Innovation and Future Scenarios of Tertiary Education: A View from Europe

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1. Introduction

In trying to understand the dynamics of higher education, we like to look back in order to see the most substantial changes in the recent past: Are the consequences of these changes already fully 'digested', or do we have to try to understand how possible or likely consequences of these past changes will unfold in the near future? Additionally, we like to know whether we can expect that new issues will be on the agenda in the future. We like to look forward for these purposes. This forward-looking, however, tends to be strongly influenced by the past: For example, we might believe that recent innovations will persist, or we might be convinced that current problems determine the search for better solutions in the near future. Even a superficial glance at the activities of forward-looking suggests that there are few scenarios around assuming or predicting fundamental changes.

In trying to look at possible or likely futures of higher education in the framework of this article, deliberations start of - in the first part of the analysis - with the most striking phenomenon of change in higher education in recent decades: the growth of student numbers. In looking beyond the mere figures, it is appropriate to pay attention to the character of the education system in the process of expansion, which is indicated by the terms 'university education', 'higher education' and 'tertiary education'.

In the second part of the analysis, some thoughts will be presented about the importance as well as about the problems faced of forward-looking. Thereafter, various themes will be discussed which certainly will be in the limelight of future discussions: further issues of growing enrolment, the relationships between the world of learning and the world of work, the characteristics of diversity of 'higher' or 'tertiary' education, the signs of 'utilitarian drift', the internationalisation of higher education, and finally various organisational issues.

2. Educational Expansion

Most observers agree that the changing role of education for society can be made most clearly visible by the growth of learners. Occasionally, the average years of schooling are presented to indicate this growth, but more frequently the proportions of those learning beyond 'compulsory education' or beyond 'secondary education' are presented and dis-cussed. Many statistical overviews compared countries according to the entry rates of the corresponding age group, the rate of the number of students of the typical age group of students (for example the

20-24 years old population), or the graduation rate of the corresponding age group.

Actually, expansion of higher levels of education is a major policy theme in those countries, which we might name economically advanced countries today, since the 1950s or since the 1960s at the latest. The international discussion was strongly mobilized by the Organisation for Economic Co-operation and Development (OECD), which was founded in 1957 and quickly began advocating educational expansion as means of stimulating economic growth.

In the early 1950s, entry rates in most of today's economically advanced countries were below 5%; the U.S. were viewed as an exception with an entry rate about twice as high. Around 1970, an entry rate of about 20% could be observed in many countries. Thereafter, periods of small or substantial growth varied between countries over time. In the early years of the 21st century, the entry rate surpassed 50% on average of economically advanced countries.

The effect of educational expansion for economy and society can be indicated more directly by the proportion of the population in the working age who have been enrolled earlier in higher education. The rate of persons with a higher education degree (at least a bachelor) among the 25 to 64 years old population was on average of the OECD countries 7% in 1960, 10% in 1970 and 16% in 1980. It increased to 28% in 2000 and reached 39% in 2010 (see OECD, 2012).

Actually, the public discussions and the policies as regards educational expansion varied substantially between countries and remained controversial within the countries. Views differed as regards the relevance of economic development versus societal well-being and cultural enhancement as goals for educational policies. In some countries, strong efforts were made to predict future developments of the labour market as a framework for educational policy, while the 'social demand' of the learners was considered to be the most important legitimate force for educational developments in other countries. Trust in educational planning prevailed in some countries, while a dominance of market forces was taken for granted in other countries. Some observers believed that educational expansion could be a major driver for reducing inequality of education according to various socio-biographic criteria, while others either hold such a policy not so high in esteem or considered other measures as more powerful in reducing inequities. Some observers perceived benefits of educational expansion for the economy, while others pointed at employment problems of a growing number of graduates from higher education or observed a 'mismatch' between demand and supply, for example an undermining of education and training for skilled worker occupations. Thus, it cannot come as a surprise to note that the rates and levels of educational expansion did not develop more or less uniformly across countries. For example, entry rates to higher education varied between about 10% and about 30% in economically advanced countries around 1970 and similarly between about 30% and 70% in the early years of the 21st century.

Recent developments of graduation rates in select economically advanced countries are presented in Table 1. As already pointed out, the U.S. were generally viewed as a forerunner of

educational expansion until the 1970s. Japan also is often named as a country with comparatively high levels of enrolment in higher education between the mid-1960s and the mid-1970s. Various other countries experienced such a growth in later years. Subsequently, the growth rates in these countries levelled off. In looking at the left side of Table 1 showing the rates of graduation with at least a bachelor degree, we note that the U.S. and Japan were only close to the OECD average of about 40% in 2010. Higher rates than 50% were reported from Iceland and Poland and rates of about 50% from Australia, Denmark, Finland and the United Kingdom. In contrast, rates of only about 30% could be observed in the German-speaking countries, where concern was widespread that higher education expansion could undermine the quality of vocational training for middle-level occupations, and in some Southern European countries. Finally, a substantially lower graduation rate held true for Turkey.

Table 1: Net Graduation Rates from Tertiary Education
in Selected OECD Member States 1995-2010 (percent)

	Tertiary education A (First degree)				Tertiary education B (First degree)			
Country	1995	2000	2005	2010	1995	2000	2005	2010
Australia	.	36	50	(50)	.	.	.	(16)
Austria	10	15	20	30	.	.	8	12
Czech Rep.	13	14	23	38	6	5	6	5
Denmark	25	37	46	50	8	10	10	9
Finland	21	40	47	49	34	7	.	.
Germany	14	18	20	30	13	11	11	14
Iceland	20	33	56	60	10	5	4	2
Ireland	.	30	38	47	.	15	24	22
Italy	.	19	41	32	.	.	1	1
Japan	25	29	37	40	30	30	28	25
Netherlands	29	35	42	42	.	.	.	.
New Zealand	33	50	51	47	12	17	21	26
Norway	26	37	41	42	6	6	2	.
Poland	.	34	47	55	.	.	.	1
Portugal	15	23	32	40	6	8	9	.
Spain	24	29	30	30	2	8	15	16
Sweden	24	28	38	37	.	4	5	6
Switzerland	9	12	27	31	13	14	8	16
Turkey	6	9	11	23	2	.	.	19
United Kingdom	.	42	47	51	.	7	11	12
USA	33	34	34	38	9	8	10	11
OECD average	20	28	34	39	11	9	9	10

