

Among others, the policy of expanding higher education leads some scholars to raise the question to what extent the employment system can absorb higher number of graduates and whether unexpected supply leads to new kinds of utilisation of knowledge. Also, the criticism of the rigidities of the manpower requirement approach inspired research on substitution processes. Further, growing concern about employment prospects of graduaes increased interest in surveys of that kind. In addition, studies on the relationships between contents of studies and job tasks followed increased attention paid by politicians and planners to curricula development in higher education. Finally, research traditions to analyse problems of "qualifications" were helpful.

In general, these kinds of research helped to overcome to some extent the "black box" of higher education - work linkages left by education and labour statistics and forecasts as well as planning based solely on such limited information. Surveys on the training of previous holders of a position as well as desirable skills of successors, matrixes of substitution processes, graduates' and supervisors' assessments of the utilisation of skills, employers' views regarding their reasons for employing more graduates - these kinds of surveys helped to get a much more sophisticated picture on the relationships between higher education and employment.[11]

A few findings of such kind of research ought to be mentioned. In 1973, mechanical engineers were requested to assess the utilisation of knowledge in detail. They stated that they had spent 34 per cent of their college education on mathematics and science, but that 31 per cent would have been appropriate

Table 6 Demand and Supply of Manpower by Level of Education in 1990, according to a Forecast by Weisshuhn (percentage)

Level of education	1970 Educational attainment of labour force	1990 Demand model I (2.5% growth rate of GNP)	1990 Demand model II 3.9%)	1990 Demand model II: margins of substitution	1990 Supply (total labour force)
Unskilled and semi-skilled labour	33.0	29.8	29.4	24.0-38.9	17.0
Skilled labour: apprenticeship training	42.8	42.6	41.8	34.1-53.0	44.5
Skilled labour: higher vocational training	13.8	14.9	15.0	12.1-19.0	22.9
Graduates from short-cycle institutions	1.6	1.9	2.0	1.6-2.5	3.1
University graduates	4.3	6.2	6.4	5.2-8.1	8.1
Open/others	4.5	4.6	5.4	-	4.4
Total[3]	100.0	100.0	100.0	100.0	100.0

Source: Based on Gernot WEISSHUHN: Beschaeftigungschancen und Qualifikation. Frankfurt and New York: Campus 1978, pp. 130-135.

1 Berufsfachschulen, Fachschulen, Technikerschulen
2 Only graduates of engineering were included in 1970 and in demand data
3 Only German citations

for their jobs. The corresponding figures for engineering course were 55 per cent and 42 per cent, whereas an increase of non-technical courses was recommended from 11 per cent to 22 per cent.[12]

A representative survey in 1979 showed that only one out of eight university graduates had taken over jobs previously held by a vocational college-graduate or a non-graduate. The graduates also were asked to state which education fits best to the job requirements:

- 76 per cent of university graduates stated that university education in their field of study was most appropriate,
- 10 per cent considered another university major equally well,
- 3 per cent considered another university major preferable,
- 5 per cent considered a vocational college degree sufficient,
- 1 per cent considered a vocational college degree prefereable,
- 3 per cent did not see any necessity of college education for the accomplishment of their job tasks.[13]

As other surveys showed that employers believe that about one-tenth of jobs not held by college graduates would be better staffed by college graduates, such findings challenge the notion of 'over-education'.

In 1979, university and vocational college graduates were also asked to rate job characteristics as summarised in Table 7. In general, highly qualified manpower seems to consider jobs very demanding, presitgious and satisfying.

In a survey in 1980, employers of firms were asked to state reasons for employing more graduates during the preceding five years. As Table 8 shows, substitution due to high supply or over-supply of graduation only seems to be a subordinate cause for employing more graduates. Most employers considered more demanding job roles to be the major cause.

5. Higher Education Policy and its Manpower Implications

In the early postwar period, higher education policy in the Federal Republic of Germany aimed at reconstructing facilities and offering opportunities of study for the war generation. Around 1960, the need for systematic expansion of higher education was felt in terms of pressure of the

Table 7 Job Characteristics Rated by Graduates of Engineering, Economics/Social Science, All Universities and Colleges, Vocational Colleges and by Total Labour Force (percent stating "prevailing")

Job characteristics	Engineering graduates	Economics/ social science graduates	All university and college graduates	All vocat-ional colleges graduates	Total labour force
My job is well paid	38	50	43	38	37
My job requires little red tape work	13	17	21	13	33
My job leaves much time for my family	11	16	18	18	27
There are possibilities for autonomous actions	62	71	67	67	55
My job leaves plenty of time for hobbies	10	15	14	14	21
My job is fully occupying	86	80	84	80	70
Common sense is applicable in my job	87	86	87	88	73
My job provides the opportunity to satisfy human desire to strive for new knowledge	29	26	29	23	11
Finding pleasure in theoretical problem-solving is needed in my job	44	42	39	44	21
My job offers opportunities for promotion	36	35	27	33	25
My job is highly regarded in society	42	46	38	33	28
My job permits me to carry through ideas	59	52	48	49	32
My job offers the opportunity to help others	39	53	59	37	45
In my job one travels frequently	31	31	23	37	23
My job permits arrangements with colleagues of how to divide job tasks	42	39	41	53	37
My job requires an autonomous application of skills and abilities	74	74	76	77	62
My job permits me to choose my own pace	44	54	41	47	44
There isn't any permanent control of my job	51	54	50	54	47
My job provides much variation	66	65	60	65	52
In my job I frequently have to work under time pressure	66	64	57	67	49
In my job I work under pressure to economize	49	32	26	46	20
My job is enjoyable	71	67	71	66	57

Source: Akademiker in Deutschland. Hamburg: Spiegel-Verlag 1979, pp. 32, 137-140.

Table 8 Reasons for Increasing the Number of Positions for University and Vocational College Graduates in Private Enterprises (percentage of firms increasing the number of graduates)

Reasons stated	Economics and business graduates				Engineering graduates	
	During the past 5 years		... next 3 years		During the past 5 years	
	University graduates	Vocat college grad	Univ. grad	Vocat college grad	Univ. grad.	Vocational college graduates
Growth of enterprise	29	32	27	18	19	21
Positions became more demanding	54	51	70	74	65	30
Organizational change	20	22	16	18	38	51
Reaction to increased supply	13	14	6	11	3	16
Take-over of tasks previously delegated to other organizations	16	5	16	5		

Source: Claus KEMMET, Hermann LINKE and Reinhard WOLF: Studium und Berufschancen. Herford: Maximilian-Verlag 1982, pp. 18, 20 and 35.

growing number of secondary school leavers. Also, the debate of the "Sputnik shock" had some carry-over effects on the Federal Republic of Germany in the late 1950s.[17]

In 1963, the famous warning was published about the "German educational catastrophe", according to which the economy would falter dramatically in the future if academic secondary school and college enrolment was not increased substantially. During the sixties, the notion gained some popularity that expansion of education helps both the stimulation of economic growth as well as the reduction of inequality of opportunity. But even around 1970, when such policy met with the strongest support, warnings frequently were expressed about difficulties of graduates to get suitable jobs.

Since about the mid-sixties open access to all fields of study and institutions began to erode, because medical fields and subsequently some other fields in which unit-costs per student are very high did not expand in correspondence to rising social demand. Admission was restricted in some fields which in turn motivated more secondary school leavers to strive for admission in those selective fields.

In 1972, the Federal Constitutional Court principally upheld the right of the Abiturient to enroll as an integral part of the constitutional right to select an occupation freely. The court, however, gave leeway to restricted admission provided the capacity of the university was exhaustively utilized the government could not increase expenses for higher education without endangering other governmental tasks and enrolment growth obviously contradicted manpower requirements.

Although the major political parties took different positions regarding the need and desirability of a substantial increase of student numbers and although the increases of public expenditures on higher education in the late sixties and early seventies was impressive, governments and planning agencies came to the conclusion in the early seventies that it was not possible to finance the extension of the capacity of universities in all fields of study according to the "social demand". This position to keep expansion of higher education within bounds was reinforced by deliberations of the Science Council in 1975 regarding the demographic development: As a reduction of student numbers was predicted in the late eighties due to demographic development, the targets for the expansion of facilities, especially construction targets, were lowered in 1975.

One has to bear in mind, though, that Numerus clausus does not necessarily reduce the total enrolment at institutions of higher education. Some applicants not admitted choose other subjects as a "parking lot" during waiting time, others gave up their hopes and turned to other fields of study, but hardly any of those striving for Numerus clausus fields gave up studying at all. It only affected the pattern of fields of study.

In addition, the concern about the job prospects of graduates rose due to growing economic difficulties after 1973 and the first cobweb effects of the preceeding expansion of highly qualified manpower. Therefore, one would not have been surprised, if public measures to increase Numerus clausus and finally overall policies to restrict admission would gradually have found strong support. But on the contrary, higher education in the Federal Republic of Germany took a surprising turn in 1976/1977 towards what was called "Opening of Higher Education".

This political compromise of all major parties, governments and major interests groups was based on two major considerations. First, as already mentioned, concern about over-competition due to Numerus clausus supported the view that action had to be taken in order to avoid general deterioration of the educational system. Second, the argument gained widely support that an "opening of higher education" was needed in order to avoid untolerable educational disadvantage of those age groups belonging to the demographic "heap". For, if the intake of higher education did not grow, an increasing number of graduates of academic secondary education would turn to apprenticeship training thereby "displacing" other secondary school leavers and forcing them out of any vocational training.

The policy of "opening higher education" was very successful, if we take the measures and their expected outcomes as a yardstick. For, whereas staff and facilities increased by less than 5 per cent within five years, the number of students grew about 30 per cent; expansion could be realised in a very cheap manner. Second, moderate modifications of the admission scheme indeed reduced the "run" towards Numerus clausus fields.

