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**The Impact of the Post-Bologna Reforms  
on German Higher Education  
and the Transition of Graduates into the Labour Market**

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Hubert Ertl

SKOPE, University of Oxford

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## **Abstract**

This paper outlines some of the changes that have been initiated by the Bologna process in German higher education. In particular, it provides a discussion of the impact of these changes on the transition of graduates into the world of work. The paper is based on an analysis of recent studies on students who have graduated with the new type of degrees that were introduced as a result of the Bologna agreement.

The paper finds that many of the reforms that took place during the 2000s can be traced back to earlier attempts to improve the conditions of researching, teaching and studying in German higher education. It is argued that employers are, on the whole, supportive of the new Bachelor programmes and that the reforms have addressed some of the long-standing demands of employers. However, the answer to the question as to whether Bachelor degrees are enabling graduates to transition successfully into the labour market is far less positive. The data analysed show particular difficulties for Bachelor graduates from universities as compared with graduates from other types of higher education institutions. Many university Bachelor graduates have difficulties in finding permanent graduate employment and to reach adequate positions within the first year of employment.



## Introduction

German higher education has long been based on Humboldt's principle of the unity of research and teaching. The traditional role of universities has been the research-oriented education of students, for which the close connection between research activities and students' learning processes has been central. The learning model of this type of education afforded students a significant freedom to choose the courses they wanted to take and to organise their timetable according to their own interests and needs. This is in accordance with another Humboldtian principle, that of academic freedom, which is afforded not only to academics, but also to students (Humboldt 1809). University graduates were destined for professional careers in the private or public sector, for which value-based judgement, independent thinking and the critical appraisal of the status quo through constant application of research-oriented ways of working were deemed necessary.

In the institutional set-up of higher education since the 1970s, polytechnic *Fachhochschulen* had the role of providing shorter, more practically-oriented qualifications, aimed at the particular skill needs of the economy of a given region. The education offered by the *Fachhochschulen* was in some ways more similar to the teaching in secondary schools than at universities, organised around set timetables, leaving limited scope for choice and differing learning tempos. The degrees offered by *Fachhochschulen* were more directly linked to careers in the private sector, for many subjects resulting in the smoother transition of graduates to the labour market (there were lower unemployment rates than for university graduates), but this was usually associated with lower entry level salaries than for university graduates (Fabian and Briedis 2009, Rehn *et al.* 2011).

The Bologna process and the reforms in the aftermath of the signing of the Bologna Declaration in 1999 seem to have fundamentally changed the structure and underlying rationale of German higher education and the connection between higher education and the economic system (Staufenbiel 2010). Thomas Sattelberger, human resources director at Deutsche Telecom, argued at the opening of a conference on the first ten years of the Bologna process that 'a European labour market clearly requires a European education market' (Sattelberger 2009).<sup>1</sup> The main German employer

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<sup>1</sup> This conference was jointly hosted by the main German employer associations and the standing conference of higher education rectors, Berlin, 8 July 2009.  
All translations from German in this paper are by the present author.

associations have been supportive of the Bologna process but criticise the lack of knowledge relevant to practice and the level of skills of students graduating from the new Bologna-style degrees, as well as insufficient quality assurance mechanisms in higher education institutions (BDA 2012, BDI *et al.* 2012).

This paper outlines some of the changes that have been initiated directly and indirectly by the Bologna process, and discusses the impact of these changes on the transition of graduates into the world of work. It is only very recently that substantial numbers of students have graduated with the new type of degrees that were introduced as a result of the Bologna agreement (Pankow 2008, Dettleff 2011a, Rehn *et al.* 2011, Stifterverband 2011). Therefore, it is only now that sufficient data on the transition of these graduates into the labour market are available, allowing for the assessment of the changes the Bologna process has initiated in this area.

### **Higher Education in Germany pre-Bologna**

An important point of reference for laying down the ‘baseline’ of the state of German higher education before the start of the Bologna reforms was the unification of Germany in 1990, which meant that the western system of higher education was, by and large, transferred to the former GDR. The mechanisms and consequences of this process have been discussed in great detail elsewhere and do not need to be repeated here (e.g. Wissenschaftsrat 1992, Kocka 1994, Rust and Rust 1995, Weiler *et al.* 1996, Führ 1997, Pritchard 1999, Arnhold 2000). However, there are two aspects of this process that are of importance for the understanding of significant elements of the post-Bologna reforms.

The first aspect was described by Kehm as an ‘immense evaluation exercise of the East German system of higher education [...] in which many West German academics became involved’ (Kehm 1999: 74). The evaluations of institutions in the east included the assessment of the quality of teaching and research provision, the connection between staff and the socialist regime and particularly the Stasi (the East German secret police), and the role of socialist ideology in the higher education curriculum. An initially unintended consequence of the evaluations was that western universities could not maintain their traditional resistance to peer review and external evaluation. In many cases, this resistance had been justified with reference to the Humboldtian principle of the freedom of universities in their internal processes. This



point of view became increasingly untenable because academics from the west were instrumental in the high-stakes evaluation of the eastern German higher education system. As will be argued in the next section, this opened the door for the introduction of external evaluation and peer review of the quality of teaching and research in the unified system.

The second aspect is the task of transforming the eastern German higher education landscape in line with structures in the west meant that some overdue reform projects in the west were not carried out. Many of the reform proposals can be traced back to the 1980s and mainly aim at reducing the time German students spend in higher education, and increasing the attractiveness of the sector to students from abroad (see Wissenschaftsrat 1988). Reform attempts that had failed due to a general lack of political consensus and/or scarce funding in the 1980s (Wissenschaftsrat 1993), were put on hold in the early 1990s because all available resources were focused on unification.

