

# Dual higher education study or advanced training – what increases the chances of career advancement?

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**Although the number of graduates with a bachelor's degree has risen over recent years, little information is available as to which position such persons assume within a firm and especially with regard to whether they vie for company advancement with those in possession of the formally equivalent qualifications of master craftsman, technician or certified senior clerk. This article presents the results of a company survey, which uses a choice experiment to identify possible competition for appointment to project management positions between persons who have completed advanced training and bachelor's programmes graduates (dual course of study).**

## Equivalent, but not the same

The effects of the Bologna Reform on the German labour market have been discussed in academic research circles since the process was instigated in 1999 (cf. e.g. WÜNSCHE et al. 2011, FLAKE/ZIBROWIUS 2017). According to the German Qualification Framework (DQR), the purpose of both bachelor's degrees and advanced training programmes (such as master craftsman, technician or business management specialist) is to deliver competencies "for the planning, processing and evaluation of comprehensive technical tasks and problems". In addition, persons holding such qualifications should be able to "assume responsibility when working within expert teams or demonstrate responsibility in leading groups or organisations".<sup>1</sup>

This makes it clear that employees with bachelor's degrees and advanced training may well compete with one another within the company hierarchy to secure senior skilled worker positions or junior or middle management jobs. Although more recent empirical studies (cf. FLAKE/ZIBROWIUS 2017) show that neither persons who have completed advanced training nor those with academic qualifications can be systematically adjudged to be in possession of higher competencies, both these educational pathways provide the necessary training to take on project management roles. Nevertheless, there are very few findings relating to the preferences of company decision makers when persons with these different types of qualifications compete for a job appointment. Such information is, however, of relevance to young adults who are making career choices and aspiring to company advancement.

This article presents the results of an experimental company survey conducted within the scope of the research pro-

ject "Do bachelor's degrees compete with vocational and advanced vocational qualifications? An analysis of company preferences".<sup>2</sup> The survey simulates a company staffing process in which one of three applicants must be selected for a project management position.

## The signal function of educational qualifications

From a theoretical point of view, a company staffing appointment may be interpreted as a rational choice or as a decision, which maximises benefits. Companies select applicants whose characteristics they believe will deliver the highest degree of productivity. Educational certificates serve as an important signal for this productivity (cf. SPENCE 1973). The extent to which companies are familiar with the skills and abilities which are learned and certified during a certain programme of training or study is of particular relevance within this context. The standardisation and the level of awareness enjoyed by an educational certificate may serve as a key indicator of how familiar and informed companies are. The degree to which training is practice-related can also play a part.

Advanced training programmes are governed in a nationally standardised way pursuant to § 53 of the Berufsbildungsgesetz (BBiG) [Vocational Training Act]/§ 42 of the Handwerksordnung (HwO) [Crafts and Trades Regulation Code]. This is not the case in respect of advanced training regulations promulgated in accordance with § 54

<sup>1</sup> Source: [www.dqr.de/content\\_en/2336.php](http://www.dqr.de/content_en/2336.php) (retrieved: 24.01.2019)

<sup>2</sup> For more detailed information on the research project, visit [www2.bibb.de/bibbtools/de/ssl/dapro.php?proj=2.1.313](http://www2.bibb.de/bibbtools/de/ssl/dapro.php?proj=2.1.313) (retrieved: 24.01.2019).

### The Reference Company System

The Reference Company System comprises an Access Panel, i.e. a stable pool of companies, which have declared their willingness to be available for BIBB surveys. This permits rapid and reliable analyses to be conducted on current topics. Around 1,400 companies are currently surveyed once or twice a year on the latest issues affecting company-based VET. The present investigation represents the fortieth occasion on which the companies have been surveyed within the framework of the Reference Company System.

Detailed information is provided at: [www.bibb.de/de/12471.php](http://www.bibb.de/de/12471.php) (retrieved: 24.01.2019)

BBiG/§ 42 a HwO, responsibility for which has been transferred to the competent bodies. Notwithstanding this, such qualifications also have a long tradition and are widely disseminated and known about. Persons who undergo advanced training will also have acquired well-founded practical experience during the process itself.

Universities of applied sciences and institutes of higher education are largely left to their own devices when it comes to the structuring of courses. This means that the level of standardisation of these qualifications is lower. Dual courses of higher education study constitute a distinctive aspect in this context. *Training-integrated programmes of study* provide a curricular combination of nationally standardised training courses governed by the BBiG/HwO and higher education study. This makes them comparable across Germany. *Practice-integrated programmes of study*, on the other hand, merely require students to complete longer practical placements at companies. These practical phases are credited as academic achievements (cf. Wissenschaftsrat [German Council of Science and Humanities] 2013, pp. 9 ff.). The idea is that graduates of these types of programme should have experienced similar proximity to practice to that provided during the qualification route of a person pursuing advanced training.

For young adults who wish to train in a practice-related way, it is of great interest to know which of the three training pathways (VET followed by advanced training, a training-integrated bachelor's degree or a practice-integrated course of study) offer them better opportunities for career advancement.