Figures in brackets: 2009
Source: OECD, 2012

As educational growth stretched over many years, the level of attainment of the 25 to 64 years old population was lower at any point in time. In 2012, the proportion of the working-age population with at least a bachelor degree was 31% in the U.S. and 30% in the United Kingdom. The respective rate in Japan - 26% - was similar to that in Finland (25%), but it was substantially lower, i.e. 16%, in Germany and 13% in Austria (OECD, 2014).

3. "Tertiary Education" - Concept and Developments

A close look at the educational statistics presented in the discourse on educational expansion shows that there are different definitions employed of the sector at the apex of the educational system (see Teichler, 2015c). There is a confusing variety of terms, definitions and data reported.

In the 1950s and 1960s, the terms 'universities' or 'university education' dominated in international comparative reports. The term 'university' tended to be employed in many reports in tune with the traditional European understanding: multi-disciplinary, doctor degree-granting institutions, characterized by a close link between research and teaching. Over the years, also mono-disciplinary doctor degree-granting institutions, such as technical universities and in some countries teaching training institutions as well, were conceived to be universities as well. The use of the term 'university education' implied that there is a relatively homogeneous system of teaching and learning at an intellectually high level; most respective institutions - no matter whether they are named universities, institutions of higher education, academies, etc. - could be viewed as having a similar educational philosophy and a similar intellectual ambition in mind, while there might be some institutions on the margin (i.e. not a separate sector of its own), which do not reach fully the same level.

In the process of expansion during the 1960s and 1970s, the term 'higher education' became the most widely used one. This new term suggested that study at institutions with a predominant teaching function and possibly without granting doctoral degrees serve similar educational functions as universities. Actually, international educational statistics at that time often presented numbers of students and graduates from institutions of higher education without making any distinctions according to levels of study programmes and degrees or according to types of higher education institutions.

'Higher education' became a widely accepted umbrella term. It suggests that all students do not merely have completed some kind of secondary education, but also that they are competent to undertake 'higher', i.e. intellectually demanding studies. When this term spread, however, it was taken for granted - in contrast to the previous notion of 'university education' - that there are noteworthy distinctions within the higher education sector.

A lively debate spread since the 1960s about the character and the suitable terms for the major distinctions in higher education. We might argue that five different approaches have emerged, but that not anyone has been accepted generally in the discourse among actors and

experts:

- The term 'short-cycle higher education' (see for example OECD, 1973) was employed to point at the varying lengths of study programmes - possibly ranging from one year to six years - as well as at levels of study programmes and degrees (for example associate degree, bachelor degree, and master degree).
- 'Non-university higher education' (see Taylor et al., 2008) underscores the importance of different types of study programmes or different types of institutions. In Europe, for example, new types of institutions were founded in the process of educational expansion since the 1960s - named for example 'polytechnics', *'Fachhochschulen'* or - in an abbreviated way - *'IUT'*, *'HBO'*, *'AMK'*, etc. Such distinctions by type are based on the assumption that the non-university sector is to a lesser extent characterized by 'academic' or research-oriented teaching and learning and to a higher extent by 'practice-oriented', 'applied' or 'vocational' approaches.
- The famous distinction made by the U.S. sociologist Martin Trow (1974) between 'elite' and 'mass' higher education might be called functional. Accordingly, higher education serves the reproduction of the academic profession as well as the training of intellectuals and of the elite in society, as long as less than 15% of the corresponding age group are enrolled. When this margin is surpassed, 'mass higher education' emerges alongside: It helps 'protecting' the elite sector, which continues to serve its functions for some students, and provides an education appropriate for the talents, motivations and job prospects of the additional students. This model indicates that higher education is bound to diversify in the process of expansion functionally for the increasingly diverse student body, but it does not specify the modes of diversification (e.g. length of study, institutional types, reputation, etc.).
- Often, distinctions are made which are not based on formal elements, i.e. not on formulated official regulations or other official documents, but rather on informal elements, i.e. in 'vertical' terms the 'reputation' or in 'horizontal' terms the 'profile' of an individual programme or institution.
- Finally, the sector of higher education not understood to be the university sector was called 'alternatives to universities' in an OECD (1991) publication. This phrasing points out that there is a clear notion what components of higher education can be viewed as universities and what not, but the latter is too varied to opt for any single specific and targeted term.

The term 'tertiary education' was employed only occasionally up to the 1970s (see de Moor, 1979). Since the 1980s, however, various international organisations use and try to popularize it. 'Tertiary education' underscores a distinction between educational sectors according to the life phases of learning. It is hardly different from 'post-secondary education' in comprising almost all

formal education beyond secondary education and - in contrast to 'quaternary education' - the usually final stage of education of young persons before embarking on a professional career. Tertiary education does not only comprise 'higher education' up to at least a bachelor degree, but also other programmes, which are called in the UK 'sub-degree level programmes': shorter study programmes than bachelor programmes or those which are - according to the UNESCO definition - "generally more practical/technical/occupationally specific" than higher education programmes. Thus, tertiary education, in contrast to higher education, solely refers to the sequential stages of learning without any claim of an advanced quality.

Actually, the term 'tertiary education' is employed in two ways:

- as umbrella term comprising almost all education subsequent to secondary education, and
- as a specific term referring to that area of education beyond secondary education, which is not understood as 'higher'. In the subsequent text we will call the latter 'the tertiary education sector'.

