German Institute
for Economic Research
(DIW Berlin)
Koenigin-Luise-Str. 5
14195 Deutschland
customerservice@diw.de

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Demographic Change Necessitates Educational Reform and Lifelong Learning

Karl Brenke and Klaus F. Zimmermann

Even though the share of workers retiring prematurely is growing, the average age of the labor force is rising because the younger age groups are contracting and the length of time they spend in education is increasing. And yet the German higher education system is relatively unproductive. While the propensity to study at the college level has increased, for demographic reasons the number of German students studying in Germany is no higher than it was ten years ago. By contrast, the share of foreign students studying in Germany has doubled over the last decade, and more German students are studying abroad.

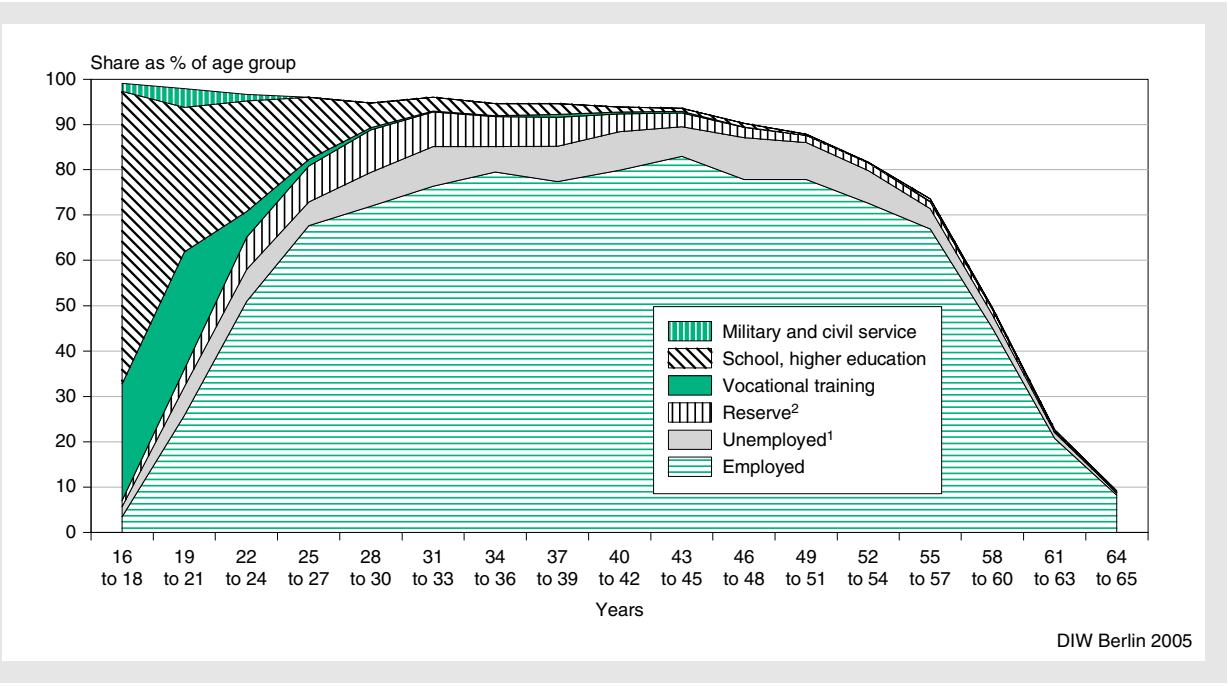
The labor force potential of young people must be better exploited in the future in the sense that they should leave the education system earlier and with improved qualifications. In addition, the process of globalization demands that German universities open their doors even wider to foreign students: first, in the interests of exporting education and, second, as a means to attract highly qualified graduates to Germany. The speed with which knowledge changes, together with the need – and the possibility – to increasingly extend the working life of older workers, necessitates a broader provision of advanced training, within universities as well. There is certainly some degree of willingness to participate in ongoing training among the members of Germany's labor force, but there is also considerable scope for expansion in this regard. However, willingness to engage in continuing education is more prevalent among the younger than the older labor force. Only when the vocational prospects of older workers change will the members of this group show a greater interest in pursuing advanced training and continuing education.