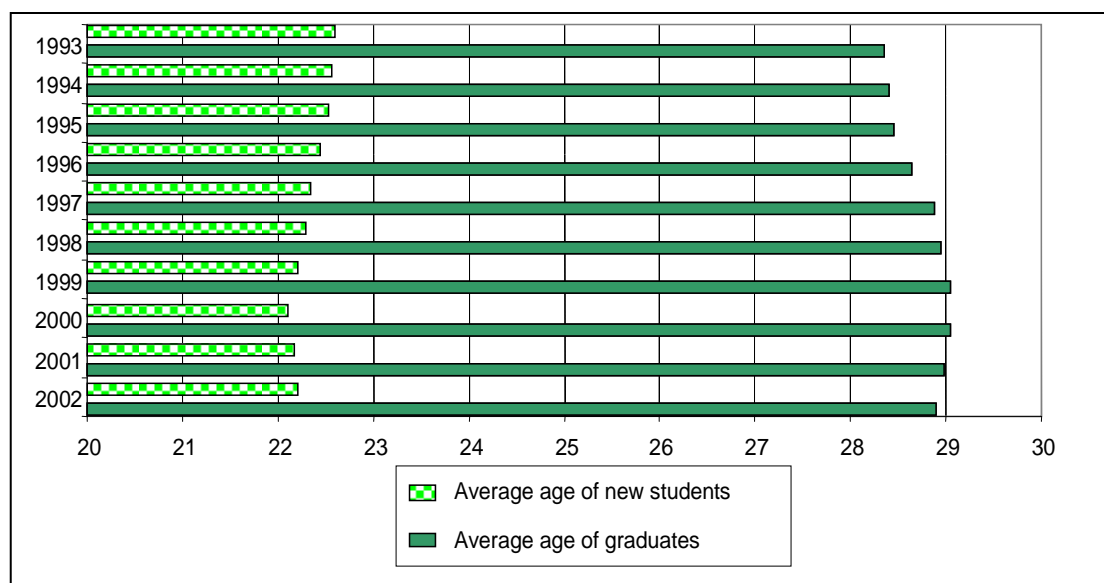
The tasks involved in restructuring higher education in the east were considerable and amounted to the setting up of entirely new legal, administrative and institutional structures that would establish a unified higher education system in the new Germany. This entailed the formation of a new legislative framework for higher education in the east, the winding down of some eastern German institutions, the restructuring of the institutional set-up, the reform of academic staff structures, and the developing of new funding mechanisms for teaching and research at eastern German universities (see Pritchard 1999).

Apart from restructuring and reform of the higher education sector, the unification process fundamentally changed the connection between education and the economic system. While a comprehensive manpower planning approach, in which the needs of the state-run combines were central, had dominated this connection during the GDR time, unification brought marketisation and freedom of choice for students, graduates and employers in an entirely changed labour market.

Since so many potential reform resources were bound up in the unification efforts and the fundamental changes going on in the wider society, the resulting putting-off of reforms in higher education meant that by the mid-1990s many observers regarded the German higher education system as in urgent need of reform. There was a wide-spread discussion on 'reform congestion' amongst policy-makers, fuelling the criticism of the sector (Nagel 2010). The criticisms levelled at higher

education by policy-makers and the wider public included a perceived lack of efficiency, quality and attractiveness of institutions generally and of teaching provision more specifically. Three particularly problematic and intertwined aspects highlighted by the critics were: the high proportion of students that changed subjects, the long duration of studies and the high drop-out rates (Wissenschaftsrat 1993). One consequence of these problems can be seen in the relevant data: the average age of graduates increased between 1993 and 2002 and the average duration of studies also increased (see Figure 1). This was picked up by politicians as particularly worrying, in view of the long-standing general concern in Germany that young people are too old before they enter gainful employment; a concern that is also founded in unfavourable comparisons with other countries (cf. Eurydice 2000).

**Figure 1: Average age of new students and graduates in Germany 1993–2002 (Source: Statistisches Bundesamt 2003)**



Employers also criticised higher education regarding the issues of studying in German higher education taking too long and drop-out rates being too high. According to employer voices, both problems were due to the fact that higher education institutions neglected their duty of care for students – they left students on their own to organise their studies (Oetker 2009). The implicit assumption of universities had been for too long that everybody who starts to study at a university aimed to follow an academic career. Bologna was seen by employers as an opportunity to embed more ‘practical relevance’ in study programmes (Oetker 2009).

Practical relevance in this context meant relevant knowledge and skills for the labour market.

While the higher education sector, on the whole, did not accept these criticisms and complained about a general lack of funding and an overload of students instead, it is clear that the fierce criticisms in the 1990s prepared the way for a new thrust of reforms and innovation which seized upon the dynamic brought about by the Bologna Declaration to initiate change in the sector.

### **Enter Bologna**

In 2009 we are looking back at ten years of an unprecedented reform process. It was initiated by the ministers of education of, in the meantime, 46 countries who on 19 June 1999 in Bologna, Italy, agreed on a programme of work which aims to make study programmes more comparable and internationally competitive. A decade later we are ‘in the midst of it.’ (HRK 2009)

This statement by the standing conference of higher education rectors (*Hochschulrektorenkonferenz*) comments on the impact of the Bologna process on German higher education. The quote, and the document it is taken from, also indicates that the standing conference strongly supports the implementation of the Bologna agenda in the German context, which led, for instance, to the so-called ‘Bologna Project’, funded by the standing conference and supporting the implementation of the Bologna aims at German higher education institutions (HRK undated). Also, the statement acknowledges that the reforms initiated by the Bologna process are ongoing in German higher education.

As early as January 2000 the German Science Council published a comprehensive recommendation for implementing the degree structure proposed in the Bologna Declaration (signed in June 1999) at German universities and *Fachhochschulen* (Wissenschaftsrat 2000). As the Science Council plays an important role in making recommendations to the federal government and the *Länder* for overall capacity and structural planning of higher education, including regional distribution of institutions (see Kehm 1999: 27f), the early backing of the Bologna agenda by this body was an important signal for the whole sector. This signal was certainly picked up by the standing conference of higher education rectors who unequivocally agreed with all the main aims set out by the Bologna Declaration (HRK 2001).

These aims can be summarised as follows:

- Introduction of a comparable degree system, consisting of two main cycles: an undergraduate cycle of three years, providing qualifications relevant to the labour market, and a graduate cycle of up to two years, leading either to employment or to a doctorate. The 2003 Bologna follow-up conference added doctoral programmes of about three years as a third cycle.
- Introduction of a system of credits (ECTS – European credit transfer system) to allow for recognition of higher education studies at different providers and in different countries.
- Promotion of mobility through credit transfer, student exchange and transnational co-operation of higher education lecturers, researchers and administrative staff.
- Promotion of a European-wide system of quality assurance by developing comparable criteria and methodologies for evaluating quality in higher education.
- Promotion of the European dimension in higher education with regard to curriculum development, institutional co-operation, transnational programmes of study and research, and mobility schemes (see Bologna 1999).

These aims and the unequivocal support they received from the main professional bodies in German academia triggered a number of reforms in the early 2000s that were in most cases justified with explicit reference to the Bologna Declaration.

Commentators have emphasised that the underlying rationale of the Declaration and the ensuing reform processes are essentially economic ones. Wuggenig (2008) demonstrates that the Bologna Process was associated with the European Lisbon Strategy from the beginning of the 2000s, which in turn, regarded inner-European mobility of labour as an essential component of the employability of students, the European economic growth strategy, and the international competitiveness of EU member states.