In addition, the labour market for graduates deteriorated less than expected. Private industry and services absorbed by far more graduates than predicted in the mid-seventies. In some fields, for example, mechanical and electrical engineering, even a shortage of graduates was felt in the early eighties. Employers' representatives publicly conceded that their predictions in the mid-seventies had been too restrictive.

For various reasons, the debate intensified recently about employment problems of graduates and about possible increase of Numerus clausus fields of study:

- There are fairly valid forecasts predicting a 70 per cent increases of the share of university graduates among potential new job seekers from 1980 to 1990. This is by far a higher increases that those in former decades.[16]
- There has always been a widespread feeling in the Federal Republic of Germany in the last twenty years that higher education expands beyond the needs and that the shortage of skilled labour is increasing; the general confidence in the German apprenticeship system supported that view. Since political moods got more conservative and since the Christian Democratic Party took over the Federal Government in 1982, many people expected efforts of the new government to restrict student numbers.
- The unemployment quota rose dramatically from 1980 to 1983. College graduates undoubtedly have been affected by the general deterioration of job outlooks.
- The increasing numbers of student without corresponding growth of facilities and staff size caused a growing concern about the quality of higher education.

One major action taken was the decision of the new government to transform the students aid system from a grant scheme to a loan scheme. I doubt that further major actions will be taken to reduce the further increases of student numbers. First, an increase of the number of Numerus clausus fields would 'push' more students to those fields which face serious graduate unemployment problems. Secondly, the earlier notion that expansion of higher education endanger the supply of skilled labour has lost its basis, because unemployment of skilled labour grew rapidly in recent years - more than graduate employment.

It is interesting to note that policy regarding the relationships between higher education and employment which had been primarily "quantitative" from the early sixties to the mid-seventies has recently diversified. More

emphasis was placed, first, on curricular matters: whether broader curricula, new types of specific course programmes, a higher quality of teaching on learning or a vocational approach might brighten the job prospects of graduates. The debate about an 'orientation toward practice' is the most obvious example.[17]

Second, efforts increased recently to change the pattern of courses. For example, many university representatives and politicians suggests to introduce a multi-stage model. Instead of most German students graduating with a diploma more or less equivalent to a Master's degree in other countries, they suggest to introduce an earlier stage of first final examination and thus a degree equivalent to a bachelor.[18]

One might criticize the various models and proposals, but in any event, higher education policy might get wiser in considering employment aspects appropriately, if aspects of quantitative development, structures of institutions and courses of study as well as curricula are not seen isolated, but rather as interacting.

6. Some Implications for Asean Countries

As pointed out in the introduction, the case of the Federal Republic of Germany cannot be presented as a model, but rather as an information underscoring the variety of options in higher education and manpower planning. Three aspects of the German experience might be especially noteworthy for research and policy in Asean countries.

First, the German experiences might make one aware of the potential misconceptions of the relationships between higher education and employment if they just focus on 'quantitative' matters. The deliberations ought to integrate quantitative, structural and qualitative matters of learning and jobs.

Second, the German experience shows that stereotype views regarding 'over'-education or 'mis'-education did not prove to be good foundations of forecasts. More detailed analysis is needed about reasons for unexpected increases of graduates' jobs and about graduates not taking over jobs traditionally considered appropriate.

Third, the tradition of German universities forced higher education policy in the process of expansion not just to accept substitution and processes of

partial erosion of the quality of higher education but to ask seriously how changing higher education programmes might serve also changing jobs. Maybe this will help in the long-run to conceive graduate employment in jobs traditionally not considered appropriate not just as an unhappy incident and a loss, but rather a challenge for a new quality of higher education.

Notes

1. Ulrich TEICHLER and Bikas C. SANYAL: Higher Education and the Labour Market in the Federal Republic of Germany. Paris: Unesco Press 1982, pp. 40-51.

2. On manpower projections see Manfred TESSARING: "Labour Market and Educational Forecasts in the Federal Republic of Germany," in: R. AVAKOV et al. (eds.): Higher Education and Employment in the USSR and in the Federal Republic of Germany. Paris: UNESCO, IIEP 1984, p. 197-211.

3. For more detailed information, see Hausgert PEISERT and Gerhild FRAMHEIN: Systems of Higher Education: Federal Republic of Germany. New York: International Council for Educational Development 1978.

4. On access to higher education see Ulrich TEICHLER: "The Federal Republic of Germany," in Burton R. CLARK (ed.): The School and the University. Berkeley, Cal.: University of California Press 1985, p. 45-76.

5. On quantitative development of higher education see Wissenschaftsrat: Zur Lage der Hochschulen Anfang der 80er Jahre. 2 vols. Koeln 1983.

6. See Ulrich TEICHLER: "Oeffnung der Hochschulen" - auch eine Politik fuer die 80er Jahre? Bremen: Senator fuer Wissenschaft und Kunst 1983.

7. Armin HEGELHEIMER: Strukturwandel der Akademikerbeschaeftigung. Bielefeld: Universitaet Bielefeld 1984.

8. Laszlo ALEX: "Absolventenangebot und berufliche Flexibilitaet," in U. LOHMAR and G.E. ORTNER (eds.): Die deutsche Hochschule zwischen Numerus clausus und Akademikerarbeitslosigkeit. Hannover: Schroedel 1975, p. 92-105.

9. Hajo RIESE, Die Entwicklung des Bedarfs an Hochschulabsolventen in der Bundesrepublik Deutschland. Wiesbaden: Steiner 1967; see also HUEFNER, KOEHLER and NAUMANN, op.cit., pp. 67-72.

10. See Ulrich TEICHLER and Bikas C. SANYAL: "Higher Education and the Labour Market," in R. AVAKOV et al. op. cit., p. 89-184.

11. See the overview in Rolf HOLTKAMP and Ulrich TEICHLER (eds.): Berufstaetigkeit von Hochschulabsolventen. Frankfurt and New York: Campus 1983.

12. R.W. PETERS and M. POLKE: Beruf und Ausbildung der Ingenieure, Duesseldorf: Verein Deutscher Ingenieure 1973, pp. 58-64.

13. See Friedemann STOOSS, "Ausgewaehlte Befunde zur Situation der Hochschulabsolventen in der Bundesrepublik Deutschland im Jahre 1979," in Mitteilungen aus der Arbeitsmarkt- und Berufsforschung, Vol. 12, No. 4, 1979, p. 617.

14. On these early developments see Klaus HUEFNER and Jens NAUMANN: Konjunkturen der Bildungspolitik in der Bundesrepublik Deutschland. Band I: Der Aufschwung (1960-1967). Stuttgart: Klett 1977.

15. See the more detailed overview on the seventies in TEICHLER and SANYAL 1984, op.cit.

16. For detailed data see Bund-Laender-Kommission fuer Bildungsplanung und Forschungsfoerderung: Kuenftige Perspektiven von Hochschulabsolventen im Beschaeftigungssystem. Bonn 1985, mimeo.

17. See the overview on the debate in Norbert KLUGE, Ayla NEUSEL and Ulrich TEICHLER: Praxisorientierung des Studiums. Bonn: Bundesminister fuer Bildung und Wissenschaft 1981.

18. George TURNER: "Massenuniversitaet und Eliteausbildung?" In: Deutsche Universitaetszeitung, Nr. 7, 1983.

V.

FURTHER EDUCATION AT UNIVERSITIES IN THE FEDERAL REPUBLIC OF GERMANY

1. Introduction

Further education is one of the tasks of the universities in the Federal Republic of Germany. To a limited extent, German universities have been offering courses on adult education for many years.[1] In the 1960s when basic changes in the structure of the education system were being discussed, the idea was carried through that the universities should be offering studies in further education apart from the regular courses and seminars. Eventually, in the 1970s, further education was officially established as a function of the universities.[2] In the early 1980s there was a marked increase in opinions expressed and research projects carried out on further education at universities[3] which can be seen as a sign for the increasingly significant role further education will play in the future.

Yet it would be exaggerated to maintain that further education has developed into a central university activity. Whilst further education plays a very important role in, for example, Great Britain, Sweden, the United States of America, Australia and East European countries, in the Federal Republic of Germany - and this is probably true for Japan too - it is a complementary activity of limited scope. Thus one cannot just portray the development of

further education at the universities without also investigating how such differences between countries arise and noting what conclusions can be drawn therefrom for the future of further education at universities.

2. Developments and Debates

Further education at universities is not a completely new phenomenon which has only been a topic of discussion since the end of the Second World War. Various courses were held prior to this to inform people about further education. In the Weimar period, various forms of cooperation developed between the universities and institutes of adult education. It should also be borne in mind that there were more students enrolled at the German universities who had already been working for some time than at Anglo-Saxon institutions of higher education.

After the second World War the need for developing further education at universities was emphasised in numerous reform proposals. These were particularly concerned with a general course of study for university graduates, with advanced occupational training for university graduates and with the spreading of further education to a wider section of the population. Some of these reforms were adopted in the British occupied zone. Several universities established special positions for adult education. The University of Goettingen offered "seminar courses" based on an English prototype in various towns in its environs. All in all however one can say that the initial post-war discussions did not have a particularly lasting effect: further education remained a secondary field of activity for the universities.