Middle age groups dominate working life

The bulk of the German labor force is concentrated in the middle age groups (cf. figure 1). In the lower age groups, the majority of the population is in educational or vocational training. Labor force participation is decreasing among the older age groups, and in fact very substantially beginning

Figure 1

Labor Force Participation by Age in Germany, 2003



1 Non-employed who are available for immediate employment. — 2 Non-employed who are not available for immediate employment but will be available at a later date.
Sources: SOEP; DIW Berlin calculations.

with the group aged 55 to 57. Only a very small minority of people aged 61 and older are still employed. Practically no one in the older age groups is unemployed in the sense of not being actively employed and at the same time being available to the labor market. In actual fact, therefore, early retirement is taking place on a massive scale in Germany. Very few workers wait until 65, the statutory retirement age, to retire. Yet Germany is not the only country with low labor force participation rates for the older population. The rate is lower in Belgium, for example, and also in Italy and Austria (cf. figure 2). It is much higher, by contrast, in the large industrialized countries Japan and the USA, and in Scandinavia's welfare states. Altogether, the activity rate of Germany's older labor force is ten percentage points lower than the average for all OECD countries.

The age structure of the labor force has shifted significantly in favor of the middle age groups since the beginning of the 1990s. Thus, the share of older persons – which was low to begin with – decreased still further (cf. figure 3), while the share of young adults (aged 22 to 33) also declined. The latter decline was based, on the one hand, on an absolute reduction in the size of this group, not least as a consequence of the drop in German birthrates beginning in the late 1960s with the advent of the contraceptive pill. On the other hand, educational participation increased in these age groups; a growing share is attending a school or university and is therefore not working (cf. table 1).

At the same time, however, the number of persons of working age in the youngest age group (16 to 21) has risen. The growth is mainly the result of a special development in eastern Germany. The former German Democratic Republic reacted to the contraception-induced fall in the birthrate with a pro-natal policy and achieved a temporary rise in the birthrate by offering financial and other incentives. The results of this policy are visible today in the larger young age groups, which represent years with high birthrates. This phenomenon applies to Germany as a whole because many eastern German youth have now migrated to the western part of the country in response to the lack of jobs and trainee positions at home. Although educational participation rates have also increased among young people, this group still accounts for a larger share of the working population than previously (cf. figure 3).

Among the younger population (aged 15 to 29), the number of students attending schools or colleges actually increased by almost one million persons between 1991 and 2003; by contrast, the number of employed persons in this age group fell by 3.7 million. The decline would have been even stronger if an increasing number of students had not worked part time alongside their education. But youth unemployment has also risen.

German higher education lagging behind

The trend toward more advanced and consequently lengthened education can be observed both worldwide and in Germany ever since industrialization. But Germany's education figures – especially in the higher education sector – are quite weak and worryingly low. This is shown, for example, by OECD data on university education, which demonstrate that the share of people aged 25 to 34 with a university degree in Germany is significantly below the average for the OECD countries; there is hardly any other developed country with a share as low as Germany's (cf. table 2).

The share of students qualifying for entry to a university or an advanced technical college has increased in recent years, and the share of those who actually enroll in higher education has also risen (cf. figure 4).

Nevertheless, because these age groups are contracting, the number of German students studying in Germany has not increased over the past ten years. By contrast, the number of German students studying abroad rose from 33 000 in 1991 to 51 000 ten years later. However, this still amounts to just barely 3% of all German students.

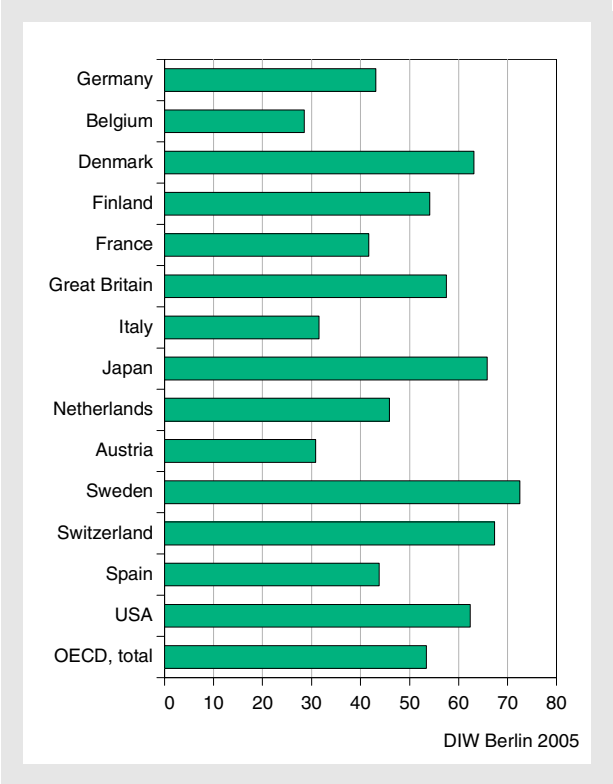
The number of foreign students in Germany has grown considerably. This group now accounts for a tenth of all students, which is twice the rate at the beginning of the 1990s (cf. figure 5). However, the very large majority (80%) of this group immigrated to Germany specifically in order to study. Foreigners born in Germany or who immigrated for other reasons account for only a small share of the students with non-German citizenship.