In international statistics of UNESCO, programmes leading to degrees equivalent to bachelor or master degrees in British or in U.S. terms, were called 'ISCED 5A' for a long time, while the shorter and/or more practical ones were termed 'ISCED 5B'. This terminology applied for example for the 1997 edition of the International Standard Classification of Education (ISCED). Since 2011, UNESCO is in the process of introducing a new classification according to which the former is called ISCED 6 and the latter ISCED 5 (see UNESCO Institute for Statistics, 2011). The OECD terminology changed over time several times, whereby the borderline between the sectors always was the same as that employed by UNESCO. In Table 1, the OECD distinction is employed between 'tertiary education A' and 'tertiary education B'.

Actually, the term 'tertiary education' or similarly 'third-level' education became popular in some countries, but remained alien in other countries. The latter countries also deliver data on institutions and programmes to UNESCO, OECD and EUROSTAT - the three international agencies compiling international statistics on the basis of data delivered from national agencies - according to the jointly formulated definitions, but at home they name and classify institutions and programmes differently.

In Japan, for example, a definition of 'higher education' is widely employed, which does not only comprise bachelor and master programmes, but also the shorter ones: *'tanki daigaku'* programmes and the three to five years of *'kôtô senmon gakkô'* programmes. There are different modes of the classification in Japan as regards the post-secondary *'senshû gakkô'* pro-grammes. Yet, the Japanese government puts these three types of programmes, which are shorter than bachelor programmes, into the 'tertiary education B' or similarly named category in its data delivery to UNESCO and OECD.

In Germany, for example, the definition of 'higher education' comprises programmes at

universities and *'Fachhochschulen'* which lead at least to a bachelor title. However, the practice vary, whether study programmes leading to a bachelor at so-called *'Verwaltungsfachhochschulen'* and *'Berufsakademien'* (including the newly founded *'Duale Universität'* in Baden-Württemberg) are considered to be part of higher education. In the data delivered by German authorities to UNESCO and OECD, programmes at the latter institutions as well as advanced training programmes of the vocational training sector have been counted for many years as 'tertiary education B' in OECD terms.

There have been various efforts to find a suitable term for this specific tertiary education sector. For example, in a study jointly undertaken by the Council of Europe and the European Training Foundation, a long term was chosen: 'tertiary professional and vocational education (TP/VE)' (Hennessey et al., 1998). EURASHE (European Association of Institutions in Higher Education) calls the sector of its responsibility in overview publications 'tertiary short cycle higher education' (e.g. Kirsch & Beenaert, 2011). But also these terms did not become conventional wisdom.

In sum, we might say that the term 'tertiary education' has not entered the national legislations, classifications and discussions in the majority of countries (see Dunkel & le Mouillour 2009, 2013). However, there is a sector in most countries which offers substantial study programmes beyond secondary education and is not understood to be part of higher education. It makes sense to analyse similarities and differences of this sector across countries, even though no common terminology is employed. As already pointed out, we employ subsequently the 'tertiary education sector'. Actually, this sector is the key arena of teaching and learning aimed at preparing for intermediate-level occupations in economically advanced societies. A wider use of such a term and a clearer concept of the role of teaching and learning in the tertiary education sector might eventually support intermediate-level occupations in their search for identity.

In looking at the available international statistics, we do not note any more a less constant ratio of the size of the tertiary education sector vis-à-vis the higher education sector. As Table 1 shows, the rate of graduates from higher education (with at least a bachelor degree) increased from 20% in 1995 to 39% in 2000 on average of the OECD countries. In contrast, the rate of graduates from the tertiary education sector remained more or less constant during this period at around 10%. The latter finding is partly due to the fact that more youth opt for institutions and programmes, which already have been called 'higher education' for some while. But it is in part due to decisions of upgrading institutions or programmes, which had been understood to be 'tertiary education B' in the past, to 'tertiary education A'. The most striking example of this kind referred to in Table 1 is Finland. In 1995, 21% of the corresponding age group graduated from universities and 34% - a clearly higher number - from *ammattikorkeakoulu* which at that time were considered 'tertiary education B'. As the latter institutions were upgraded in the 1990s and thereafter all their programmes were considered to be bachelor-level programmes in

the 'tertiary education A' sector, Table 1 reports 49% 'tertiary education A' and none 'tertiary education B' graduates at all in Finland for the year 2010.

Among the 21 OECD member states, for which Table 1 provides information, only Finland (see above) and Japan (30% vs. 25%) had higher rates of 'tertiary education B' than 'tertiary education A' graduates in the year 1995. In 2010, the rate of 'tertiary education B' graduates in Japan was 25%, i.e. slightly lower than in 1995, notably due to shrinkage of the *tanki daigaku* sector; in contrast, the rate of bachelor graduates had increased during this period from 25% to 40%. Yet, the ratio of 'tertiary education B' vs. 'tertiary education A' graduates (or in our terminology 'tertiary education sector' vs. higher education graduates) in Japan has remained one of the highest in OECD member states. Therefore, it does not come as a surprise to note that discussions and activities are underway recently in Japan to make this tertiary sector better visible and more highly reputed vis-à-vis higher education.

4. The Need for Higher Education Research to Identify Problems in Advance

Reflection on the future of is a customary activity of higher education researchers - often among themselves or in interaction with policy makers and practitioners. This might come as a surprise, because research is strong in analysing past and present, but only speculative, when it addresses the future.

Certainly, higher education research is on a safe territory, if its searches for systematic evidence of the past or recent state of affairs. In the dialogue with higher education policy and practice, higher education research, as a rule, plays the following roles: (a) problem identification and explanation; (b) consultancy and advice in decision-making processes; (c) regular monitoring of developments in higher education; and (d) evaluation of the impact of decisions taken and measures implemented by decision makers in the higher education system. In playing these roles, higher education research primarily pays attention to the recent past. However, it has to reflect possible future directions of higher education and possible future notions and discussions of problems as well, because research needs some time to identify problems and their causes. Research in this domain needs to be prepared for the moment when a public debate of problems eventually starts looming (cf. the overviews on higher education research in Clark, 1984; Teichler, 1996; Teichler & Sadlak, 2000; Tight, 2012; Altbach, 2014; Teichler, 2015b).