In the mid-1960s there was a substantial change in the political views on education in the Federal Republic of Germany. It was considered desirable to expand education in order to meet the economic demand and to reduce educational inequality. In 1966 the Science Council demanded that university graduates, in employment, be able to return to university to attend courses there.[4] In 1968 the University Adult Education Commission (Arbeitskreis Universitaere Erwachsenenbildung) was formed - an alliance of university teachers concerned with the development of further education at universities. In 1970 the Education Council called for increased participation on the part of the universities in further education.[5] The extent to which these ideas went can be seen in the example of the overall education plan of 1973: according to

this it was to be provided for that until 1980, 40 percent, and until 1985, 60 percent of all university graduates could participate in a 3 week course on further education within a period of 4-5 years.[6] In order to achieve this task (which involved the equivalent of 30,000 places of study) the plan intended to establish "places of contact for academic further education within the universities".

The "Framework Act for Higher Education" 1976 established further education as an official task of the universities, following research and training.[7] Article 2, paragraph 3 reads: "The universities serve studies in further education and take an active part in courses of further education. They support the continuing education of their staff." In subsequent years the functions of further education were firmly embodied in the university legislation of all Federal states.

At the time of passing this legislation the plans for extending further education were put to one side. This was due firstly to the belief that the costs involved in the sweeping reform proposals for the education system could not be borne. Secondly one was able to ascertain at the time that, for demographic reasons, the number of those receiving initial education and training and thus, also, the number of students would greatly increase in the period up until 1985 and decrease thereafter: It appeared that expansion of further education on a large scale could only take place after 1985.

This does not mean however that further education at universities did not undergo any development at all. Up until 1982, 28 special institutes for the coordination of further education at universities came into existence. 32 "model experiments" supported by the Government and the individual states carried out trials on further education at universities. The Open University of Hagen which was established in 1974, played a very important role. The Federal Ministry of Education and Science supported various research projects in this area - a survey of further education at universities related to careers, analyses and models of "study combined with career" and various research projects of the University Adult Education Commission.

In the early 1980s an intense discussion developed on the future role of further education.[8] Opinions were expressed by, among others, the Science Council, the West German Rectors Conference, employers and trade unions. These revealed (as will be shown later), in spite of differing statements on

several aspects, certain fundamental features of further education which had strong support.

3. Quantitative Scope

It is not easy to carry out a quantitative survey of the extent of further education at universities because the statistics in this field of education are not so consistent or informative as those in the area of general education and vocational training.

A representative survey from "Infra-Test", a poll institute, carried out on the adult population of the Federal Republic of Germany in 1979 revealed that 23 percent of 19-64 year-olds had attended courses of further education during that year. 10 percent had attended courses on further vocational/professional studies, 12 percent on further general studies and 2 percent on further political studies. At the same time 2 percent of those questioned indicated that they had taken up a new course of training and 3 percent mentioned further types of continuing education. Further vocational/professional studies had taken place at universities, academies or learned societies in 6 percent of the cases; further general and political studies in 7 percent of the cases.[9] One can assume that the larger share did not relate to the universities; according to these figures one can thus conclude that less than 3 percent of further education took place at universities.

Scholars at the Technical University Berlin (Project Prognosis of Academic Further Education -'PROWIS') estimated that only .5 percent of all courses of further education were carried out by the universities. This estimate relates to the year 1979.[10]

PROWIS investigated the extent of professional-related university-level further education in select areas of study of university graduates. Included were doctors, lawyers, teachers, psychologists, administrative careers, economic careers and engineers. The estimate was that in 1979, on an average, every fifth university graduate attended further education courses which generally lasted 3-4 days. Only 5.8 percent of these courses for university graduates were organized by the universities themselves; 40 percent of the course lecturers on the other hand were members of the university. The universities thus appear to take a more active part in the teaching side of further education than in the organizational side.

The same research group examined the courses in further education provided by the universities and the non-university institutions of higher education. This survey, however, included only the higher education level further education courses; omitted thereby were the courses for the non-professional university staff. According to this study the majority of universities and 20 percent of the so-called Fachhochschulen offered in 1980 courses of further occupational X studies. The number of courses at the Fachhochschulen amounted to 44 percent of the university courses, that is, more than the corresponding percentage of regular studies.[11] In 1983 the University Adult Education Commission carried out a survey on well-established central institutes for further education at universities. All in all there were 28 such institutes in 1983, 24 at universites, comprehensive universities and teachers' training colleges (91 institutions altogether) and 4 at Fachhochschulen (more than 200 institutions). The 26 central institutes which took part in a survey offered, within the course of a year, 1,300 courses, seminars and conferences with approximately 32,000 participants; they were involved in holding 28 courses of study in further education with 3,800 students; they carried out 464 courses of further education for the non-academic staff of the universities with approximately 6,400 participants; finally four central institutes took over the local supervision of students from the Open University of Hagen.[12]

The Open University of Hagen also plays an important role in further education even though the greater majority of its students are not any older than pre-career students. There was a total number of 24,000 students at the open university in 1982; approximately half of these are "regular students" who wish to attain a university degree.[13]

4. Functions

The functions of further education at the universities are set down in the individual state laws yet they still provoke a lot of controversial debate. This discussion shows that, according to those involved, it is not only a question of the profile of further education at universities but the profile of the universities as a whole.

In the discussion it is emphasised again and again that the universities concentrate on "academic", i.e. college-level further education. Further

education at all levels is clearly not desired; this would be viewed by other institutions as undesirable competition and by the universites as lowering their own standards.[14] The interpretations vary however as to what "academic" means in this context. For a long time the West German Rectors' Conference and several other organizations saw the possibility of such a delineation with respect to the recipient: further education for university graduates only. In the meantime however an understanding has been reached that the "academic" nature of further education is to be defined by the content and method and that this form of further education is to be open to individuals without "Abitur" (the school-leaving examination, qualifying for admission to a university), or a university degree, as long as they have gained suitable qualifications in the course of their careers.[15]

The most important task of the university in the field of further education are the further education course programs. These do not consist of single lectures but rather a complete course program which can lead to an important professional qualification: for example studies in "Labour Economics", "Energy Technology", "Mathematics for Computer Speciallsts", "Management" etc. These courses are generally seen as complementary to an already complete degree course; in the majority of cases participants without a degree are also admitted to the courses, whereby differing forms of qualifying examinations are conducted from time to time. Many such course programs are inter-disciplinary.

The extent to which further education studies should be open to individuals without university qualifications and the degree to which certificates should be incorporated in the traditional system of grades and qualifications are particularly controversial. The University Adult Education Commission argues for relative openness and a ready incorporation of certificates into the customary structures[16] whilst the Science Council and West German Rectors' Conference speak out for limited access to further education studies and for graded certificates, that is, they clearly wish to stem the consequential effects of further education studies on "regular" studies.

Part-time regular studies are provided only at the Open University of Hagen in a limited number of subjects. The German universities offer "adult" students a certain flexibility in that the courses of study are generally not

organized into closed study groups and that the compulsory length of study is not normally adhered to. According to a representative study in 1982, 27 percent of those studying were over 25 years of age; approximately 20 percent had completed a course of vocational training and almost every tenth student had been employed for at least two years.[17] There is still a lack of courses however designed for those wishing to study and work.

As part of the project "Study Combined with Career" a survey was carried out on adults without "Abitur" certificate to determine the extent to which they were interested in studying. The investigation established that approximately 2 percent of 25-65 year olds who had completed occupational training below university level, would like to take up such a course of study if the appropriate legal and institutional conditions existed. Seen in terms of the total population this results in a figure of 245,000 seriously interested individuals.[13] Up until the present day a negative attitude towards such concepts has dominated politics and the universities: The objection is raised that the level of university education would thereby be lowered.

According to the Framework Act for Higher Education the second function of the universities, besides organising further education studies, is that: "The universities .... participate in courses of further education". The open wording points to the fact that in other areas of further education, for example in shorter refresher courses for university graduates, the university is only one of several organizations. It is thus often suggested that the universities should cooperate with other further education institutes in order to contribute to the expansion of academic further education by means of common courses, exchange of lecturers, development of further education models etc.

It remains undisputed that the universities should present their academic achievements and outcomes, in the form of lectures, to the public. In principle, it is also generally considered to be appropriate that the universities offer refresher courses for university graduates; yet the number of universities which offer such courses is still very small, as already pointed out. The extent to which the universities should offer other kinds of further education and who the recipients of it should be form one of the principle themes of the controversies. It is often the courses which are not limited to graduates which raise discussion on standard and academic method. Other institutes of further

education often protest against an extension of the universities' functions with respect to further education claiming that the universities are, from an organizational and didactical point of view, not in a position to carry out more such tasks; at the same time the fear is expressed that the universities, subsequent to the expected decline in student numbers in the 1990s, could harm other institutes of further education; they thus demand that the universities charge fees for such courses in order to avoid unfair competition with other institutes of further education.

The third function of further education, according to the Framework Act for Higher Education is that: "The universities .... support the further education of their staff". Particularly at the universities which have established central institutes for further education there are many courses provided for the non-academic staff.

The University Adult Education Commission regularly refers to a fourth function of the universities in respect to further education: The training of teachers for further education. In 1979 there were 26 universities which offered, as part of the university Diploma, a course in Pedagogy, an area of emphasis on adult education; the number of students totalled 3,300. From a survey carried out in 1982 eight universities were offering teacher training courses in adult education for teachers of the same.[20]

5. Organisational Problems

The universities in the Federal Republic of Germany are, from an organizational point of view, not adjusted to further education.[21] This is also true of the attitudes and qualifications of the majority of university lecturers:

- Since a high standard of research-oriented education is stressed, further education is constantly plagued by the fear that one takes over functions beneath this level.
- The university teachers have a lot of freedom as far as lecture times, attendance at the university and the extent of counselling are concerned: The demands connected with courses of further education for working people could therefore be viewed as additional, onerous tasks, even if the courses are part of the paid teaching program.
- Many university teachers who work as teachers of further education for other institutes are threatened with a loss in supplementary income if

the university itself becomes more engaged in further education.