Students in Germany begin their academic training relatively late compared with students in other coun-

Figure 2

Activity Rates of the 55 to 64 Age Group in Selected Countries, 2003

(%)



Source: OECD.

Table 1

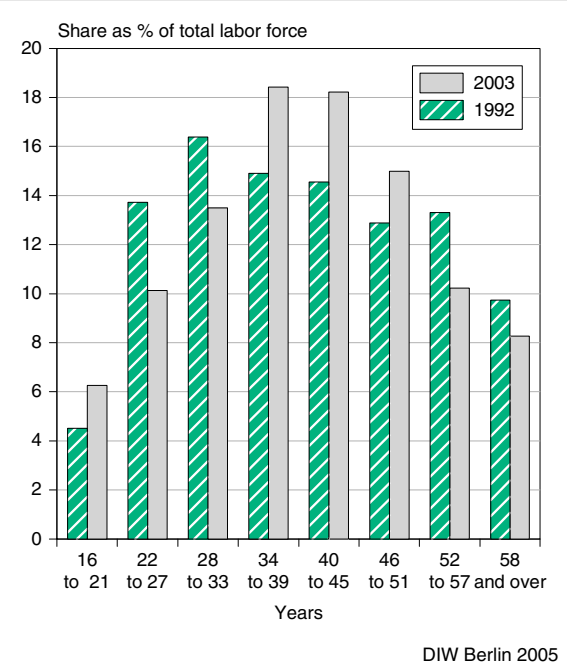
Young People and Young Adults by Employment Status, 1991 and 2003

	Years of age			
	15 to 19	20 to 24	24 to 29	15 to 29
	1991			
Students	2 665	1 139	649	4 453
of which: employed	135	159	158	452
non-employed	2 530	980	491	4 001
Employed[1]	1 508	4 181	4 929	10 618
Unemployed[2]	84	219	277	580
Other non-employed	55	426	804	1 285
Total	4 312	5 965	6 659	16 936
	2003			
Students	3 362	1 341	694	5 397
of which: employed	209	317	274	800
non-employed	3 153	1 024	420	4 597
Employed[1]	1 057	2 612	2 889	6 558
Unemployed[2]	132	404	370	905
Other non-employed	113	353	455	922
Total	4 664	4 710	4 408	13 782
	Change (%) 2003 vs. 1991			
Students	–21	–15	–6	–17
of which: employed	–35	–50	–42	–44
non-employed	–20	–4	17	–13
Employed[1]	43	60	71	62
Unemployed[2]	–36	–46	–25	–36
Other non-employed	–51	21	77	39
Total	–8	27	51	23

1 Not including students at schools and colleges. — 2 ILO concept.
Sources: Federal Statistical Office (micro-census); DIW Berlin calculations.

Figure 3

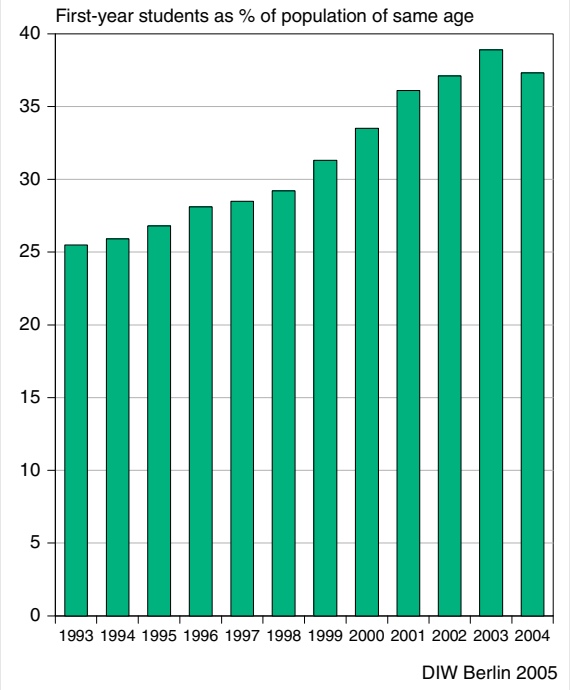
Age Structure of Labor Force[1] in Western Germany



1 Employed and unemployed (non-unemployed who are available for immediate employment).
Sources: SOEP; DIW Berlin calculations.