Moreover, research in this domain has to be forward-looking, because higher education shapes the future life and the future activities of university graduates in general and specifically of teachers and researchers of this sector for various decades to come. As graduates will be professionally active for three or even four decades, and as it takes at least a decade to reform curricula and teach the first generation accordingly, respective research ideally should be in a position to look ahead for about 50 years. However, predictions of the future might be targeted for short periods of time, but become fuzzy if long periods are addressed.

Higher education research is not an academic discipline which can ignore the social context and the issue of social relevance of research. The author of this article believes that higher education research has to be both, theoretically and methodologically convincing as well as contributing to a dialogue between the researchers and the actors in higher education policy and practice. As a consequence, embarking on future scenarios is viewed as a normal task (Teichler, 2003, 2013).

5. Examples of Forward-Looking Activities

As already pointed out above, the model of 'elite', 'mass' and 'universal' higher education put forward by Martin Trow around 1970 (see also Burrage, 2010) can be viewed as one of the earliest and one of the most visible examples of forward-looking undertaken by higher education researchers. He concluded that the process of educational expansion is likely to be accompanied by increasing diversification. We could argue that the 'tertiary education sector' analyzed in this article serve the function which he envisaged for 'universal higher education'.

Among more recent activities of higher education researchers, it is worth naming a project called 'Higher Education Looking Forward' (HELF). The European Science Foundation (ESF) (an association of national research promotion agencies and major national coordinating agencies of public research institutes in various European countries) considers 'forward looking' projects as a promising way of exploring possible futures of technology and society as well as respective research in these areas. In 2005, ESF invited scholars in the humanities and social sciences for the second time to suggest priority areas for a forward looking project; higher education researchers succeeded in receiving grants for such a project. The results eventually were published in 2008 in the special issue 'The future of higher education and the future of higher education research' of the journal *Higher Education* (Brennan & Teichler, 2008). The participating researchers specified future key issues in terms of questions:

- What concepts of a 'knowledge society' will shape future discussions, and what kind of developments are to be expected with respect to the utilisation of knowledge as compared to developments of knowledge within the higher education and research system?
- How will higher education in the process of expansion change its role in relation to social equity and related notions of citizenship, social justice, social cohesion and meritocracy? Will there be an increasing divide between winners and losers of higher education expansion, or will higher education help to reduce social inequities?
- Will higher education move towards more comprehensive functions beyond knowledge production and dissemination, as the discourse about the 'third mission' suggests (see Culum, Roncevic & Ledic, 2013), and by including more 'stakeholders' into decision-making processes, or will higher education consider such movements as a 'mission overload'?

- How will the steering of the higher education system change as a result of future challenges: will governments play an even stronger role than in the past, will there be a coexistence of strong governmental and university strategies, will market forces play a stronger role, or what other mix of steering is likely to occur?
- What will be the future structure of the higher education system? Will national higher education systems become extremely stratified in the process of expansion, as for example the discussion about 'world-class universities' and rankings suggest, or will moves towards a relatively 'flat hierarchy' and a variety of 'profiles' of individual universities be influential?

Actually, the ESF decided, in response to the HELF project, to support - in cooperation with various national research promotion agencies - consortia of higher education researchers under the name 'Higher Education and Social Change in Europe' (EuroHESC) from 2009 to 2012. Thus, future scenarios turned out to be a successful start for research.

Recent activities of the OECD are another example. This major inter-governmental organisation of economically advanced countries, often initiates 'think-tank' projects, in which government representatives, scholars and other experts cooperate in analysing the current situation and in discussing possible future scenarios. The project 'Higher Education to 2030' (see OECD, 2008, 2010) addressed three themes: 'demography', 'technology' and 'globalisation', that is, contextual changes for higher education. Prior to this project, OECD (2006) presented four 'future scenarios for higher education': (1) open networking, (2) serving local communities, (3) new public management, and (4) higher education inc. This publication suggests that the configuration of governance and management has an enormous impact on the structure and function of higher education.

Finally, higher education researchers have been asked frequently in the framework of major European higher education and research policy moves - for example the so-called 'Bologna Process' of creating a convergent system of study programmes and degrees all over Europe, or the so-called 'Lisbon Process' of strengthening research in the European Union - to summarize the state of available systematic knowledge and to predict future issues (see Kehm, Huisman & Stensaker, 2009; CHEPS, INCHER-Kassel & ECOTEC, 2010; Curaj et al., 2012; Pricopie et al., 2015).

6. Towards Interesting and Meaningful Future Scenarios

Futurology is often viewed as boring and as focused too much on the present situation. Visions of the future are often overwhelmed by the current scene and by current fashions. They often unconsciously assume that humans are at the 'end of history' and can at best expect a trend, which is an extrapolation of the past and the presence.

Not all the future approaches have to be called 'continuity of trends' and 'consolidation of

recent policies and measures' scenarios. Some might be called 'break-through' scenarios: there might be convincing interventions and surprising innovations leading to substantial change. Others might be called the 'great expectation and mixed performance' scenarios (see Cerych & Sabatier, 1986): Efforts for improvements are likely to have a certain degree of success in the desired direction, but as a rule do not reach their ambitious goals. Of course, there are also 'back to the beautiful past' scenarios: Recent changes towards a 'wrong direction' will be redressed. There are the 'changing fashions' or 'circular developments' scenarios as well: Certain issues are at the forefront of public discourse for some time, but loose attention irrespective of the extent to which they have had an impact. Finally, we might name 'endemic crisis' scenarios: Each higher education reform has success in the desired direction, but creates its typical new problems. This list may be incomplete, but it indicates that researchers have at their disposal a variety of models to employ when contemplating future scenarios.