- The greater majority of university teachers does not attach importance to didactical questions which should play a more significant role in further education.
- Teaching further education courses demands from the individual university teachers that he or she comes to grips with other disciplines and with problems connected with professional practice; discussions about a greater emphasis on relating study to practice have made it clear that many university professors are not trained in such duties and are not prepared to become so.

In the Federal Republic of Germany, there is no serious consideration to teach further education in specialised institutes or faculties for further education; the teaching of further education should, on the contrary - apart from part-time lectureships for "practised hands" - be carried out by those who are also responsible for pre-occupational study programs. In this way, an expansion of further education is dependent upon the fact that university teachers change their attitudes with respect to their teaching function and gain more corresponding qualifications. For those taking on further education tasks, proposals such as teaching allowance relief or the payment of honoraria, organizational support with the courses and additional didactical training are all worthwhile but do not suffice alone.

From an organizational point of view the universities do not more or less automatically obtain more functions with respect to further education. Undoubtedly further education is offered on a larger scale more systematically and constantly at those universities where there is a "place of contact for further education" or an otherwise named central institute of further education. Based on experience, such central institutes are indispensable:

- as continuous and competent partners for external bodies e.g. other institutes of further education,
- for information and counselling to potential and actual participants of further education,
- in analyzing the need for further education and available potential for further education at the universities,
- for the didactical support of the teachers,
- for the research and evaluation needed to support the qualitative improvement of further education.[22]

On the other hand it may vary from university to university whether the current planning and organization of the further education programs are carried out by such central institutes or by special commissions which may be established at a department level or at a university level. The universities may also intensify cooperation with other organizations by means of joint committees. Finally it is often proposed that departments which teach further education on a larger scale engage a professionally trained employee to carry out organizational duties.

There is no general consensus among the universities that central institutes of further education should be established. The disapproval which is often encountered arises partly for financial reasons, but above all because of fundamental considerations. The Science Council, for example, suggests that all such functions be carried out by either the commissions for further education or by the general university administration.[23] The fear is clearly visible here that central institutes could support aims and methods of operation which differ from those of the university teachers and that a separate teaching body for further education could develop. Fears of institutional independency are understandable: at the same time, however, these reservations are emphasised to hinder further education from becoming a central university activity and from having even greater consequential effects on research and regular teaching and learning. Several problems arise from a financial point of view, too. Such high costs arise in the handling of the demographic "student bulge" that few staff members can be appointed to tend to further education at an organizational level. Questions about appropriate fees are, on principle, seldom settled. There is still a lack of flexibility in the management of state universities - a flexibility which could pave the way to a ready economizing of revenue or to financial cooperation with institutes of further education.

6. Future Prospects

From the development of further education at universities and from the discussions in the last few years the following lines of development can be expected in the future:

(1) University further education has its "profile", its nucleus in "academic further education"; "academic" or university level is defined by the nature of

further education, not by the supporting institutions or by the recipients.

(2) Academic further education will gain in standing in the future whether it be due to the increasing demand for this type of further education on the part of potential participants or to the fact that the universities themselves become the central force in disseminating academic further education.

(3) The universities have great potential for expanding further education; they will utilise this to a greater extent in the future, yet further education will not attain the same recognition at first as the hitherto dominant functions of the university for society: provision of pre-occupational study as well as research.

(4) The university potential for further education will only be put into action on a large scale when, in contrast to the prevailing methods of operation of the universities, clear changes in emphasis take place:

- in content and forms of presentation of further education,
- in the organization of the courses (e.g. time structure, admission, certificates, supervision),
- in arranging of duties and working method of the university teachers,
- in the organizational infrastructure of further education.

(5) Further education at universities experiences a lot of support in public declarations; yet, in fact, within and beyond the universities reservation prevails. The changes which are necessary for such tasks appear to be manifold; consequential effects on other university functions are generally not desired; on top of this there is the heavy burden to bear with the constantly growing number of "young" students. A change in attitute favouring expansion of further education has still to take place.

(6) There is a strong probability however - at least, within the universities - that attitudes will soon change. Thus it is not just mere coincidence that the current President of West German Rectors' Conference refers to the Importance of further education for the universities in revealing their significance for society.[24] One can assume that the decline in student numbers which is expected in the 1990s[25] will increase the readiness to become engaged in further education. Many of those involved in the discussion on the function of universities in further eduction point out that motivating a preservation of resources in the face of declining student numbers is not a desirable motive for a change in attitudes; yet the universities in the Federal

Republic of Germany can scarcely take upon more functions in further education without a large change in attitudes taking place first. Only then can one expect further education at universities to become a stimulating field for other areas of further education in the Federal Republic of Germany.[26]

Notes

1. On the history of further education at universities see Peter FAULSTICH: Erwachsenenbildung und Hochschule. Muenchen: Urban & Schwarzenberg 1982; Wolfgang H. SWOBODA: Universitaere Erwachsenenbildung, Koeln and Wien: Boehlau 1983; Wolgang KRUEGER (ed.): Wissenschaft, Hochschule und Erwachsenenbildung. Braunschweig: Westermann 1982.

2. On the legal basis see Albrecht HATZUIS: "Rechtliche Rahmenbedingungen der wissenschaftlichen Weiterbildung durch Hochschulen", in Recht der Jugend und des Bildungswesens, No. 2, (1983), 149-156.

3. Sie Heidi BEHRENS-COBET and Anneliese HARTKE: Bibliographie Hochschule und Weiterbildung. Hannover: Arbeitskreis Universitaere Erwachsenenbildung 1983.

4. Wissenschaftsrat: Empfehlungen zur Neuordnung des Studiums an den wissenschaftlichen Hochschulen. Bonn 1966, p. 33-34.

5. Deutscher Bildungsrat: Strukturplan fuer das Bildungswesen. Bonn 1970.

6. Bund-Laender-Kommission fuer Bildungsplanung: Bildungsgesamtplan, Vol. 1. Stuttgart: Klett 1973.

7. Siehe George TURNER: "Der Weiterbildungsauftrag der Hochschulen," in Wissenschaftliche Weiterbildung im Spannungsfeld zwischen Hochschule und Oeffentlichkeit. Hannover: Arbeitskreis Universitaere Erwachsenenbildung 1981, S. 14.

8. On the debates since 1980 see "Symposium: Regionale und ueberregionale Aufgaben der Universitaet im weiterbildenden Studium," in Konstanzer Blaetter fuer Hochschulfragen, No. 66-67, 1980; Universitaere Erwachsenenbildung: Sind unsere Hochschulen dafuer geeignet? Bensberg: Thomas-Morus-Akademie 1980; "Hochschule und Weiterbildung," in: Hessische Blaetter fuer Volksbildung, Vol. 31, No. 2, 1981, Wissenschaftliche Weiterbildung im Spannungsfeld zwischen Hochschule und Oeffentlichkeit, op.cit; Joachim H. KNOLL et al.: Weiterbildung und Hochschule. Koeln: Deutscher Institutsverlag 1981; Reinhard KUHLMANN et al. (eds.): Hochschule und Weiterbildung. Koeln: Bund-Verlag; Stellungnahme des 137. Plenums der Westdeutschen Rektorenkonferenze. Bonn-Bad Godesberg 1982, mimeo.

Wissenschaftsrat: Emfehlungen zur Weiterbildung an den Hochschulen, Koeln 1983; Juergen ALLESCH and Dagmar PREISS: Struktureller Wandel und wissenschaftliche Weiterbildung an den Hochschulen. Berlin: Technische Universitaet Berlin 1983.

9. See Friedrich EDDING: "Zur Entwicklung des Wettbewerbs zwischen alten und neuen Traegern der Weiterbildung," in Hessische Blaetter fuer Volksbildung, Vol. 31, No. 2, 1981, p. 126.

10. Juergen ALLESCH, Dagmar BRAUSE und Dagmar PREISS: Bestandsaufnahme berufsbezogener wissenschaftlicher Weiterbildung 1979. Bonn: Bundesminister fuer Bildung und Wissenschaft 1981.

11. Juergen ALLESCH et al.: Weiterbildung an den Fachhochschulen. Bonn: Bundesminister fuer Bildung und Wissenschaft 1982.

12. Zentrale Einrichtungen/Kontaktstellen fuer Weiterbildung an Hochschulen. Hannover: Arbeitskreis Universitaere Erwachsenenbildung 1983.

13. Monika SCHNEIDEREIT and Gunter SCHOLZ: "Fernstudent, was ist das?" in: Gesellschaft der Freunde der Fernuniversitaet (ed.): Jahrbuch 1982. Hagen: Schroeder 1982, p. 95-102.

14. See EDDING, op.cit. p. 14; Wissenschaftsrat 1983, op.cit., p. 13.

15. Joachim DIKAU: "Wissenschaftliche Weiterbildung und universitaere Erwachsenenbildung," in ALLESCH and PREISS, op.cit., p. 161-169.

16. Weiterbildungsaufgaben der Hochschulen. Hannover: Arbeitskreis Universitaere Erwachsenenbildung 1980, p. 8-15.

17. Bundesminister fuer Bildung und Wissenschaft: Das soziale Bild der Studentenschaft in der Bundesrepublik Deutschland: 10. Sozialerhebung des Deutschen Studentenwerks. Bonn 1983, p. 26 and 44.

18. Holger FOELLMER und Helmut THIELMANN: Interesse an einem Studium neben dem Beruf. Hagen: Fernuniversitaet 1984.

19. FAULSTICH, op.cit., p. 103.

20. Ibid., p. 105-111.

21. Various organizational problems are discussed in Juergen ALLESCH and Dagmar PREISS (eds.): Perspektiven der berufsbezogenen wissenschaftlichen Weiterbildung an den Hochschulen im Spannungsfeld von Studentenberg und Finanzknappheit. Berlin: Technische Universitaet Berlin 1982.