Figure 4

First-year Student Rates, 1993 to 2004



Source: Federal Statistical Office.

tries. Apart from in Scandinavia, the age of entry into higher education is usually lower in other countries than in Germany, which means that German students are also relatively old when they graduate.[1] The dropout rate is around 30%. This may correspond to the international average – notwithstanding some public rhetoric to the contrary[2] – but given that it amounts to a bad investment in expensive academic training, efforts should be made to achieve a lower rate, for example one similar to Great Britain's dropout rate of 17% (cf. table 2).

Demographic trend necessitates educational reform

All the available population forecasts indicate that the number of people of working age can be expected to diminish, as can the number of children and young people. This applies in particular to eastern Germany, where the birthrate plummeted following reunification and where the number of young people will consequently soon begin to decline rapidly. The older age group, by contrast, is expanding throughout Germany.[3]

These trends necessitate adjustments in the education system. The primary aim must be to better exploit the labor force potential of young people so that, even if their number is diminishing, they can still make a larger relative contribution to macroeconomic value added. This goal can only be achieved if the transition from education and training to working life takes place earlier than has been the case to date. Moreover, education must be further internationalized, which means further

[1] Cf. OECD: 'Education at a Glance 2004'. Paris 2004, p. 442.

[2] The extremely low dropout rates boasted by elite universities in the USA cannot be compared with the overall rates for Germany. Overall, the U.S. system actually has higher dropout rates than the German system.

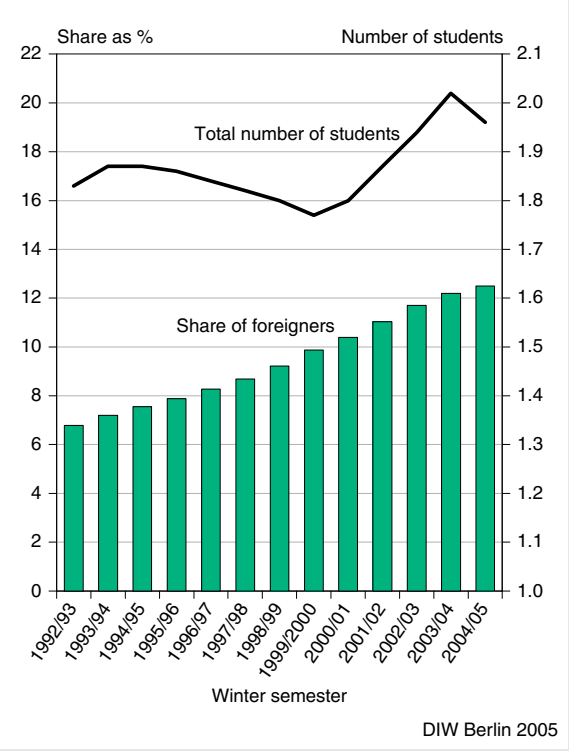
[3] Cf. Erika Schulz: 'Population Dynamics in East and West Germany – Projection to 2050.' In: *DIW Berlin Economic Bulletin,* vol. 41, no. 10, October 2004; Federal Statistical Office (eds.): 'Bevölkerung Deutschlands bis 2050'. 10. Koordinierte Bevölkerungsvorausberechnung, Wiesbaden 2003; Klaus F. Zimmermann, Thomas Bauer, Holger Bonin, René Fahr, and Holger Hinte: 'Arbeitskräftebedarf bei hoher Arbeitslosigkeit. Ein ökonomisches Zuwanderungskonzept für Deutschland.' Berlin 2001; Matthias Herfurth, Martin Kohli, and Klaus F. Zimmermann (eds.): 'Arbeit in einer alternden Gesellschaft. Problembereiche und Entwicklungstendenzen der Erwerbssituation Älterer.' Leverkusen 2003.

increasing the inflow of foreign students by adapting learning content and training styles to international requirements. As a high-wage country and in view of the demographic contraction, Germany cannot compromise on the quality of its education and training and must pave the way for the immigration of highly qualified individuals by training gifted foreign students. If the level of education is not raised by means of constant growth in the number of young people completing academic training, then Germany risks a reduction in its international competitiveness.