### **Changes in the Aftermath of Bologna**

There have been a number of changes in German higher education that have been initiated directly or indirectly by the Bologna declaration. These include: the strengthening of the autonomy of higher education institutions (for instance, increasing freedom on how institutions spend government grants and which students they admit); new mechanisms for accrediting study programmes, and increased

institutional differentiation (for instance, through extra funding provided by the ‘excellence initiative’). Using Burton Clark’s (1983) triangle of co-ordination as a framework, it has been argued elsewhere (Ertl 2013) that the post-Bologna reforms have moved German higher education some way away from state control towards the market, i.e. instead of direct regulation, competition between institutions determines, to a greater extent, the flows of public funding and of students.

It needs to be recognised, however, that Bologna seems to have facilitated developments that had already been mooted before the Declaration was signed: in her UNESCO country report on German higher education, published just before the Bologna Declaration was signed, Kehm argued that at the time of writing the federal government and the *Länder*

are tending, for the first time since 1945, towards deregulation and differentiation rather than towards harmonization and legal homogeneity in higher education. This tendency is clearly leading toward decentralized reform and renewal activities, currently still in a more-or-less experimental state, but multiplying their approaches, modes and projects. (Kehm 1999: 27)

This seems to suggest that the Bologna process started at a time when reform had already gathered some momentum, in many cases revitalising earlier initiatives for change which had not produced tangible successful outcomes.

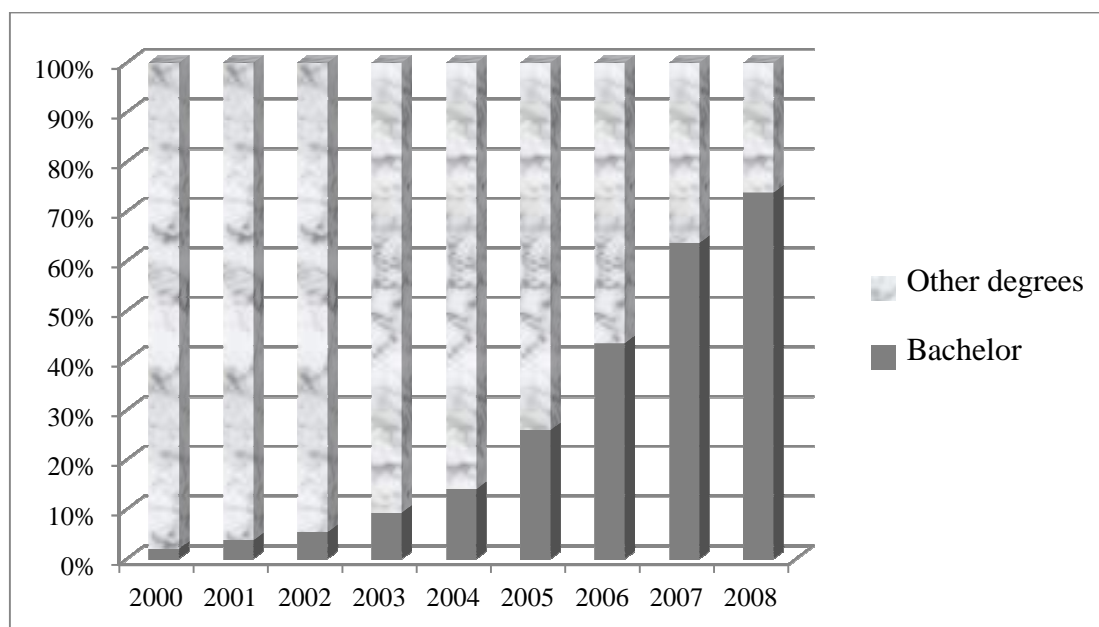
For the purpose of this paper, two changes will be outlined briefly to provide the basis for the analysis of the impact of post-Bologna reforms on German higher education on the transition of graduates into the labour market.

### ***New study programmes***

The most tangible change in the German higher education landscape in the aftermath of the Bologna Declaration has been the introduction of Bachelor degrees as a new type of first degree. Since 2000, the number of Bachelor degrees offered by universities has steadily increased, with around three-quarters of new students enrolling in 2008 starting their studies in this type of degree. At the same time, the proportion of students starting their higher education studies in one of the traditional degree programmes, concluding with the degree of Diploma or Magister or with a State Exam has decreased (see Figure 2). Inevitably, this change regarding new students has also resulted in a growing proportion of students who graduate with a

Bachelor degree. In 2009 this proportion had grown to 21 per cent of all graduates (Statistisches Bundesamt 2011b).

**Figure 2: New undergraduate student enrolment 2000-2008 (Source: Statistisches Bundesamt 2009)**



The main areas in which students still enrol in traditional types of degrees are: law, medicine (including dentistry and veterinary medicine), engineering and some areas of teacher education. The overall provision of Bachelor degrees depends on decisions made at *Länder* level and at the level of individual institutions.

It is important to note that the new Bachelor and Master's degrees have developed at both universities and *Fachhochschulen* and that both types of institution have the right to award the same type of degrees. Traditionally, *Fachhochschulen* had mainly awarded the degree of Diploma, and had to indicate in their degree certificates, for instance, that the degree was awarded by a *Fachhochschule* by adding '(FH)' (cf. section 19 of the Higher Education Framework Law, HRG 2005).

The increase in the proportion of students in the new Bachelor programmes is important with regard to one of the long-standing concerns about higher education in Germany – the overly long duration of studies. While in 2009 it took students an average of 12 semesters<sup>2</sup> to finish a traditional type of degree (Diploma, Magister, State Exam) it took only 6.4 semesters to finish a Bachelor degree. Even if one argues

<sup>2</sup> The German academic year comprises of two semesters, a winter and a summer semester, both lasting about 16 weeks.

that the new Master's degrees are the appropriate equivalent of traditional first degrees in the German context, the overall average time for graduating from a Master's degree is, at 10.5 semesters, significantly lower than what was required for a traditional degree (Statistisches Bundesamt 2011a).

The shorter duration of studies has contributed to a slow but consistent decrease in the average age of graduates in the 2000s, which stood at 27.1 years in 2009 compared with just over 29 years in 2000 (see Figure 1). However, factors such as changes to the regulation on when children start schooling and the reduction of the duration of military service and community service (this only applied to men) are also likely to have contributed to the lower average age of graduates in Germany.

The new degree structure seems also to have contributed to an increase in the efficiency of teaching provision. One measure of efficiency in this respect is the proportion of higher education graduates as a percentage of the overall cohort of the population. This proportion of graduates (which does not include people who graduate from a second or third degree programme) is a measure of the 'output' of the sector and is as such more indicative than the participation rate or the number of new students since it takes account of drop out figures. The graduate rate, as calculated by the Federal Office for Statistics (see Table 1), shows a continuous increase since 2000 and also shows that there are now more female than male students graduating from German higher education.