22. Ulrich TEICHLER: "Strukturelle und organisatorische Anforderungen an berufsbezogene wissenschaftliche Weiterbildungsangebote der Hochschulen," in: ALLESCH and PREISS 1982, op.cit., p. 105-109.

23. Wissenschaftsrat 1983, op.cit., p. 20-22.

24. Theodor BERCHEM: "Hochschulpolische und hochschulstrukturelle Aspekte der wissenschaftlichen Weiterbildung," in: ALLESCH and PREISS 1983, op. cit., p. 115-118.

25. See Ulrich TEICHLER: "Oeffnung der Hochschulen" - auch eine Politik fuer die 80er Jahre? Bremen: Senator fuer Wissenschaft und Kunst 1983.

26. On future prospects of further education see Helmut BECKER: "Weltweite Entwicklungen und oeffentliches Bewusstsein," in Deutscher Volkshochschul-Verband (ed.): Zukunftsaufgabe Weiterbildung. Bonn 1982, p. 45-54; Ulrich TEICHLER: "Die politische Verantwortung der Erwachsenenbildung," in Deutscher Volkshochschulverband, op.cit., p. 21-39.

VI.

UNIVERSITY STAFF IN THE FEDERAL REPUBLIC OF GERMANY

1. Origin and Structure of Staff

The Humboldtian university reforms leading to the establishment of the University of Berlin in 1810 was recognized internationally in the 19th century as a successful step towards the progress of knowledge and research. The structure of university staff established in the early 19th century continues to shape current debates in the Federal Republic of Germany in spite of the substantial changes which have taken place since that time.

The university staff structure model is focussed only on the position of full professor (Ordentlicher Professor or Ordinarius); eligible candidates should be substantially qualified beyond the stage of a doctoral degree. The minister of education appoints a full professor for each major area of knowledge on the recommendation of the Fakultaet (the department of the university). In the early 19th century the Habilitation was a prerequisite for such appointments. The Habilitation is the procedure by which the department assessed a major scholarly work submitted by the candidate for that purpose. Additionally, the candidate presented a major lecture for assessment before the venia legendi was granted - the right to teach independently at that university.

The successful candidate would negotiate his salary directly with the

government and - to an increasing extent in later decades - his staff requirements, equipment, and the necessary financial support for teaching and research. The full professor was the sole independent representative of his field: He was independent of both collegiate and government control, and his special status as a civil servant assured him freedom from teaching and Wissenschaft - a term meaning 'knowledge' as well as 'research'.

The traditional German university had two other ranks of teaching staff in addition to professorial positions. These positions covered fields considered to be less important than those represented by full professors; positions which could be undertaken by persons in 'non-regular' professor positions (ausserordentlicher Professor) -- a less influential, but paid staff position. Finally, there were the Privat-Dozenten, namely persons who had been granted the Habilitation but who did not hold a university position as such, and whose remuneration came from students' fees.

The 19th century saw the emergence of a chair structure and an institute structure (the latter in charge of research). This was a small institutional unit headed by a full professor. An assistant (and in some cases more than one) might be allocated to a chair, as well as a laboratory, a small library etc. However, there were few junior academic staff positions, for juniors were not employed as teachers in their own right but only in support the professor's teaching. These were badly paid positions. The period of employment was limited to a few years, and there were no collegiate rights within the framework of the department and university. Indeed, until the 1930's there were no provisions for extended periods of employment for persons below professorial rank and, until the 1960's, few rights regarding teaching or votes in the self-administrating bodies were accorded to the lower ranks.

During the 1960's and 1970's many substantial changes took place although some of the old traditions have remained, among which the most noteworthy are the following:

- The university professor represents both teaching and research in his field. The Humboldtian principle of 'unity of teaching and research' has been preserved by regulations which allow university professors to spend about half their time on research. There are, however, a marginal number of professors entitled to a reduced teaching load, and a very few who function only as full-time researchers. The principle of 'unity of

teaching and research', however, applies to only about half of the professional staff in institutions of higher education and research institutions financed from public sources. The majority of junior staff at universities are normally assigned either to teaching or research, while the professors at Fachhochschulen (non-university level institutions of higher education) are only entitled - but not obliged - to conduct research: A substantial share of publicly supported research is conducted elsewhere, notably at Max-Planck institutes, Fraunhofer institutes, etc.

- There is no regular system of promotion for successful teachers and researchers at institutes of higher education since the number of top positions, and indeed the number of all permanent positions, remains limited. Neither do the universities have a promotion scheme which allows the assistants to achieve any professor position, or the lower ranking professors to achieve the higher ranking professor positions in their own institutions. This situation encourages mobility and, generally speaking, those who serve as assistants or researchers apply for vacant professor positions at other institutions.

There were substantial changes in the structure, function, and employment conditions of the academic profession in the Federal Republic of Germany in the early 1960s:

a. The increased numbers of university students brought about an increase in the number of chairs in the various specializations. Indeed two chairs for the same specialization became a widespread phenomenon causing many professors to lose their original unique positions as the only senior representative. This innovation did, however, offer more choice to the students.

b. Efforts were made to promote cooperation between professors. The earlier principle of establishing an institute, or small research unit, around most full professors gave way to larger institutions chaired by the professors on a rotation basis.

c. Larger research units incorporating a permanent professional staff were considered indispensible to scientific progress in many fields. This has the effect of diversifying the types of research staff positions and creating many permanent positions which in turn produces increased salaries.

d. The improved social conditions applied also to scholars who had successfully concluded their Habilitation: Fully-paid positions were established for

Dozenten and Wissenschaftliche Raete und Professoren. Given the conditions of the labour market at large these changes were considered necessary to make academic careers attractive to the most qualified persons.

e. The increasing number of students created a demand for more teaching staff with the result that junior staff were used in this area. On the one hand some permanent teaching positions were established for persons without their Habilitation: the so-called Akademische Raete. On the other hand, assistants undertook increasing teaching loads while the supervision of those courses by professors became more or less nominal.

The most rapid change took place in the early 1960s, when the junior academic staff/professor ratio at all institutions of higher education increased from 2.26 : 1 in 1960 to 2.74 : 1 in 1965. During this five year period the total academic staff of institutions of higher education almost doubled (94% increase).

Substantial changes in the staff structure again took place around 1970:

a. The growing importance and independence of permanent academic staff below the position of Ordinarius, and the general change in political climate towards participation rights, finally led to the abolishment of the chair system. Full professors officially lost their right to negotiate directly about staff and permanent research funds with the ministry of education as the universities and their departments became responsible for distributing funds and allocating junior staff.

b. The distinction of official titles among senior academic staff disappeared: all of them were granted the title 'professor'. Differences of this kind were only visible to insiders on the basis of salary scales: the C 4-Professor, successor to the Ordinarius which accounted for about 40% of the professor positions, retained the right to negotiate his salary with the minister of education if he had received an offer of employment from another university.

c. The junior staff positions were subdivided into first wissenschaftliche Hilfskraefte - academic supportive staff, persons not yet having been awarded their doctoral degrees but employed for supportive functions on a short-term basis. And, second, wissenschaftliche Mitarbeiter - academic staff members primarily in charge of temporary or permanent research tasks supervised by professors and, third, those assistants who were in charge both of teaching and research under departmental supervision.

d. Efforts were made around 1970 to upgrade all academic positions below the extended rank of professors to assistant professors. These positions were supposed to be granted a six-year contract and were intended to assume tasks of teaching and research and have a good chance of promotion to professor: This model was implemented in a few cases but was discontinued after a few years. Since the ratio of junior to senior positions was kept too high in order to secure promotion for the majority of the junior staff, the establishment of the 'assistant professor' turned out not to be the first stage of a career followed almost regularly by subsequent stages.

e. There were substantial changes in the decision-making structure at universities. University senates and councils, department committees etc., now include representatives of junior staff, students, and non-professional staff. The percentage of professors' votes might be less than 50 per cent in some committees in some states. The Framework Act for Higher Education - a Federal Law from 1976, which set a certain degree of homogeniety between the laws of individual states responsible for the supervision of universities - provided a majority of professors' votes (a minimum of 51 per cent) in all important matters of teaching and research.

However, during the 1980s, some of the reforms summarized above were gradually challenged. The Hochschulverband, the association of university professors, claimed that the participation model was detrimental to the quality of universities. A committee established by the Federal Minister of Education and Science concluded that junior staff should again be directly supervised by the individual professor and generally employed on a short-term basis: it was considered that the intermediate ranks between assistant on the one hand, and professor on the other, should be given short-term contracts rather than permanent employment. Finally, efforts are being made to stress the differences between the various ranks of professors in terms of titles, functions and privileges. It is difficult to predict the final outcome of this process of change which is likely to continue for some time yet, some of these proposals, however, were incorporated in the revision of the Framework Act for Higher Education which was passed in 1985.

2. The Academic Career Prior to a Professor Position

Children in the Federal Republic of Germany begin school at about six or

seven years of age. Thirteen years of schooling - in most cases four years primary school and nine years academic secondary school - are required for admission to university. Students enroll at institutions of higher education at about 20 years of age because of various intermissions such as vocational training, military service, travel, etc. Although a university course might require only 4-4½ years, the average period is about 6 years. The first degree awarded at the end of a university course - the masters, diploma, or state examination - is considered to be equivalent to the Anglosaxon masters, and is usually awarded by about 27 years of age.