The efficiency of educational and vocational training must be improved in such a way that the duration of the education or training period can be reduced. However, there are limits on the amount of reduction possible, for the students must also be able to process the learning content. Thus, an examination of whether some of the learning content provided to date is really an essential element of initial vocational training – be it under the dual system or in tertiary education – is required.[4] The structures of the German education system have changed very little for decades, although some learning content has been adapted to the state of knowledge and there have been curricular innovations. It will be crucial in future that the provision of knowledge be tailored to the needs of Germany's human capital resources, which are becoming increasingly scarce. As with all dwindling resources, these must now be handled with more care than in the past.

However, the above arguments must not be interpreted as a plea for more specialized training. On the contrary, the importance of general education and key skills (such as team spirit, communication skills, and reliability) is growing, and these factors should therefore be given more importance. The reality of working life changes so rapidly nowadays that highly specialized knowledge is rarely of long-term relevance. Instead, training in specialized skills should be restricted to what is required for entry into working life. Advanced skills

Figure 5
Students in Germany, 1992/93 to 2004/05



Source: Federal Statistical Office.

Table 2
Higher Education Indicators in Selected OECD Countries

	University graduates as share of 25 to 34 year-olds	Dropout rate[1]	Average enrollment age of youngest 50% of students
	2002	2000	2002
Germany	13	30	21.4
Belgium	18	40	18.9
Finland	21	25	21.6
France	19	41	18.9
Great Britain	23	17	19.4
Italy	12	58	20.8
Japan	25	6	n.a.
Canada	26	n.a.	n.a.
Korea	26	21	n.a.
Netherlands	25	31	19.9
Austria	7	41	20.4
Sweden	22	52	22.7
Switzerland	17	n.a.	21.8
Spain	25	23	19.3
USA	31	34	21.0
OECD average	19	30	n.a.

1 Calculated as % difference between first-year students and graduates in a comparable entry year.
Source: OECD.

[4] For details cf. Hans Weiler, Norbert Bensel, Katharina Heuer, C. Katharina Spiess, and Gert G. Wagner: 'Hochschulpolitik als Arbeitsmarktpolitik: Vorschläge zu einer beschäftigungsorientierten Hochschul- und Studienreform.' In: Norbert Bensel, Hans Weiler, and Gert G. Wagner (eds.): 'Hochschulen, Studienreform und Arbeitsmärkte – Voraussetzungen erfolgreicher Beschäftigungs- und Hochschulpolitik'. Gütersloh 2003, pp. 33-71.

Table 3

Everyday Continuing Education of Active Population and Expectations Regarding Future Participation in Vocational Training

Figures as % of relevant group

	Everyday training and continuing education	Probability of participation in program/course within the next two years		
		Not very probable[1]	Quite probable[2]	Very probable[3]
16 to 21	20	44	33	23
22 to 27	26	41	41	18
28 to 33	23	46	35	19
34 to 39	19	55	33	12
40 to 45	21	59	28	12
46 to 51	23	64	25	11
52 to 57	22	73	18	8
58 years and older	18	88	9	4
Full-time workers	22	58	29	13
Part-time and marginal workers	20	63	26	11
Unskilled workers	9	73	20	7
Skilled workers, qualified clerks, and civil servants	20	57	30	13
Highly qualified employees	38	44	38	18
Self-employed and family workers	21	59	25	16
Germans	22	58	29	13
Foreigners	13	74	20	6
Total	21	59	28	13

1 Probability of 0% to 40%. — 2 Probability of 50% to 80%. — 3 Probability of 90% or 100%.
Sources: SOEP; DIW Berlin calculations.

could then be acquired by means of the learning-by-doing route and, in particular, by means of increased opportunities for continuing training during working life. Given that occupational requirements are changing rapidly, more focused initial vocational training followed by broader opportunities for continuing education and training would reduce the risk of malinvestment in human capital.

Need for substantial expansion of ongoing training

The further training sector is not well developed in Germany – apart from further training provisions for the unemployed and for those at risk of unemployment, which are often measures aimed at adjusting the skills of workers to labor market needs. In the future, however, it will become increasingly important to respond rapidly when changes in the occupational requirements made of workers begin to be perceived.