**Table 1: Number of graduates and graduation rates in German higher education (HE) (Source: Statistisches Bundesamt 2011a and 2011b: 141)**

Year	Number of HE graduates	Graduation rate: overall	Graduation rate: female	Graduation rate: male
2000	176,654	16.9	16.2%	17.5%
2006	220,782	22.2	23.2%	21.3%
2008	260,489	26.2	27.7%	24.7%
2009	288,875	29.2	30.6%	27.8%

While the increases in the proportion of graduates are clearly linked to an increase in participation rates (see Statistisches Bundesamt 2011b: 14, 123), there is also evidence that the restructuring of study programmes in the wake of the introduction of Bachelor and Master's programmes has reduced the risk of drop out (see Heublein *et al.* 2008, Statistisches Bundesamt 2009 and 2011c). However, this

finding needs to be regarded as tentative as there are also indications that the more tightly structured nature of Bachelor degrees (compared with the more flexible traditional types of degrees) has resulted in an increased number of examinations which are, in turn, quoted as an increasingly important reason for dropping out amongst Bachelor students. This is also the reason for drop-out to occur significantly earlier in Bachelor programmes (Heublein *et al.* 2010: V-VI).<sup>3</sup>

### ***Increased importance of dual study programmes***

Dual study programmes have been in place since the 1970s but they only developed into a significant educational option at the boundary between vocational and higher education in the last decade. Their growing importance is connected to the introduction of Bachelor degrees in Germany in the aftermath of the Bologna Declaration of 1999. Generally, Bologna-style Bachelor degrees aim to be more practically relevant than traditional German degrees and to provide students with high levels of employability. In order to achieve these aims, some higher education institutions have started to combine elements of what is traditionally considered part of the initial vocational education and training (IVET) sector into their study programmes; this represents the basic rationale of dual study programmes.

There are a number of models for combining IVET and higher education programmes (AusbildungPlus 2012). The most important distinction is the one between programmes that integrate an entire IVET qualification and programmes that include phases of practical work during higher education studies. Both types of programmes are more closely linked to the world of work than traditional higher education degrees. The programme 'Initial Training Plus' defines the amount of company-based training required for a programme to be classified as a dual study programme as at least 12 months over the course of a typical three-year study programme. This is significantly more than the duration of placements that are part of some traditional degree programmes. A further characteristic of dual study programmes is the close collaboration of two learning venues, a higher education institution and a training company, resulting in a systematic combination of theoretical and practical learning. The aim is the organisational and curricular

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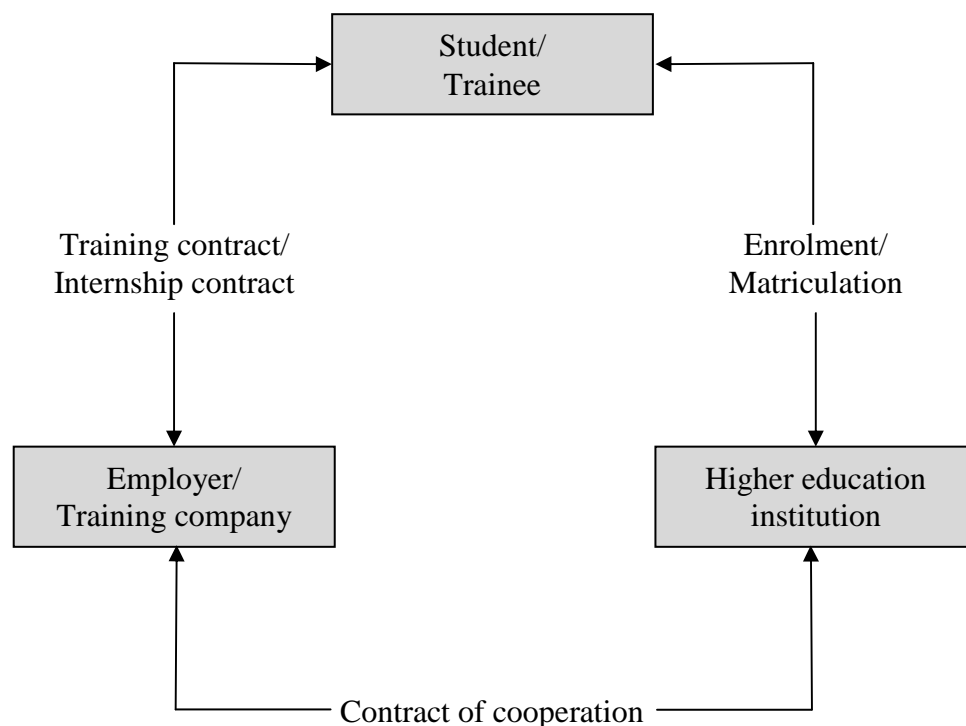
<sup>3</sup> The average time spent at university by students who drop out of Bachelor programmes is 2.3 semesters, by students in traditional types of programmes it is 7.3 semesters (Heublein *et al.* 2010: VI). It can therefore be argued that Bachelor programmes at least reduce time wastage.



dovetailing of higher education study and work-based learning (AusbildungPlus 2011: 20).

For all types of dual study programmes a higher education institution and an employer have a contract of co-operation which specifies the roles and responsibilities of the two partners in the programme. The contracts also regulate the admission criteria and determine the organisational and thematic integration of study and placement phases (Weich 2011: 75). Students are enrolled at the higher education institution and have a training contract with the company. Thus, the study programmes are characterised by a dual contractual structure, with the learner spending time as both a higher education student and a company-based trainee:

**Figure 3: Relationship between partners in dual study programmes (cf., StudisOnline 2012)**



In cases in which a full dual system training qualification is integrated into the study programme, graduates attain a higher education qualification (in over 90 per cent of cases a Bachelor degree) and a full vocational qualification in a state-recognised training occupation. This results in programmes that typically include about 30 months of higher education based study and 24 months of company-based training (Hochschule dual 2007: 5). In these types of programmes the school-based

part of the dual system training is either provided by the higher education institution or a vocational school (or a combination of the two). In all cases the student is enrolled at the higher education institution and has a training contract with the training company along the lines of contracts issued for dual system training programmes. Students are paid a training salary by the training company which is, at least, in line with dual system training regulations for company-based phases.

For dual system training programmes that include phases of practical work, placement phases at companies are either full-time (specific days of the week or longer blocs) or part-time (allowing the higher education studies to continue at the same time). In total, students spend at least 24 months on higher education studies and at least 12 months on work-based training (Hochschule dual 2007: 5). Placement phases are linked thematically to what is learned at the higher education institution. Students are enrolled at the higher education institution and have a contract of some kind with the training company, either a work contract or an internship contract. In most cases, students receive a modest salary from the company during the placement phases.