Traditionally a person following an academic career was not required to pass a final examination prior to his or her dissertation and the accompanying exam. This gradually changed during the post-war period with students now being required to hold a degree before commencing doctoral work. However, even in 1980, almost 9 per cent of doctoral degrees were awarded to persons who had passed no prior examination. Students in the field of medicine submit their doctoral dissertations more or less concurrently with their state examination; the doctoral degree in medicine, thus, does not indicate any stage of education beyond the first degree which is why medicine was excluded in the overview of basic data on academic careers in table 1.

In most fields of study there are a few years of learning required between receiving the university degree and doctoral promotion. The number of degrees awarded in 1960 was 14 per cent of the number of first (master, diploma, state examinations) degrees. This figure decreased to about 10 per cent in 1980. Only one out of 7-10 university graduates will successfully conclude this stage which might be the first stage of the academic career.

German universities do not generally provide systematic graduate courses. A university graduate has to apply at a university for acceptance as a Doktorand, a candidate for doctoral promotion. In most cases the individual university will require one year of study or employment at the institution awarding the doctoral degree. The decision whether any course work is required and, if so, what kind of courses, rests in most cases with the professor assigned to supervise the dissertation. During this period of 3-5 years the candidate works on his dissertation, he might be supported by a doctoral fellowship provided by a state government or a foundation, or he might be employed as a wissenschaftliche Hilfskraft (academic supportive staff),

Table 1 Beginner Students, Degrees and Academic Staff at Institutions of Higher Education (Except Medical Fields) in the Federal Republic of Germany 1960-1980

Year	Professors	Other academic staff	Doctoral awards	First Degrees	Beginner students
a University - level institutions*					
1960	5,160	7,851	3,811	24,515	56,456[1)]
1965	8,671	18,196	3,930	35,447	54,228[2)]
1970	12,740	26,212	5,320	40,924	84,117[3)]
1975	20,804	33,531	6,600	63,526	114,835[4)]
1980	21,678	32,461	6,300	61,452 5)	127,277[4)]
b. Fachhochschulen					
1960	263	1,895	-	11,800	20,628
1965	585	3,030	-	16,200	26,457
1970	1,477	3,957	-	19,800	29,233
1975	8,200	837	-	31,900	41,525
1980	8,474 5)	400 5)	- 6)	34,700 6)	43,591 5)

*) Universities, teacher colleges, comprehensive universities, art colleges etc.

1) Bundesminister fuer Bildung und Wissenschaft: Grund- und Strukturdaten 1974. Bonn 1974, p. 67 (inlcuding veterinary medicine)

2) Without Schleswig - Holstein

3) 1971

4) Bundesminister fuer Bildung und Wissenschaft: Grund- und Strukturdaten 1982/83. Bonn 1982, p.120

5) Wissenschaftsrat, (ed.): Zur Lage der Hochschulen Anfang der achtziger Jahre, Statistischer Anhang. Koeln 1982, pp. 19.85.87, 104-5.

6) Buttgereit, Michael: "Quantitative Entwicklungen im Hochschulwesen der Bundesrepublik Deutschland mit besonderer Beruecksichtigung des Verbleibs der Hochschulabsolventen," in Hochschulexpansion und Arbeitsmarkt. Nuernberg: Institut fuer Arbeitsmarkt- und Berufsforschung der Bundesanstalt fuer Arbeit 1983, p. 212-21.

working for some hours, or perhaps holding a half-time position, but in any event earning sufficient to cover modest living expenditures while allowing the candidate unpaid time for study. In addition to these two main systems the graduate might also be employed outside the university while working part-time on his dissertation. Some candidates are fortunate enough to be fully employed as research associates at a university or research institute, being either permitted to spend part of their salaried work on a dissertation, or to work on it during spare time.

In many cases the doctoral degree is awarded at the age of 30-32 years, and this is followed by the second stage of a junior staff career which is considered to be the major stage. It is pertinent to mention here that only a small proportion of those being awarded doctoral degrees eventually become university professors. As table 1 shows, the number of university professors in all fields except medicine was about 221.678 in 1980. If the age distribution was even, and if the number of positions remained constant over time, the replacement demand and the number of vacant positions would be - according to the Science Council a professor serves an average of 24 years - about 900 professors each year. Thus, only one out of seven persons being awarded a doctoral degree will eventually become a university professor.

The Framework Act for Higher Education of 1976 made provision for two types of junior staff positions:

a. The Hochschulassistent who is responsible for conducting independent research, for teaching, and for rendering services to the department: the preparation of the Habilitation is considered part of the assistant's work assignment. The department commissions one professor to supervise his work. The assistant is employed as a temporary civil servant for a period of three years which in most cases will be extended by a further three years.

The Permanent Conference of the Ministers of Education of the States in the Federal Republic of Germany recommended in 1980 that there should be a ratio between positions for assistants and professors which would ensure 60 to 80 percent of assistants becoming professor. But in spite of this, fewer than 60-80 per cent of assistants will eventually become professors because of the considerable number of professors who have never been junior staff members of universities. These professors will have been fellows in other public research institutes, or employees of other public or private institutions which

are not pimarily responsible for research.

b. Academic staff members (Wissenschaftliche Mitarbeiter) cooperate with professors in various areas of teaching and research. In contrast to the assistant positions, academic staff members are not always required to have a doctoral degree prior to taking up their positions. Furthermore, there is no general norm of employment; the professional staff member might be temporarily or permanently employed as an employee - corresponding to an employee in a private firm - or possibly as a temporary or permanent civil servant.

If we observe the various state laws and the structure of positions at individual universities, as well as the functions of these two types of junior staff, we will see that there are no specific regulations concerning the distinction between independent and service functions, nor regarding the opportunity to work on a dissertation of Habilitation as part of the regular work tasks or during spare time. It is therefore not surprising to note that most reform proposals challenge the lack of clarity about this division. One might argue that theoretically two different forms of staff positions are generally considered reasonable which, in practice, cannot be clearly divided. On the one hand there is the position of a prospective professor who takes the risk of temporary employment but at the same time has the privilege of using part of his working time for the Habilitation, and on the other hand there is the academic staff member who might fulfill regular teaching tasks, research, or both, at a lower level than the professor. The latter might be temporarily employed to begin with but some might transfer later to permanent intermediate positions.

The transfer point from the second to the third stage is the so-called 'Habilitation'. In 1980, 1,019 persons were awarded the Habilitation, of which 660 were in non-medical fields; the average age of persons awarded a Habilitation was 38 years. The holder of this advanced degree is granted the right to teach independently at institutions which award degrees. Such persons usually become professors in the long term.

The third junior stage of academic careers addresses persons who have been awarded a Habilitation but who have not yet been offered a position as professor. As the average age of professors and also the replenishment demand is presently very low in some disciplines, efforts have been made in

recent years to increase the numbers in the third-stage position.

Persons of that rank traditionally receive no salary, their income being derived from students' fees. For some decades, such Privat-Dozenten have gradually been substituted by salaried Dozenten, Wissenschaftliche Raete und Professoren etc. The Framework Act for Higher Education no longer provides this kind of position; however, it is possible to employ such persons as assistants for six years even if the Habilitation was awarded in a shorter time. In addition, such a person might be temporarily employed as a C 2-professor; in 1981, only 2 per cent of all university professors were employed in this way. Finally, a special fellowship programme, the so-called Heisenberg-Stipendium, was introduced in the late 1970s to support young qualified scholars waiting for professorial positions.

In 1984 the commission established by the Federal Minister of Education and Science to review the Framework Act for Higher Education suggested the introduction of a senior assistant position (Ober-Assistent) for this third stage of junior staff - a position which would provide temporary employment for four years. This model, which was legally enacted in 1985, was criticized by unions because such conditions could result in an academic career consisting of a sequence of temporary employment contracts, possibly for as long as fifteen years.

3. Recruitment and Appointment of Professors

In the Federal Republic of Germany a junior staff member cannot be promoted to professor in his own university. There is no framework for an internal promotion scheme, nor is there an internal decision-making process in the university: the various regulations are aimed at preventing any parochial promotion:

a. Vacancies for professor positions have to be publicly announced and advertised, for example in newspapers, weekly papers, and professional periodicals.

b. Members of the institutions offering such positions can only be appointed in exceptional cases.

c. The university proposes three qualified candidates from among the applications. The final selection and appointment decision rests with the Ministry of Education of the corresponding state which might appoint one of

the three persons proposed or, in exceptional cases, might call for a new list of candidates, or might even appoint someone who had not been proposed.

University professors cannot be promoted internally from one rank to another (C 2, C 3, C 4), or granted supplements (in the case of full professors) on the basis of internal reviews of achievement. The only route to promotion is to be 'called' by a state ministry at the final stage of an appointment procedure; again, internal appointments will be accepted by the ministry only in a few well-founded cases.

This system of promotion and appointment encourages the mobility of academic staff and helps to counterbalance institutional hierarchies. The scholar's pride therefore remains personal rather than being centered upon his university for it rests only on the fact that he was promoted. German universities are certainly more homogeneous in standards than those of any other major industrial society although discussions during the past few years about emerging signs of institutional hierarchies have intensified.

To be eligible for an appointment, a person

- must have received his first university degree;
- should be qualified to teach; as a rule he is required to have experience of university teaching;
- must be qualified in research work; as a rule, an above-average doctoral degree is considered to indicate such basic competence;
- must have conducted research for at least five years at a level above the doctoral dissertation, indicated by the award of a Habilitation or any equivalent scholarly achievement.

For some years in the 1960s and 1970s the Habilitation lost its role as a typical prerequisite for an appointment. In many cases, the search committee or external reviewers assessed the achievements of the candidates as being equivalent to a Habilitation. In recent years, however, both the deteriorating academic labour market as well as the growing traditionalism in higher education has led to a renewed emphasis on the Habilitation.