It makes sense of course to embark on a discussion of possible future developments by starting off from recent trends and issues and asking what their 'fate' will be in the long run. We might argue that the following trends and issues were discussed most frequently in the international public discourse on higher education in the first decade of the 21st century (see Teichler, 2013): (1) expansion and growth of higher education; (2) a growing expectation of visible relevance of higher education ('knowledge society', 'knowledge economy'), possibly comprising pressure for increased instrumental approaches; (3) a growing multi-agent decision-making setting (rather than merely a 'managerial' university); (4) increasing assessment activities (evaluation, accreditation, indicators, rankings, etc.) and an assessment-based decision-making, and in this context a growing 'output', 'outcome' or 'impact' awareness; (5) a growing 'professionalisation' of the agents in the higher education system (managers, higher education professionals and scholars); (6) a trend towards internationalisation; and possibly (7) a growing incorporation of higher education into a system of life-long-learning.

This list does not directly correspond the themes higher education researchers are most actively involved in their research (see Tight, 2012), but it is not alien for them to embark on these themes. Thereby, higher education researchers might take up the themes, which actors of the higher education system consider salient; additionally, higher education researchers certainly can initiate future scenarios with a critical and compensatory thrust; they might stimulate a discourse about issues, which policy agents and practitioners tend to overlook.

7. Growing Enrolment Scenarios

As already pointed out above, study beyond secondary education has expanded dramatically. In taking Trow's definitions of 'mass' (higher education), i.e. an enrolment rate higher than 15%, as well as 'universal', i.e. an enrolment rate higher than 50%, and in looking at tertiary education, i.e. also including students at short or 'vocational' programmes, we note that 'mass tertiary

education' was already reached on average in the European and North American countries in the 1960s and 'universal tertiary education' in the early 1990s. In Latin America, mass tertiary education was reached in the 1980s, and universal tertiary education can be expected soon. In East Asia and the Pacific, the mass stage was reached on average around the year 2000, and universal higher education might be achieved around one decade later than in Latin America. In Africa, these stages are likely to be reached substantially later. The expansion trend was observed all over the world, but the stages were or will be reached at different moments in time.

The OECD (1998) already predicted in the late 1990s that entry rates to tertiary education of about three quarters would be customary in the 21st century in economically advanced countries. As a consequence, we can expect that many students enrolled in the 'tertiary education sector' will end up in occupations with a below-average income. Finally, those not partaking in tertiary education will eventually be merely a residual and potentially disadvantaged minority in society.

8. Higher Education and the World of Work Scenarios

In the 1960s and 1970s, a lively, contradictory debate about the relationships between higher education and the world of work emerged in economically advanced countries in the wake of substantial higher education expansion (cf. Teichler, 2015a):

- On the one hand, expansion of higher education was portrayed as beneficial: those with the highest level of educational attainment continue to be most highly rewarded economically and socially, and there is a clear positive correlation between graduation rate and economic success of a country.
- On the other hand, concern grew about 'mismatch', 'over-education', and 'inappropriate employment', that is, an increasing number of graduates from higher or tertiary education end up in employment positions that are lower than one would consider appropriate.

Most economists in economically advanced countries, aiming at explaining the relationship between the expansion of higher education and graduate employment, believed in the existence of strong mechanisms in favour of a balance between the demand for a qualified work force and the supply of graduates. A growing demand for highly qualified persons was seen as a pulling factor for the expansion of higher education. If supply surpassed demand, a decline of income advantage was likely to occur - and as a consequence a reduction in the willingness to study and thus a decline of entry rates. And if 'mismatches' on the labour market turned out to be persistent, causes for market imbalances were sought, and recommendations were made to strengthen market mechanisms (cf. Hanushek & Woessmann, 2011).

Most sociologists, however, argued that an imbalance on the graduate labour market is endemic in the long run. The author of this article gave the following explanation (Teichler, 2009): traditionally, the status of a person was handed down by his/her parents and determined

by gender, while education was at best available to some socially select groups. With the advent of industrialisation, the relationships between learning, competence and work versus status distribution changed: social advancement was promised to those who successfully enhanced their competencies, and social inequality was justified as mirroring the varying competencies and achievements of individuals. However, an increase in educational opportunities and achievement rewards for almost everyone leads to more people striving for success in higher education in spite of decreasing distinctions between levels of education and employment positions. Thus, the supply of highly educated people exceeding demand is an expected result, and an end of the expansion of higher education is unlikely in spite of a stagnation of typical graduate jobs.

However, the supply beyond demand did not cause as serious problems for graduates in recent decades as warnings of 'over-education' claimed - at least not in economically advanced countries. Rather, additional graduates mostly ended in middle-level positions, where their competencies turned out to be useful in most cases. A substantial proportion of graduates contributed actively to an 'upgrading' of these positions, both in status and in the 'enrichment' of the work tasks.

There are no signs that this contradictory situation will disappear in the foreseeable future or that it will lead to a dramatic crisis. It would, however, be interesting and important for higher education research to observe the dominant trends of 'adaptation' towards such an endemic high supply of graduates. What weight will the following mechanisms have, which could be observed already for some period?

- Over-competition: The shortage of attractive occupational rewards does not discourage people from studying, but reinforces competition for entry and success at highly reputed universities. This 'rat race' for success often has negative consequences for the socialisation of students, the substance of learning, and on the life curves of learning and exhaustion.
- Relevance of minute educational differences or even revival of the relevance of non-meritocratic criteria: The more people are highly educated, the smaller are the differences of the students' and graduates' competencies. Therefore, different rewards in the employment system will often not be achievement-based but rather artificial. This may again lead to an increased importance of non-academic criteria for occupational success, for example parents' status and power, behavioural style, or biologically-based differences.
- Increase of adaptive behaviour: Students might become so strongly preoccupied with the hope of professional success that they seek any possible chance to achieve this. Adaptation to presumed wishes of employers may lead to the loss of any kind of creative, innovative and critical thinking. Some experts argue that the frequent use of terms such as 'employability' indicate a 'utilitarian drift' in higher education. Similarly,

institutions with a lower status might believe that they can easily imitate the most highly reputed institutions.