The available statistics indicate substantive increases on the supply side in recent years. The growth rates of programmes was 12.5 per cent and 20 per cent in the years 2010 and 2011 respectively, reaching 929 at the date of the last available report (30/4/2011), 434 of which contained a full dual system IVET qualification. The majority of dual study programmes (545) are offered by *Fachhochschulen*, with universities only offering 28 programmes in 2011. The remaining programmes are offered by other types of higher education institutions. The most important institutional type amongst these is the so-called vocational academy (*Berufsakademie*) which is particularly strong in the federal state of Baden-Württemberg. This explains the uneven distribution of dual study programmes across the 16 federal states (AusbildungPlus 2011: 32). The biggest subject area for dual study programmes is business studies (378 programmes), followed by mechanical engineering (142) and IT (133).

The number of students enrolled in dual study programmes reached over 61,000 in 2011, representing an increase of 21 per cent compared with April 2010. Most students were studying at a *Fachhochschule* or a *Berufsakademie* and only 656 students were studying at a university. Employers are part of 40,000 collaborations with the different higher education institutions on dual study programmes,

representing an increase of 46.5 per cent.<sup>4</sup> This overall growth rate for employer engagement was driven by a significant increase in the area of business studies (73.8 per cent) The involvement of employers also varies regionally (AusbildungPlus 2011).

## **Graduates and the Labour Market**

### ***Background***

While concerns about an oversupply of university graduates and resulting graduate un- and under-employment can be traced back to the time of Wilhelm von Humboldt, the expansion of higher education in both parts of Germany in the 1960s and 1970s triggered wide-spread concerns about the emergence of an ‘academic proletariat’ (MPI 1994: 656f). In this discussion, two competing views were dominant: the demand-led approach and the supply-led approach. According to the demand-led approach, the demand for skills in the economy is the determining factor for the provision of higher education. Using human capital theory, this approach regards education as a factor of production and argues that the overarching rationale of economic growth needs to drive the planned expansion of higher education. The supply-led approach is based on the assumption that education is mainly a social arena in which individuals decide the level of education they want to achieve. According to this view, the availability of higher education must not be determined by the requirements of the economy. Proponents of this view argued that higher education graduates generate demand for their skills and knowledge on the labour market. While higher education policy in East Germany was dominated by the demand-led approach, resulting in manpower planning and the restriction of higher education growth, the supply-led approach became dominant in West Germany in the 1970s (MPI 1994).

Given this background, the data on the unemployment of graduates in West Germany between 1975 and 1990 clearly show that the rates of unemployment among graduates generally follow the development of overall unemployment, which, in turn, is closely related to rates of economic growth. However, graduate unemployment is consistently and substantially below the rate of overall unemployment. This was the case for graduates from universities and from *Fachhochschulen*. The data shows clear

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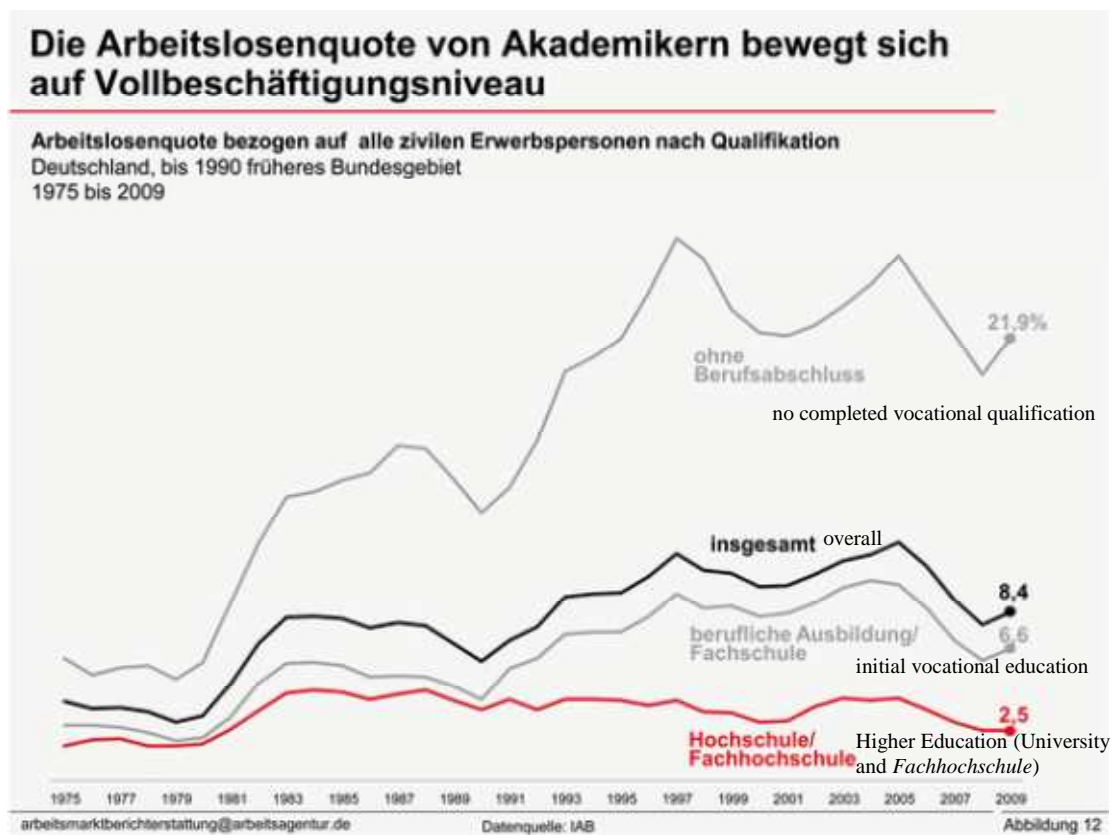
<sup>4</sup> This is not necessarily the same as 40,000 employers collaborating as these data are collected from the higher education institutions who are asked how many company collaborations they have. Therefore, an employer who collaborates with more than one higher education institution will be counted more than once.

differences between female and male graduates. While the rate for male graduates fluctuated between two and four percent, the rates for female graduates were higher throughout the period from 1975 to 1990, reaching a rate of nearly nine percent for female graduates from *Fachhochschulen* at the height of the recession in 1985 (MPI 1994: 661).

After Unification, the general pattern that graduate unemployment rates follow those of overall unemployment remained the same. Both rates peaked in 1997 and 2005 and recovered quickly after the financial crisis at the end of the 2000s (BfA 2012). In 2009, the unemployment rate of graduates went down to 2.5 per cent, its lowest level since the late 1970s. The following figure, provided by the Federal Agency for Work, shows the longer term development of unemployment for different levels of education.