Teaching ability is not generally a major point of emphasis in most search processes. Most committees analyze lists and contents of publications, the theoretical competence, and the knowledge-base of a candidate. The ability to teach is more or less formally assessed on the candidate's teaching

Table 2 Salary of Academic University Staff in the Federal Republic of Germany 1985 (Index*)

Scale based on length of service **	Academic staff members (Wissenschaftliche Mitarbeiter)***			University assistants	Professors		
	A 13	A 14	A 15	C 1	C 2	C 3	C 4
1	45.7	46.7	50.9	-	45.8	50.0	62.6
5	51.6	54.3	59.3	53.2	55.2	60.7	73.3
10	59.0	63.9	69.9	56.2	66.9	74.0	86.6
15+	64.9	71.5	80.4	-	78.7	87.3	100.0

* 100 = Maximum salary of a full professor, without supplements granted on occasions of being "called" repeatedly, gross salary (before taxes).
All figures are taken for married persons, two dependent children.

** Promotion from one scale position to the next after 2 years of service each. Education and previous employment considered to be prerequiste for the position is equivalent to years of service in the position under consideration.

*** A 13 = starting rank, A 14: advanced rank, A 15: only granted for few positions (most academic staff members are not employed as civil servants and not paid on this civil servants' pay scale, but rather on a civil employees' scale, which is more or less equal in terms of net income.

\+ In the case of A 13 and A 14, the maximum scale position is 14.

++ There are only three ranks of assistants' salary of which the figure resembles the lowest.

+++ The highest rank of assistants' salary (cf. above).

experience based, for example, on lists of courses held in the past. In spite of many efforts since the sixties to raise the importance of teaching to the same level as research, conventional wisdom continues to prevail that a bad scholar cannot be a good university teacher and that therefore concentration should be placed almost exclusively on scholarly quality. This outlook is also underlined by the fact that little attention is paid to the teaching capabilities of professors.

As a rule, a committee of professors from the corresponding departments is responsible for the search and screening process. In some states junior staff or students might act in an advisory capacity on search committees. Some universities incorporate professors from other departments while a few include a professor from another institution. The committee will invite the most promising applicants to an interview and might also invite appropriate persons who had not applied for the position. After a public presentation and hearing, the committee will propose a list of three persons who might be accepted or, possibly, refused by the department council and the senate. In some cases the president or rector also might officially inform the minister of education of his opinion.

Finally, the minister will 'call' one person. This person can negotiate with the corresponding university about his working conditions - staff, laboratories, funds etc. Although for the last two decades the power of allocation of these resources was supposed to rest with the department, it is generally the universities which bind themselves by offering certain resources to the prospective professor on a permanent basis. The highest ranking professor (the C 4-professor) might negotiate his or her own salary, although if he or she had already been a professor he could negotiate with the minister of education responsible for his or her home university for an increase - possibly as high as 10 per cent.

Officially the legislation of the 1970s called for a homogeneous academic profession, and legislation on recruitment criteria makes no difference to the three ranks of professors. In practice, however, there are substantial differences regarding the quality expected and the resources negotiated. A C 2-professor can only expect a very limited allocation of resources, whereas a C 4-professor, the informal successor of the Ordinarius, will expect to receive substantial resources. Also, as we have already mentioned, only those persons 'called' for this position are permitted to negotiate their own salaries.

In recent years, we can observe many professors using again the terms ordentlicher Professor and Lehrstuhl (chair). This is in accordance with recent court decisions requiring a distinction of title between the full professor and other professional ranks, and also reflects the de facto power of the full professor. It would be misleading, though, to compare it to the chair system until the 1960s which had hardly provided any formal power to departments regarding staff assignment and research allocation.

In the case of Fachhochschulen, the non-university-level institutions of higher education in the Federal Republic of Germany, the recruitment of staff and the staff structure differs from those at universities. The professors are primarily in charge of teaching; they might conduct research, but this is not an obligatory part of their assignment. Their weekly teaching load is more than twice as much as that of university professors. As a rule, Fachhochschulen offer C 2-professor positions as the first stage. Internal promotion to C 3-position is possible, but with the exception of a limited number of special arrangements, C 4-positions do not exist at Fachhochschulen.

Candidates fo professor positions at a Fachhochschule should also have been awarded a doctoral degree although they are not expected to prove research achievements of a Habilitation or its equivalent. Rather, they have to prove at least 5 years professional experience of which at least three should have been spent outside the system of higher education. Exceptions tend to be accepted, however, if corresponding jobs are rarely available - for example a mathematician who is supposed to teach engineering students.

Generally speaking, the Fachhochschulen do not provide any junior staff positions associated to professors. Altogether, fewer than 5 per cent of all professional staff at these institutions hold non-professional positions.

All in all we would be justified in claiming that the recruitment and appointment regulations at German universities are crucial to the whole system of higher education. Most professors are appointed for the whole of their working lives (the 'emeritus'-system, however, was abolished in the 1970s). The appointment system also incorporates the major reward and promotion elements of academic careers since there are no other means of promotion than those through a 'call', and since any other evaluation processes play a less important role. Further, the recruitment and appointment system shapes the institutional pattern of higher education; it counterbalances

institutional hierarchies and parochialism. Finally, it is a major link between university and state. The state is legally bound to guarantee the freedom of Wissenschaft, while the appointment of professors is considered to be a legitimate area of state influence.

Table 3 Staff at Institutions of Higher Education in the Federal Republic of Germany 1960-1980 (in thousands)

Year	Professional staff (total)	Professors docents	Assistants	Other prof. staff	Non-prof. staff	Students prof. staff
1960	19.1	5.5	9.3	4.4	42.9	15
1965	36.6	9.4	17.9	9.3	63.7	11
1970	54.3	14.9	25.2	14.2	87.2	9
1975	77.9	31.0	28.0	18.9	126.5	11
1980	80.1	33.1	22.4	24.5	132.6	13

Source: Ludwig HUBER and Gerhard PORTELE: "Die Hochschullehrer," in Enzyklopaedie Erziehungswissenschaft, Vol. X. Stuttgart: Klett-Cotta 1983, p. 199.

4. The Interaction between University Staff and Society

In general, the German university professor is considered to be someone who remains slightly detached from society in his quest for the truth. The tradition of a small university town separated from the various state capitals, as well as the traditional image of the professor - a knowledgeable person unable to manage other spheres of life - emphasizes the distance between university and society. An enlightened government was considered to be the bridging element between university and society. Since government plays a mixed role in the many guises of organizational supervisor, public employer of graduates, the official protector of academic freedom and, finally, the bridging element between university and society - the relationships between the university and the state were too over-burdened to guarantee satisfactory interaction between university and society. On the contrary, the multiplicity of state functions might have led the university to make great efforts to defend itself against external expectations and influences.

There is widespread feeling that interaction between university staff and society ought to be improved. For example, a survey conducted by the Ministry

of Science and Arts in the State Baden-Wuerttemberg in 1979 showed that 85 per cent of employers as well as 85 per cent of journalists considered that universities made little effort to improve contacts and ties with the public and with the employment system. Interestingly, 69 per cent of university professors concurred with this criticism.

It would be misleading, though, to believe that interaction between university staff and society is marginal. There has long been such interaction which has intensified in recent years as a consequence of the growing importance of research to society and the changing careers of the growing numbers of university graduates. In addition, many reforms in recent decades have been aimed at creating closer ties between university and society: In many cases these meet the demand that universities should not be too protected in the pursuit of knowledge for its own sake, but should concentrate on looking at acute and pressing problems of society.

Some of the mechanisms which promote interaction between university staff and society might be briefly mentioned:

a. In teacher training, legal and medical fields, universities in the Federal Republic of Germany do not award any degree themselves; the students take part in a state examination held jointly by state representatives and professors. This enforces close communication on curricula and examinations. Formal ties are weaker in other fields but closely-knit informal ties between higher education and the employment system do exist, especially in fields such as chemistry and engineering.

b. Professors are entitled to accept extra-income of about 10-15 per cent from various sources. Officially, they have to inform their administration and are not entitled to earn more than a certain fixed maximum in this way. In practice, however, these regulations are not closely enforced. Thus, there does exist an incentive structure for professors to foster outside contacts. I believe, however, there is a danger that financial incentives for conducting major research are very small on the one hand, while on the other hand, incentives exist and may increase for various channels of private contact with society, for example through lectures, expert statements, essays etc.

c. There was a very controversial debate in the 1960s and 1970s on whether new forms of advisory boards, councils etc., should be established to involve the public directly and officially in university matters in an attempt to

intensify the contacts between university and society. However, only very few agencies of that kind were eventually established. For example, study reform commissions at the Federal level set a majority vote for university representatives as well as a strong minority vote for government representatives, whereas employers, professions and unions are represented only by one member each holding no voting rights. It is interesting to note that the increased rights of junior staff, students, and non-professional staff in the late 1960s were considered by many proponents as a means of promoting interaction between university and society thus rendering official representation of the public superfluous.

d. The research promotion system in the Federal Republic of Germany acts in many ways as a stimulus for closer interaction between university and society. Many university professors are granted research funds from private sources or from state ministeries. In the case of the largest research promotion scheme, primarily funded by Federal and State governments and channelled through the German Research Association (Deutsche Forschungsgemeinschaft), scholars elected by their respective academic community vote on the individual application. The influence of government and, to some extent, public representatives, however, is strong in establishing major directions of promotion and in the establishment of new major areas of promotion.