How willing are today's workers to participate in further training? Some indicators regarding the current willingness of labor force members to undergo further training will be provided here based on evaluations of the Socio-Economic Panel Survey (SOEP), which is carried out by DIW Berlin in collaboration with the Infratest Social Research Institute. One of the items in this survey asks whether the respondents normally educate themselves or study as part of their daily life, whether at home or outside the home.[5] According to the SOEP, only a fifth of the active labor force aged up to 65 engages in continuing education (cf. table 3),[6] and the share among the unemployed is even lower (cf. table 4). One of the reasons for the latter difference is the fact that the unemployed are generally less qualified than the employed – more highly qualified individuals are usually more open to continuing education. Thus, among the active labor force, it is the highly qualified, in particular, who generally engage in continuing education as part of daily life. The difference in the education behavior of Germans

[5] It is not possible, however, to ascertain whether the activities concerned constitute vocational training or general education.

[6] Students at school or college who work part time were excluded from the analysis because, given that schoolwork or study represent their primary activity, their inclusion would have skewed the results.

Table 4

Everyday Continuing Education of Unemployed and Hidden Reserve and Expectations Regarding Future Participation in Vocational Training

Figures as % of relevant group

	Everyday training and continuing education	Probability of participation in program/course within the next two years		
		Not very probable[1]	Quite probable[2]	Very probable[3]
16 to 21	22	39	43	18
22 to 27	13	41	47	12
28 to 33	13	56	33	11
34 to 39	17	49	36	15
40 to 45	10	50	39	11
46 to 51	11	63	30	8
52 to 57	7	78	19	3
58 years and older	17	74	21	5
Germans	14	52	36	12
Foreigners	6	70	27	4
Total	14	53	35	11

1 Probability of 0% to 40%. — 2 Probability of 50% to 80%. — 3 Probability of 90% or 100%.
Sources: SOEP; DIW Berlin calculations.

and foreigners can likewise be explained on the basis of the respondents' prior qualifications, because Germans are generally more highly qualified.

By contrast, there is very little variation across the different age groups, at least with regard to educational behavior in everyday life. However, older people tend to consider general education more important, while younger people are more interested in the kind of education that can be directly applied in an occupational context. This difference is indicated by the respondents' willingness to participate in a vocational training program or course within the next two years. More young people than old people – both among the employed and the unemployed – responded that they probably would do so. Another result to emerge is that people employed in a demanding job are on average more willing to participate in further vocational training, while such willingness tends to be rare among workers in undemanding jobs. Nonetheless, at only one fifth, the share of highly qualified workers who believe it very likely that they will participate in a vocational training measure in the foreseeable future is not exactly large.

Conclusions

As a high-wage country, Germany's only hope is to successfully expand and deploy its human capital, which will become an even more important factor for economic growth in the future. This means placing the human being at the center of attention – without wishing to undo the laws of the market economy. It has only been possible to delay the aging of the labor force in Germany over the last decade through the implementation of early retirement programs. Yet in view of the already substantial burdens on the pension insurance system and the steady rise in longevity, the strategy of early retirement has long demonstrated itself to be a failure. This approach must be consistently phased down, for the declining birthrate and the growing need for training are ultimately progressively reducing the availability of well-qualified young workers.

Policy makers, industry, and society in general must counteract this trend. What is required is to shorten the duration of university education and vocational training programs and at the same time to improve the quality of education and training. Germany must continue to enhance its international competitiveness as a location for training and education in enterprises and universities. This strategy also implies that the best foreign students must be acquired for the German labor market. The main task, however, will be to constantly adapt Germany's aging human capital to modern requirements by means of a resolute upgrading of the further training sector.

However, rapid development of the further training sector as a viable sector for the future will also depend on expanding demand for lifelong training, which will

therefore require greater insight into the need for lifelong training among workers and in enterprises, in particular, as well as more intense efforts on the part of policymakers. In the face of a loss in the number of young workers induced by the demographic trend, this is the only way that Germany's largest labor force reserve – older workers – can be successfully retained on the labor market for as long as possible.

And this is why Germany's universities should also systematically open their doors to further training initiatives. Although not every university must necessarily offer further training programs, the overall share doing so should be larger than today. In addition, the collective bargaining parties could make better use of the scope for further training activities than to date; they have appropriate instruments at their disposal, such as collective contracts for further training or the use of working-time accounts for advanced training. Qualification plans are one of the options available at enterprise level. General incentives to partake in individual further training activities should be created for workers aged 45 and over.