**Figure 4: Unemployment Rate of Graduates at the Level of Full Employment (Source: BfA 2012: 18).**

Subtitle: Unemployment rate of labour market active civilians according to qualification, Germany, until 1990 western Germany, 1975-2009



In 2010, the unemployment rate for higher education graduates dropped further, to 2.4 per cent. As with overall unemployment rates, rates for graduates in

eastern Germany were consistently higher than in the west. In 2010, they were 2.0 per cent in the west and 4.1 per cent in the east (BfA 2012). As for graduates from all types of degrees and institutions, it needs to be acknowledged that unemployment rates vary between different subject groups, with graduates from most arts and humanities subjects being more affected by unemployment than those from other subject groups, reaching seven per cent for Bachelor graduates from *Fachhochschulen* and five per cent for the same group of graduates from universities (BfA 2012: 19f, Stifterverband 2011: 145).

### ***Bachelor and Master's degrees in the labour market***

A survey of a sample of over 1500 employers in Germany revealed that in spring 2010 13 per cent of companies employed graduates with a Bachelor degree and seven per cent employed graduates holding a Master's degree.<sup>5</sup> This compares with 48 per cent of companies who employed graduates with a traditional Diploma. These figures are clearly dependent on the size of companies, with two-thirds of large companies (over 250 employees) employing Bachelor graduates. The corresponding figures for Master's graduates and Diploma graduates are 48 per cent and 92 per cent respectively (Stifterverband 2011: 98). There are also significant differences according to subject areas, with comparatively few engineering Bachelors on the books of companies, a consequence of the continuing strength of traditional engineering Diplomas (see earlier section on the introduction of new types of degrees). However, with more Bachelor and Master's graduates entering the labour market it can be expected that all these shares will become more similar in the medium term. This view is also supported by the fact that the majority of employers surveyed indicated that they do not expect the career patterns of employees with different types of higher education degrees to develop in systematically different ways (Stifterverband 2011: 99).

There is no convincing way of establishing whether the introduction of Bachelor and Master's degrees has had an impact on the employment opportunities of

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<sup>5</sup> In 2007, the Association of German Chambers of Industry and Commerce (DIHK) surveyed over 2000 companies, of whom 22 per cent 'had experience' of employing graduates with Bachelor or Master's degrees (Pankow 2008: 2). Due to the fact that more and more graduates start their studies in these degrees, the share of Bachelor and Master's graduates is continuously rising. The Association of German Employers (BDA) reported in 2011 that 45 per cent of companies employ graduates with the Bologna style degrees (Dettleff 2011a). All studies in this area show that the share of Bachelor and Master's recruiters increases with the size and the degree of international activity of enterprises (Pankow 2008, Dettleff 2011a).

graduates in general. However, it is clear from the data available that the majority of Bachelor graduates stay in higher education to do a Master's degree. The study conducted by the Stifterverband in 2011 found that 77 per cent of graduates from university Bachelor programmes and 54 per cent of graduates from *Fachhochschule* Bachelor programmes are enrolled in a Master's programme one year after graduation (Stifterverband 2011: 66). In addition, nine per cent of university graduates and 12 per cent of *Fachhochschule* graduates plan to embark on a Master's programme in the future.

This is an important finding considering that the degree obtained after the first, three-year cycle of studies is deemed to be the qualification that allows entry to the graduate labour market according to the Bologna Declaration: 'The degree awarded after the first cycle shall be relevant to the European labour market as an appropriate level of qualification.' (Bologna declaration 1999) In contrast to this intention, only 31 per cent of Bachelor students feel that their programme is preparing them well for their envisaged occupational position, comprising 23 per cent of students at universities and 38 per cent of students at *Fachhochschulen*. This proportion rises to 41 per cent amongst Master's students (Grützmacher *et al.* 2011: 37-38). Employers have started to argue that, in some areas, it might be better for Bachelor students to study for seven or eight semesters (rather than the norm of six semesters) in order to achieve a level of competence that allows them to transition into the labour market. Some universities have reacted with more flexible study programmes which allow students to study longer than three years for their Bachelor degree (cf. Dettleff 2011b).

Only 15 per cent of graduates from university Bachelor programmes were in regular (i.e. permanent and full-time) employment one year after graduation. The corresponding figure for *Fachhochschule* graduates is significantly higher at 45 per cent (Rehn *et al.* 2011: III, 122-123). These differences between university and *Fachhochschule* graduates show the different roles that these types of institutions play in the development of skilled labour in the German context and, to some extent, in the recruitment preferences of employers.<sup>6</sup> The employment figures of graduates with

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<sup>6</sup> The 2007 DIHK study shows that graduates from higher education institutions that offer more job-relevant education and training are over-represented amongst newly recruited graduates. Amongst the 25,000 graduates that were recruited by the 2135 companies that took part in the survey, 37 per cent came from a *Fachhochschule* and nine per cent came from a *Berufsakademie*. These proportions can be

traditional degrees show that they are, much more than Bachelor degrees, regarded as qualifications for labour market entry, with 87 per cent of these graduates reporting that they are in employment one year after graduation. There are no differences in this respect between graduates from *Fachhochschulen* and universities (Rehn *et al.* 2011).

These findings from the survey of Bachelor graduates one year after graduation become even more important when they are compared with the intentions of students who are enrolled in Bachelor programmes. 73 per cent of university and 85 per cent of *Fachhochschule* students report that they aim to find employment after their Bachelor degree (Grützmacher *et al.* 2011: 37).

The main rationale for Bachelor graduates to continue their studies in a Master's programme is to enhance their opportunities on the labour market: nearly two-thirds of Bachelor graduates from universities and over half from *Fachhochschulen* emphasise this motivation for further study. It is important to note that 13 per cent of graduate employers state that they will not take on Bachelor graduates, but only graduates from Master's programmes (Stifterverband 2011: 100). In a separate study, Scholz and Buchheit (2010) found that most positions for Bachelor graduates are advertised as traineeships or placements. For the minority of positions advertised as regular employment, employers expect Bachelor graduates to have some degree of work experience. The authors conclude that Bachelor graduates only have the same opportunities in the labour market as graduates from traditional degree programmes if they have gained work experience either before or during their studies. This is in line with feedback from employers who demand the integration of phases of practical learning into Bachelor programmes (Pankow 2008: 3). This represents a problem for students in most Bachelor programmes because of the dense study curricula which leave little time for extra-curricular activities.

Over half of employers estimate the cost of introductory training of newly recruited graduates to be higher (35 per cent) or significantly higher (18 per cent) for graduates from Bachelor than from traditional degree programmes (Stifterverband 2011: 104).<sup>7</sup> This is linked to the consequences of the shorter duration and the more structured study programmes of Bachelor degrees, compared with traditional courses.

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compared with national figures according to which 25 per cent of students finishing their degrees in 2007 graduated from a *Fachhochschule* and just one percent from a *Berufsakademie* (Pankow 2008: 4).

<sup>7</sup> The employer association BDA quotes evidence that the proportion of companies that expend more effort on introductory training for Bachelor graduates than on graduates from traditional degree programmes is only 20 per cent (Dettleff 2011a).