In November 1984, the Federal Government summarized its view on this kind of interaction in a report to the Federal Parliament in the following way:

> "The participation of institutions of higher education in Federal programs of research promotion, the involvement of the Federal and the State governments in bodies of research organization and promotion and, last not least, individual talks between government and representatives of science, guarantee the necessary and really influential, as far as the actual outcomes in research activities are concerned, exchange of views with institutions of higher education about new societal challenges and the possible contribution of research for the solution of such problems."

e. State laws enacted in the 1960s and 1970s, and the Framework Act for

Higher Education which was enacted in 1976, require the universities to report to the public on how they fulfill their tasks and on their research activities. As a consequence, most universities publish (about every second year) a report by the rector or president on the development of the university, as well as a research report which might even list all research projects.

f. In recent years, many universities have established offices for the transfer of technology. These offices advertise the research potential of the university, try to identify demand for research outside the university, and also demands for advice which can be provided by the university. In some cases, these offices not only match demand and research potential by providing information but also administer those projects which they have instigated. In addition, a few universities have implemented the concept of the "science shop" which has emerged in The Netherlands. This is an office which provides counselling and, eventually, research for potential clients who are unable to finance such work - i.e. citizen groups, individuals, and local unions etc.

Research on the interaction between higher education and society is not really yet available, so it is only possible to mention the various activities without giving any reliable estimate of their scope and range.

5. Promotion of Research at Universities

The basic funding of universities is provided by government - most of it by the individual supervising state. The Federal government shares the support of some aspects - primarily the construction of higher education and also student scholarships which are not considered as part of the expenditures of institutions of higher education. Contrary to the funding schemes in many other countries, the university budget is intended to cover not only the costs of staff, facilities, basic expenditures and teaching expenditures, but also basic research expenditures. The state covers not only the basic costs of the institution, but also enables the scholar to carry out research as one of his or her major tasks. The funds available for research are insufficient for all ongoing projects and certainly insufficient for all the research desired, but it does at least guarantee either most scholars a basic research funding, or enables the individual university or department to emphasise certain research areas as do foundations and other research-promoting agencies.

The universities apply annually for government funds which are

earmarked for broad areas such as general material costs, computer costs, supportive staff, guest lecturers, etc. (both construction and staff salaries are administered by government agencies themselves). There is no clear-cut distinction between funds for teaching and those for research.

The household committee distributes funds to departments which channel them to the individual scholars. Some universities have established specific research promotion schemes themselves. They reserve some of the available funds for a research program which might be distributed by the research committee of the senate. For example, the university might encourage scholars to submit research proposals in the same way that proposals are submitted to foundations. Universities also establish certain research priorities for a period of several years, or sometimes provide additional funds for those projects which are being funded externally. This latter approach is aimed at raising the "drawing power" of the university for research contracts and acts as an additional stimulus for scholars to raise external funds. However, most university research funds are distributed through the departments which themselves decide whether to set priorities or to distribute them more or less equally among the scholars.

Table 4 Research Expenditures in the Federal Republic of Germany 1981 (in Bio. DM)

Receiving institution	Providing institution				
	Federal govt.	State govt.s	Industry/ services	Others	Total
Institutions of higher education	1.7	17.2	0.3	-	19.2
Research institutes	5.6	2.2	0.4	0.4	8.6
Industry/services	4.5	0.1	22.1	0.6	27.4
Total	11.8	19.6	22.8	1.0	55.2

Source: "Bericht der Bundesregierung zur Foerderung der Drittmittelforschung im Rahmen der Grundlagenforschung," in Deutscher Bundestag, Drucksache, No. 10/225, 1983, p. 8.

In addition, universities also raise research funds from various other sources. In 1981, the universities of the Federal Republic of Germany raised altogether 1.5 Billion DM, which equals about 7 per cent of the total budget of the higher education system. Such funds do not cover the salaries of professors nor the administrative costs of the universities, but are used for material costs and for additional short-term staff.

About 50 per cent of these external research funds are distributed by the German Research Association (Deutsche Forschungsgemeinschaft). Apart from the direct funding of universities, state and federal government use the following means for promoting research: funding of government institutes; direct government funding of research projects requested by individual scholars and institutions; research and development subsidies for firms; basic funding of semi-autonomous research promotion agencies or research organizations. The major fund-receiving institutions of the latter kind are the Max-Planck-Society (responsible for Institutes of basic research), Fraunhofer Society (responsible for institutes of applied research), and the German Research Association which is responsible for the promotion of research at universities.

Within the framework of the German Research Association, representatives of the public and of governments have considerable influence on the choice of major areas of research to be promoted alongside the "regular" promotion open to application on a disciplinary basis. On the other hand, scholars elected by their respective academic communities have a major influence on decisions regarding individual grants.

In addition to the German Research Association, the major sources of grants for research in higher education are:

- Federal ministeries (24 per cent in 1981),
- State ministeries (7 per cent),
- Volkswagen Foundation (6 per cent),
- other foundations (5 per cent),
- private economy (8 per cent).

The funds derived from private sources might be larger than indicated by the official figures. It is difficult to estimate the amount of research funds which are not channelled through the university administrations.

Additional research grants play a significant role in the life of research

in the Federal Republic of Germany. However, the pressure for rapid changes in research themes and paradigms as a consequence of socio-political debates and changing priorities appears greater in the United States than in the Federal Republic of Germany. This possibly leads to a slower grasp of the problems requiring solutions but it allows more continuity. Research in higher education never reaches a perfect compromise between continuity and change, nor between creative isolation from society and responsiveness to society.

6. Concluding Remarks from a Comparative Point of View

If we observe various issues of university staff management in industrialized societies, we note common problems being solved in different ways. Four of these will be addressed in this concluding chapter, because the solution chosen in the Federal Republic of Germany compared to solutions chosen elsewhere might indicate the common underlying problems.

First, we observe problems in all countries to establish a convincing compromise between selectivity and regular career regarding the junior staff. It is assumed internationally that academic careers differ from the majority of other careers in one fundamental way: A high in-career selectivity is considered indispensable: Many of those beginning an academic career will involuntarily be forced to enter non-academic careers. In recent decades we have been able to observe an increasing stability of careers in most occupations in most industrial societies. This trend, which reflects a growing wealth and stability of societies, has in turn caused problems of management for those careers in which a high degree of in-career selectivity continues to be considered indispensable to ensuring that the most talented scholars will become the coordinators of the organized system of knowledge.

In those systems of higher education which make provision for regular stages of an academic career - Anglosaxon countries, for example - there were growing complaints about the increasing inflexibility of the system due to the inclination to compromise standards if colleagues in one's own institution faced discontinuation of employment: The increasing share of internal promotions and of tenured positions might be considered as an indication of that inclination. On the other hand, systems such as those in the Federal Republic of Germany, which do not provide a regular career pattern for junior staff, are obviously under pressure to establish regular career patterns.

The continuous call for impartial assessment or for the need of a flexible system of higher education does not lead to any convincing solution. Efforts to ease selectivity and thereby increase university insecurity also often leads to negative consequences of the working environment at universities. For these reasons I conclude that any solid-based compromise between selectivity and regular career patterns in higher education under the given societal conditions should take into consideration careers paths for those junior scholars who will not finally be promoted to senior positions in universities and research institutes. A certain degree of certainty about opportunities outside higher education - for example certain quotas in various public agencies - might be required to secure the degree of visible careers of scholars appropriate to the degree of selectivity considered functional.

Second, the debate on assessment and promotion schemes at universities indicate that assessment of work in higher education and research is much more complicated and imperfect than in most other institutions. There are many imperfections in the assessment scheme: For instance, the person being assessed might know the field far better than those making the assessment. Furthermore, there are always changes of paradigms and breakthroughs of knowledge which are bound to be overlooked. Such imperfections must be considered in a systematic manner. One way of ensuring this would be to involve a broad variety of perspectives during the process of assessment.

As already discussed, the major formal element of assessment at universities in the Federal Republic of Germany is the 'call' for a professor position by a state government, any first promotion to the position of professor, and any further promotion following that. This does not mean, however, that influential assessment is primarily a governmental affair. Rather, the procedure makes sure that any promotion of that kind generally also includes assessment by peers of the institution which is offering the position as well as assessment by peers outside the institution involved, policies of the university and, possibly, views from outside the higher education system altogether.

Third, debates on the assessment and promotion of university staff frequently overlook the extent to which the prevailing mechanisms in a given country are interwoven with the respective pattern of the higher education system. For example, a strictly hierarchical pattern of the higher education

system might allow for an assessment system whereby the most highly respected scholars in each field are the most influential reviewers, whereas a genuinely diversified system of higher education requires different kinds of reviewers and different kinds of assessment modes for each sector of higher education respectively. The system of assessment and promotion in the Federal Republic of Germany cannot be understood fully if one does not take into consideration that it both reflects and reinforces an institutional pattern of higher education which strives for more or less the same quality in all institutions and tries to keep any differences of quality within bounds.

Fourth, the debate about a proper balance between safeguards of autonomy of universities on the one hand and, on the other hand, devices for interaction between higher education and society, differs from society to society and also reflects historical circumstances. At times, universities might be inclined to become ivory towers, and at times independent or critical work of scholars is endangered. Mechanisms of university staff management have to reflect both directions of such dangers. There is a widely held view in the Federal Republic of Germany that modes of financing research play an important role in this respect. The basic funding of universities ought to include a substantial share for research in order to assure that research does not become heavily dependent on external demands and thus neglect areas and approaches which are not en vogue in society. On the other hand, substantial research funds from other sources should be distributed by other means to avoid an isolationist development of research.

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APPENDIX A

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APPENDIX B

Publications by Ulrich Teichler in the English Language on Higher Education in the Federal Republic of Germany

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