- Collapse of the reward system: The smaller the actual differences in educational achievement become, the smaller the differences of rewards might be at the end. Finally, differences of income and status might be viewed as so small that it is not considered worth anymore to strive for educational success. This might lead to a substantial loss of learners' motivation and altogether to a substantial quality loss in higher education.
- Dominance of post-industrial values: The more education expands beyond the immediate demands, the more graduates might be freed to harbour 'intrinsic motives' beyond economic success and to be interested in a desirable societal change, a better environment, and a better occupation-life balance.
- Upgrading and job enrichment: The more highly educated persons take over jobs traditionally not requiring a high level of education, the more the graduates themselves might try to change the character of their job. Thus, the graduates become agents of an upgrading of the jobs and of a reduction of the differences between high-level and low-level jobs, thereby contributing to a flattening of the occupational hierarchy.

These scenarios indicate that old notions of 'match' and 'mismatch' on the labour market are constantly challenged. They also show that occupational motives and behaviour might change substantially over time. Most importantly, they draw people's attention to the less privileged graduates from higher education: what is happening to the 'mass' and 'universal' graduates?

9. Diversity Scenarios

In the wake of educational expansion, attention has been increasingly paid to the extent and the modes of diversity in 'higher' or 'tertiary' education (see the overview in Teichler, 2007). It seems to be common sense to assume that an enlarging system is bound to diversify, because more institutions, more teachers, more students and more occupations of graduates are likely to be more diverse.

Most attention is paid to vertical diversity, that is, the extent to which study programmes, disciplines, individual or types of higher education institutions differ according to 'quality', 'reputation' and possible impact on the graduates' future career status (e.g. income and position). It is widely assumed that educational expansion leads to a steeper overall vertical diversity, but it could be possible as well that a flatter hierarchy emerges - at least in sub-sectors:

- If we look at the overall higher education system, we certainly assume an increase of diversity - a diversification: the talents, motives and job prospects of students are more likely to differ substantially, if 50% of the corresponding age group study, than some decades ago, when only 20% of the corresponding age group have studied.
- However, if we look at the overall educational system and the overall employment

system, we might assume that the cognitive competencies of students of the fifth decile differ less from the competencies of the second decile now - at times when both groups are enrolled in tertiary education - than they have been different some decades ago, when the fifth decile had compulsory education and possibly some vocational training on secondary education level, while the second decile had been enrolled in a bachelor programme.

In recent years, 'rankings' of 'world-class universities' have become the hottest issue of diversity. Rankings seem to have an enormous influence on the attitudes of university managers, scholars and politicians. In striving for the highest possible positions, many actors share the ideology of such rankings, according to which the quality of scholars' academic work largely depends on the university, where they work, national higher education systems with steep vertical differences between individual universities are most productive, and quality of higher education in a country can be enhanced, if one concentrates all highly talented scholars in a few universities. Moreover, the emphasis placed on rankings indicates a spread of the belief that fierce competition in the academic world between countries, universities and scholars leads to a better quality of teaching, learning and research (cf. the overviews and critiques in Kehm & Stensaker, 2009; Hazelkorn, 2011; Shin, Toutkoushian & Teichler, 2011; Shin & Kehm, 2013).

There are good reasons, however, to call into question the wisdom of the political dominance of such a race for moving up in rankings of 'world-class universities'. First, there is no real evidence that national systems with a steep hierarchy in the quality of universities are academically more successful than those with a flat hierarchy. There are various countries in Europe, where higher education is characterized by a flat hierarchy (for example Finland and the Netherlands), but the 'academic productivity' seems to be very high, if it is measured for the whole country relative to the population size, in comparison to countries with a steep hierarchy (for example the U.S. and the United Kingdom).

Second, we might argue that an increase of 'horizontal' diversity, i.e. variety of substantive 'profiles' in teaching and learning and in research, is more important in the wake of expansion than any concern about vertical diversity. Therefore, strong political measures might be needed to reduce attention paid to rankings in favour of an encouragement in the search for a variety of interesting and valuable profiles.

Third, we might conclude that the biggest change which is really happening on the way towards 'knowledge society' is not the function of teaching, learning and research at the top of the knowledge system, but rather the dramatic increase of the level of educational attainment of persons active in intermediate-level occupations: What is really happening in a society, where a professionally active persons with an average income had nine years of schooling about 50 years ago, but has 16 years of schooling today? We could argue that it is more important to pay attention to the lower end of vertical diversity and to the extent of horizontal diversity than to

successes and failures of top universities.

10. Utilitarian Drift Scenarios

We tend to use words such as 'work society', 'achievement society', *'gakureki shakai'* or 'leisure society' in order to underscore that a certain feature - here: work, achievement, formal educational success or leisure - has become or is on the way to becoming the most central feature of society. The term 'knowledge society' suggests that knowledge becomes highly important or even the major driving force of society. But there is a flip-side to the coin: the more relevant knowledge in principle becomes for society, the more higher education seems to be expected to visibly maximise its relevance for society, in this case to produce knowledge which promises to be useful for society.

There are many voices complaining that the basic character of the university is lost, namely the search for previously unknown knowledge, which is not steered by the desire to be useful, but rather by a pursuit of knowledge for its own sake, and which eventually might lead to results which turn out to be useful. Nowadays, however, many researchers believe that the 'knowledge society' calls for research, which is driven from the outset by efforts to reach results which lead to visible 'innovation'. Research priorities steer the money flow to those areas of research where economic growth seems to be most likely. Many advocates of the 'knowledge economy' are proud that basic research might eventually trigger off applied research which finally could lead to practical innovations. Thus, research might help doubling fuel injection to a car, reduce cheating with credit cards, or identify explosives on the bodies of airline customers. But research of that kind is unlikely to 'produce' unexpected novelty and is likely to remain helpless vis-à-vis the big crises facing humankind and nature.