Bachelor graduates are less likely to have had an opportunity to gain practical experience during their studies in the form of placements or similar (Rehn *et al.* 2011: IV-VI), and they are also less likely to have had a chance to study or work abroad. For instance, only nine percent of students in Bachelor programmes in business studies report that they have studied abroad. The corresponding figure for students in traditional degree programmes is 24 per cent. Accordingly, when students were asked about suggested improvements to their programmes, more than half of the students in university-based Bachelor programmes mentioned the opportunity to study abroad without this delaying progress in their studies (Stifterverband 2011: 9).

Looking at employment patterns according to the type of higher education institution that awards a degree, the 2007 online survey of over 2000 employers showed that *Fachhochschulen* and *Berufsakademien*, both types of institutions that market their degrees as being more closely linked to the needs of the labour market than university degrees, are in a strong position: amongst all new graduate recruits graduates from *Fachhochschulen* and *Berufsakademien* were over-represented (Pankow 2008).

### ***Level and type of employment***

As reported above, only a minority of Bachelor graduates enter the labour market without first studying for a Master's degree. One year after graduation 44 per cent of Bachelor graduates from *Fachhochschulen* and 21 per cent from universities are in work. Of the Bachelor graduates who are in employment one year after graduation, the majority are in full time positions. However, the types of employment vary according to the type of higher education institution and subject, as summarised in Table 2.

**Table 2: Employment of Bachelor graduates one year after graduation (in percent) (Source: Stifterverband 2011: 76)**

Type of employment Type of institution	Permanent full time	Fixed- term, full time	Permanent part time	Fixed- term, part time	In- company training	Traineeship voluntary work	Other, missing data
<i>Fachhochschule</i> (FH)	40	26	5	7	5	5	12
University (U)	23	25	5	10	7	9	21
Arts and Humanities (FH)	23	30	13	11	0	2	21
Arts and Humanities (U)	20	24	11	10	0	11	25
Mathematics, IT, Sciences (FH)	59	20	1	2	0	5	13
Mathematics, IT, Sciences, Technology (U)	32	29	2	10	1	6	20



The figures show that Bachelor graduates from *Fachhochschulen* are much more likely to have permanent jobs than their university counterparts, who are often employed as trainees and volunteers. The figures also show the difficulties faced by graduates from the Arts and Humanities to find permanent and full-time employment, particularly when compared with graduates from the STEM subjects.

One year after graduation Bachelor graduates from *Fachhochschulen* are more likely to be employed in management positions (18 per cent) than their counterparts from universities (10 per cent), which at least partly explains the differences in pay levels between the two groups (see next section). *Fachhochschule* graduates are also more likely to be employed in areas that correspond with their study subject. More Bachelor graduates from universities (12 per cent) are employed in non-graduate positions than *Fachhochschule* graduates (7 per cent).<sup>8</sup> Again, there are substantive differences according to subject groups (Stifterverband 2011: 77, 147).

For the Stifterverband study of 2010, the career prospects of Bachelor graduates were investigated in interviews with human resource managers from 36 enterprises. According to these interviews, the type of academic degree employees hold has little to do with their career opportunities within the company. Much more important than the type of degree is their identification with the aims of the company, motivation and communication skills (Stifterverband 2011). The survey of over 2000 companies conducted by the Association of German Chambers of Industry and Commerce resulted in similar findings (Pankow 2008: 5).<sup>9</sup> However, in the same study employers cite the lack of appropriate subject-specific and technical qualification as the most important factor for the failure to recruit graduates for open positions (Pankow 2008: 8).

For almost all the interviewees of the 2010 Stifterverband study, a Master's degree is not a necessary condition for achieving a management role in the company; this is in clear contrast with the study decisions and the underlying rationales of

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<sup>8</sup> Results from a study published by the Federal Employment Agency (BfA) are not fully consistent with these figures, which can partly be explained by a different definition of what constitutes a graduate job. According to the BfA study, 28 per cent of employees who graduated with a Bachelor degree from a university were employed 'inadequately', which means their positions either do not usually require a degree level qualification or their work does not correspond substantially with what they learned during their studies. The corresponding figure for *Fachhochschule* graduates was 19 per cent (BfA 2012: 33).

<sup>9</sup> Again, figures quoted by the employer association BDA paint a slightly diverging picture in this respect, as according to these figures 31 per cent of companies regard a Master's degree as a relevant criterion for recruiting employees for management positions (Dettleff 2011a).

students (see previous section). When asked whether they would recommend Bachelor graduates to follow up their degree with a Master's degree, only seven of 36 interviewees answered affirmatively.

### ***Income of graduates***

Salary levels of Bachelor graduates who enter full time employment are lower than those for graduates from traditional degree programmes. In 2009 Bachelor graduates from *Fachhochschulen* earned 10 per cent less than their counterparts with traditional degrees; Bachelor graduates from universities earned as much as 26 per cent less than graduates from traditional degree programmes (Rehn *et al.* 2011: 327). This might reflect the shorter duration of study for Bachelor graduates and also, linked to this, the fact that graduates from traditional programmes are more likely to have work experience than their counterparts with Bachelor degrees.

However, when employers are asked about the salary levels of graduates with different types of degrees, over two-thirds of them argue that there are no significant differences at the point of entry, and 87 per cent of employers report that Bachelor and Diploma graduates reach the same salary level after three to five years of employment (Stifterverband 2011: 103,110).

While graduates with traditional university degrees who enter full-time employment earn slightly more on average (€36,750 per annum, before tax) than graduates with traditional *Fachhochschule* degrees (€36,450 per annum), the comparison between the two types of higher education institutions is reversed for Bachelor degrees (university: €27,100 per annum, *Fachhochschule*: €32,700 per annum)<sup>10</sup> (Rehn *et al.* 2011: 320ff.). This reversal of the traditional pay patterns for graduates from the two types of institutions might be one of the reasons for a high proportion of university Bachelor students to continue their studies in a Master's programme. It should also be mentioned that many higher paid positions in the public sector are not accessible with Bachelor degrees but rather require a Master's degree.

There are sector specific differences in the development of salary levels over time. For instance, one in three engineers with a Bachelor degree is paid over €50,000 per annum after three to five years of employment. The same figure for graduates with

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<sup>10</sup> Income figures quoted by the BDA are very similar in this respect (Dettleff 2011a).

a degree in business studies or economics is only 23 per cent (Stifterverband 2010: 110).

### ***Employers' evaluation of Bachelor and Master's degrees***

When employers are asked whether their expectations regarding their recruits from the new Bachelor degrees have been fulfilled, two-thirds give positive answers. For Master's graduates this proportion rises to 70 per cent. The degree of satisfaction increases with the size of the enterprise and the proportion of graduate employees. The overall satisfaction with Bachelor and Master's graduates follows similar patterns in both the DIHK study of 2007 (Pankow 2008: 10-14) and the study conducted by the Stifterverband (2011: 89-98) in 2010.