Similarly, the term 'employability' has become an extremely popular catch-phrase in the United Kingdom, but has also spread to other countries (see Yorke, 2007). It suggests that individuals and universities should maximise their efforts to increase the chances of graduates to get employed, get high status and income and possibly other employment benefits, and that study programmes in general should be subordinated to the presumed needs of the employment system. The author of this article has argued, in contrast, that the term 'professional relevance' would be more appropriate in describing the possible links between study programmes and the world of work. Institutions of higher education are challenged to reflect the likely consequences of study in the graduates' future work and other life spheres and possibly to change the substance of the study programmes - irrespective whether employers are likely to reward work which is interesting and meaningful for the future of mankind or not (Teichler, 2009).

There is a third element of a possible 'utilitarian drift' beside the call for research directly useful for innovation and the call for 'employable' study programmes: the increasing emphasis on competition. In the past, the belief was widespread that 'intrinsic' motivation or an 'inner-

directed personality' would be valuable for academic progress and for a valuable impact of higher education to society. Now, competition is high on the agenda as a mechanism of enhancing quantity and quality in education and research, and thus the call that managers, academics and students should behave like a 'homo oeconomicus', an 'economic animal', a 'status seeker' or, in the language of David Riesman, as an 'outer-directed personality'. 'Extrinsic' motivation is the rule of the game.

What does it mean for the future? The 'utilitarian drift' in higher education might be viewed as irreversible. The question remains, however, whether this trend destroys anything that does not fit into the main stream or whether it is possible at least to support counterveiling thrusts as well. Universities might free some activities of research deliberately from utilitarian pressures. And they might be proud to socialize students both for proper professional functioning according to the usual rules and tools and to be sceptics and critics, as well as to help their students to become pro-active members of society or 'change agents'.

11. Internationalisation Scenarios

Higher education is in many respects not constrained by borders. The knowledge system in various disciplines is completely or partially universal. Search for new knowledge all over the globe is seen as a 'must' in the academic world. International reputation of academics is often understood as synonymous with academic quality. Also many scholars adhere to cosmopolitan values. However, the regulatory systems shaping the governance, curricula and degrees, academic careers, funding and many other features of higher education have been predominantly national in the past.

Internationalisation of higher education seems to be just a matter of procedure today in some respects. International globe-trotting for research-related purposes has spread with growing wealth and affordability of international airfares. An increasing proportion of academic publications is co-authored by academics from multiple countries, thus suggesting rising international cooperation of researchers. Growing numbers of internationally mobile students tend to be viewed as the most obvious indicator of internationalisation of higher education (cf. the analyses in Teichler, 2004; Altbach, 2006; Teekens & De Wit 2007; Knight 2008).

However, there is not a consistent trend towards a declining relevance of national borders in academia. The absolute number of internationally mobile students has increased substantially, but in taking into consideration the overall growth of the number of students we note that the rate of mobile students has remained almost constant at somewhat above two percent. The different countries of the world are quite unevenly involved in the internationalisation of higher education. Finally, we observe the ironic phenomena that internationalisation of higher education policies have become very nationalistic. Some rich countries want to fund their higher education with the help of foreign students, who are rich children from poor countries. Some countries

want to improve the quality of higher education at home through 'brain gain'.

A close look reveals that 'internationalisation' of higher education might be held together organisationally by international offices and possibly by international vice-presidents and international committees within universities, but it tends to be a very heterogeneous setting. The author of this article suggests that the difference between vertical and horizontal links across borders is most salient.

On the one hand, an enormously wide arena of vertical knowledge transfer is noted. Newer and qualitatively superior knowledge is sought abroad, or knowledge is exported from the top to the less favourable layers of higher education in other parts of the world. Student 'degree mobility', that is, moving the whole study programme from a low-income and medium-income country to an economically advanced country, as well as 'brain drain' of academics are the most visible phenomena of this principle: adaption to the advanced country is the rule of the game in order to maximise knowledge acquisition.

On the other hand, an arena of horizontal cooperation and mobility is noted. 'Learning from contrast' by partners 'on equal terms' is viewed as a source of academic creativity. This is strongly enforced in Europe: Schemes of short-term student mobility (e.g. 'ERASMUS'), of junior researcher mobility (e.g. 'Marie Curie'), and for the cooperation of researchers from different European Union countries are the most visible flagships of this principle.

We cannot take for granted that the current features of 'internationalisation' will persist in the future more or less unchanged or merely growing. 'Virtual mobility' might increasingly substitute 'physical mobility'. Institutions of higher education might pay more attention to curricula reform in favour of 'internationalisation at home' rather than supporting the minority of mobile students. The value of 'learning from contrast' might lose its importance, because knowledge as well as the daily life might become so similar across countries that there are not anymore contrasting challenges. Furthermore, the international openness of the academic system might decline, because universities are more strongly driven by the competitive imperatives of the 'knowledge economy'. Finally, we might move towards increasing international conflicts, which might reinforce hegemony, seclusion and dangerous situations rather than mobility and border-crossing activities at ease.

12. Organisational Scenarios

In many countries, one could observe substantial organisational changes over the years. In some countries, these changes began in the 1980s, in others one or two decades later. But the direction of these changes seems to have been quite common, even if differences in detail are noteworthy. We observed less detailed supervision of higher education by government, a stronger strategic role of the individual institutions of higher education, a strengthening of the power of management vis-à-vis the professors, a growth of evaluation activities, increasing

components of incentive steering, a stronger involvement of external 'stake-holders' in decision-making processes, etc. (see Amaral, Meek & Larsen, 2003; Cavalli, 2007; Paradeise et al., 2009).

Some experts argue that the organisational concepts of U.S. higher education have spread world-wide, while others argue that the new management practices in countries, where governments historically had a strong influence on higher education, continue to be clearly different from those in countries like the U.S., where governments traditionally had a weak influence. Views also vary, whether one can observe a growing 'autonomy' of higher education institutions or whether the multitude of today's 'pressures' have increased the external power imposed on institutions and practically have reduced 'academic freedom'. Some experts argue that the 'modern' features of organisation have lead to a streamlining of power and a clearer division of responsibilities, while others argue that a 'super-complexity' of organisation has been implemented which is hardly manageable anymore.

What will be the future? Many analyses of the current scene seem to assume that we have reached a 'modern' setting now which will persist. Other argue that we have experienced frequent changes of governance and management in recent decades; it is only a question of time, when the next fashion in this domain will appear and take over.

There seems to be, however, a trend which might lead to a completely new constellation. Some observers suggest that there are three trends of 'professionalisation': the university management becomes more professional in developing leadership competences; the professors become more professional in enhancing - beyond their disciplinary knowledge - their expertise in curricula, teaching, learning, guidance, etc., as well as in research management; 'administrators' are increasingly substituted by 'higher education professionals', who are both experts of administration and of the functioning of teaching, learning and research. It will be interesting to observe the future of higher education, if more or less all the major players are not anymore the combination of experts and amateurs, as they have been in the past, but will be knowledgeable experts. Will this lead to smarter ways of power fights, to an inflated proportion of time of academics spent on administration, to increasing activities of advertisement rather than transparency, or to an improvement of higher education in general?

13. Concluding Observations: Future Potentials of the Tertiary Education Sector

Most efforts to anticipate future developments start off from long-term trends or from the recent past. A first glance at the recent past of higher education shows that attention has been paid to a multitude of issues in the public discourse on higher education across economically advanced countries. One can name more than a dozen themes or one might classify them into groups of half a dozen or a few more, but a breadth of issues is visible in any event.

To some extent, the major issues discussed are similar across countries. For example, we note that in all economically advanced countries issues of governance and organisation have

played a substantial role: obviously, hopes are widely spread that reforms as regards the instruments of steering could play a crucial role for strengthening the quality, relevance and efficiency in higher education. Also, rankings of 'world-class universities' have become a fashionable theme of discussion; this seems to have been driven by a widespread belief that the quality of higher education at the apex of the system is crucial for the future of modern societies.

One might add, however, that the discourse about the situation and the future tasks of higher education are by no means uniform across countries. Certainly, some themes seem to be global. But we note regional priorities of discussion: For example, international cooperation in higher education and the value of short-term student mobility is more highly on the agenda in Europe than in many other regions of the world. We also note that certain issues are high on the agenda in some countries, but hardly play any role in others.

There is an issue which one could have expected to be higher on the agenda than it actually has been. If we look at the trends in higher education and the widely assumed reasons for major changes, the substantial growth of student numbers over a period of more than five decades certainly is one of the most noteworthy developments. Already many years ago, the view was widely shared that higher education is bound to diversify in the process of expansion: The top sector of higher education might keep more or less the functions which a small higher education system has had in the past. But the newly emerging sectors in this process of expansion are likely to call for a new understanding of the role of higher education in a 'highly educated society', as the author of this article has called it (Teichler, 1991).

In the process of expansion, various efforts have been made to popularize new terms in order to depict the characteristics of the new sectors: 'short-cycle higher education', 'non-university higher education', etc. The major international organisations came to the conclusion in the 1980s that one should not consider 'higher education' anymore as the umbrella term, but rather 'tertiary education'. Now, this term is often employed in international comparative studies in two respects: First as an umbrella term covering almost all pre-career education beyond secondary education, and second as that sector which traditionally would not have been considered as 'higher education'. We can talk about the 'tertiary education sector' as comprising students in programmes shorter than bachelor programmes and/or more practice-oriented and more 'vocational'. The OECD reports that 39% of the corresponding age group has graduated with at least a bachelor on average across OECD countries in 2010, while 10% successfully completed programmes of the tertiary education sector. Japan (40% vs. 25%) and Germany (30% vs. 14%) belong to those countries, in which the tertiary education sector is relatively large in comparison to the higher education sector with at least bachelor degrees.

The tertiary education sector certainly is in need of careful consideration and forceful future policies. It provides pre-career education and training for persons in intermediate-level occupations. These are occupations in which some decades ago persons professionally active had

not had much more than 9 years of schooling including vocational training, but nowadays 14 or 15 years of schooling. Often, the questions are raised: To what extent was more education absolutely needed? To what extent do we observe mere educational inflation without real use of additional competencies? To what extent does more education serve as a dynamic power to change the character of the work in intermediate-level occupations?

Altogether, we note that the term 'tertiary education' has not become popular in the majority of economically advanced countries; it remained customary to use the national terms for different institutions, programmes and degrees rather than underscoring anything in common. For example, the characteristics of *'tanki daigaku'*, *'kôtô senmon gakkô'* and *'senshû gakkô'* are more strongly emphasized in the public discourse in Japan than any common element of a 'tertiary education sector'. One of the reasons is certainly that we note in many advanced countries different roots of institutions and programmes: the one of them is occasionally named 'short-cycle higher education' and the other 'advanced vocational training'. There are signs, however, in various countries that this divide gets blurred over time. For example, a scholar analysing such developments in German-speaking countries coined the term "hybridization of vocational training and higher education" (Graf, 2013).

In the past, we noted that certain issues of higher education are in the limelight of public debates only for at most a decade. Thus, we might predict that the public excitement about ranking of 'world-class universities' and about strong university management will loose momentum. The 'tertiary education sector' or 'education and training for middle-level occupation' (or 'universal higher education', as it has been called some decades ago) could be the theme which will draw more attention than in the past. Because the interpretation of 'knowledge society' might change: the 'wisdom of the many' might be the most salient issue: superfluous, decorative, or a dynamic potential for a more desirable society? The future will tell.

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