When employers were asked about areas of weaknesses of Bachelor degrees and the need for improvement of programmes, the most frequently mentioned aspects are the applicability of knowledge acquired and the lack of time for sustained engagement with work practice in Bachelor programmes. These deficits are perceived as being less severe for graduates from *Fachhochschulen*, which might be a main reason for the on average higher starting salaries for them. This perception is mirrored in the views of graduates from universities and *Fachhochschulen* respectively (Rehn *et al.* 2011: IV). Also, employers single out graduates from dual study programmes as being more able than their counterparts from conventionally organised programmes to apply their knowledge in company contexts. This feeds into the overall higher levels of satisfaction of employers with graduates from dual study programmes (Stifterverband 2011: 92).

While these findings are broadly similar for the studies conducted by the Stifterverband (2011) and the DIHK (Pankow 2008) the latter study also identified dissatisfaction of employers with the levels of specific and technical knowledge of Bachelor graduates. The study regards the problems in the design of the new programmes as the main reason for this and criticises higher education institutions that have simply split up longer traditional degrees into shorter Bachelor and Master's degrees. In these cases technical knowledge becomes fragmented and the overall coherence of a degree is distorted. Also, the study argues that employers need to adjust their expectations of Bachelor graduates as it is unrealistic to expect them to develop a broad overview of their subject and specialised knowledge in a number of specific areas within three years of study. Meaningful and practice-relevant

specialisation can often only be achieved at the Master's level (Pankow 2008: 11). In the 2010 Stifterverband study nearly half of the surveyed companies indicated that they are willing to support part-time Master's studies of employees by providing time off for study purposes and by contributing to the course fees (Stifterverband 2011: 87).

Regarding the organisation and design of the new degree programmes, employers complain about an over-emphasis on strict structures in study programmes and over-reliance on ECTS as a means to develop degrees. Also, it is acknowledged that Bologna has led to increases in the number of exams at many universities and restricted opportunities for students to choose courses according to their own interests. 'Over-regulation' is an important catch-phrase in this context (Oetker 2009, Sattelberger 2009). As a result students often do not have the opportunity to engage in company-based practical learning phases or study abroad programmes; two experiences employers value (Pankow 2008: 11-13, Stifterverband 2011: 96-97). The perception of over-regulated study programmes, particularly at Bachelor level, is mirrored in the views of graduates (Rehn *et al.* 2011: IV).

## **Conclusions**

Many of the reforms that took place during the 2000s can be traced back to earlier attempts to improve the conditions of researching, teaching and studying in German higher education. For example, in a document published by the German Research Council in 1993 proposals were put forward for:

- the introduction of a two-cycle study structure;
- more emphasis on internal and external evaluation to measure the quality of research and teaching provision;
- an increase in the autonomy of higher education institutions with regard to student admissions and resource allocation;
- the strengthening of the position of deans and rectors in higher education management (Wissenschaftsrat 1993).

As it turned out, all of these proposals were only taken forward in a substantive way after the Sorbonne and Bologna Declarations were signed. It can be argued, therefore, that the ministerial agreements at European level acted as a catalyst for changes that had been discussed well before policy-makers took the higher education agenda to the trans-national stage.

With regard to the long-standing criticism of higher education from employers that graduates are studying with insufficient reference to the needs of the world of work it is not as yet clear whether the Bologna reforms have brought about significant change. Lack of ‘practical’ knowledge and skills is still the main reason why some graduates are not taken on as permanent employees after an initial probationary period. Employers are, on the whole, supportive of the Bachelor programmes at *Fachhochschulen* and *Berufsakademien* and, as becomes clear when looking at the salary data of newly employed graduates, are willing to reward relevant skills and knowledge (Pankow 2008).

Employers indicate a high level of preparedness for collaboration with higher education institutions (Pankow 2008) and seem to be particularly interested in being involved in the design and running of dual study programmes (AusbildungPlus 2011). In this context employers strongly argue for an increase in and an expansion of dual study programmes beyond the *Berufsakademien* as traditional providers of such programmes. They contend that such programmes also offer opportunities for better collaboration between the employment sector and universities and *Fachhochschulen* at the institutional level. Also, employers argue for more flexible study structures, allowing part-time study at both Master’s and Bachelor level. However, employers also recognise the need to provide more placements for students and to adjust in-company training to the needs of employees who have graduated with the new types of degrees (Pankow 2008).

It can be concluded that dual study programmes are one of the success stories made possible by the Bologna process. The high number of places in such programmes advertised by higher education institutions and employers (Scholz and Buchheit 2010) is an indication of the growing importance of this type of study.

However, the answer to the question as to whether Bachelor degrees are enabling graduates to transition successfully into the labour market is far less positive. The data available show particular difficulties for Bachelor graduates from universities: when compared with graduates from *Fachhochschulen* they are less likely to find permanent positions and to reach management positions within the first year of employment. As a result of this, their pay levels are comparatively low. As this, in many ways, substantially changes pre-Bologna patterns it can be argued that the introduction of Bologna style degrees has reshaped the traditional patterns of labour market access for graduates in Germany.

As for the duration and success rates of higher education studies, there are indications that the introduction of Bachelor and Master's degrees has contributed to a decrease in drop-out rates (Heublein *et al.* 2008, 2010). Due to the shorter time students take to complete their first degree Bachelor students are on average significantly younger when they graduate: compared with graduates from traditional degree types, Bachelor graduates are 3.2 (universities) and 1.7 (*Fachhochschulen*) years younger (Dettleff 2011a). Therefore, it can be argued that the Bologna process seems to have addressed the long standing criticisms levelled at higher education by employers with regard to there being too few graduates, and that graduates were too old when they completed their studies. However, it needs to be re-iterated that the majority of Bachelor graduates continue their studies at Master's level.<sup>11</sup> Overall, most employers regard the introduction of Bachelor and Master's degrees into the labour market as successful (Dettleff 2011b).

In conclusion, it can be argued that the Bologna process has changed the patterns of transition of higher education graduates into the labour market to some extent and that it has addressed some of the long-standing demands of employers. The process has also changed the basis for competition between different types of higher education providers, with *Fachhochschulen* and *Berufsakademien* finding themselves in a more favourable position. Employers seem to reward the more practice-relevant education offered by these providers. It can be expected that the signals that this sends to the higher education market will have an impact on the decisions students make regarding the higher education institution they choose for their studies.

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<sup>11</sup> Master's graduates are on average 0.4 (universities) and 3.4 (*Fachhochschulen*) years older than graduates from and traditional degrees (Dettleff 2011a).

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