For this reason, the company survey focuses on the signal effect of the three education and training qualifications whilst considering further applicant characteristics. We will concentrate on recruitment to a project manager position since this represents the first rung on the career ladder.

### Structuring of the survey

The company survey was conducted in 2017 using the BIBB Referenz-Betriebs-System (RBS) [Reference Company System] (cf. Information Box). The questionnaire used a choice experiment to simulate the appointment of a project manager to oversee up to three persons. A choice experiment is a form of vignette experiment. It identifies the preferences of respondents by presenting them with descriptions of objects or persons (vignettes), from which they select their preferred option. The attributes of the vignettes are randomly varied according to certain characteristics. This experimental design allows a causal interpretation to be made of the effects of the characteristics on likelihood of selection (cf. AUSPURG/LIEBE 2011).

The decision makers surveyed were presented with a choice of three persons and asked to choose the candidate they believed to be best suited. Each respondent was given three variants of this decision-making situation. They were also given the option of choosing none of the stated candidates in order to avoid forced decisions (cf. ibid.). The Table shows one of 36 possible decision-making situations. As well as having different types of qualification, applicants exhibited four further varying characteristics.<sup>3</sup> The practical part of the training programmes could have taken place

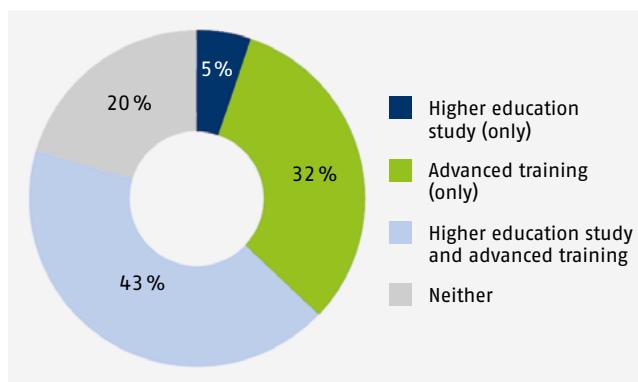
Table

Choice set from the questionnaire (example)

Which of these three people would you prefer for this position based on the characteristics listed?				
Characteristic	1	2	3	
Type of qualification	Advanced training (e.g. master crafts-man, technician)	Bachelor's degree (practice-integrated)	Advanced training (e.g. master crafts-man, technician)	None of these options
Place of training	Own company	External company	Own company	
Final mark	Satisfactory	Very good	Satisfactory	
Occupational experience after end of training	2 years in external	2 years in own	None	
Professional matching	Complete	Partial	Complete	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Source: Own representation

Figure 1  
Companies by training strategy



Source: RBS 40 (2017), valid answers only, n = 270

at the person's own firm or at an *external* company. *Final marks* were stated as being *very good* and *satisfactory* because these grades are known to exert an influence on the recruitment preferences of employers (cf. HUMBURG/VAN DER VELDEN 2015). *Occupational experience after the end of training* is also a criterion that is relevant to staffing choices, particularly in the case of higher education graduates (cf. ENGEL 2010, HUMBURG/VAN DER VELDEN 2015). This is varied qualitatively (*none*, *2 years internally*, *2 years externally*) in order to consider lower induction costs of internal applicants. Finally, a differentiation is made in respect of *professional matching* (*complete/partial match*) because this is also accorded a high degree of significance (cf. ENGEL 2010, HUMBURG/VAN DER VELDEN 2015).

### Training strategy of the RBS companies

Of around 1,350 RBS companies contacted, 278 companies (= 21.1%) participated in the survey. Over half (54%) of the responding companies are based in the "producing and processing industries" while around 20 per cent operate in the area of "business-related services". 38 per cent of these firms have fewer than 20 employees. 25 per cent employ between 20 and 99 individuals, and 37 per cent have more than 100 staff. Almost half of the responding companies provide training via dual higher education study themselves (cf. Figure 1). Around 75 per cent support their staff by paying costs or by allowing time off for advanced training measures. By way of contrast, a fifth of companies did not fund either of the training programmes.

### Applicant characteristics and company training strategies are the crucial factors

Given equal chances of selection, the likelihood that each person will be chosen (cf. example in Table) should be around 33 per cent.<sup>4</sup> We are now interested in which characteristics significantly increase the probability of being selected. For this purpose, we calculate conditional logit models (cf. MCFADDEN 1973) and observe the changes in likelihood of selection compared to a reference category. The reference person has completed advanced training within the surveyed company in a partially matching task area and achieved a mark of "satisfactory" and has not yet gathered any further occupational experience.

Figure 2 (p. 40) presents the number of percentage points by which probability of selection for this reference person changes if he or she has, for example, obtained a different qualification or has acquired more occupational experience. For the purpose of the analysis, we divide the companies in the sample in accordance with their training strategy. Firstly, we consider companies, which only fund advanced training programmes and therefore have no practical experience of dual courses of higher education study (85 companies and 245 decision-making situations, blue bar in Figure 2). The second group encompasses companies, which support both qualification pathways or which offer training solely via the dual route and are thus familiar with dual students (128 companies and 366 decision-making situations, green bar in Figure 2). Finally, we consider companies, which do not finance either of the two training routes (55 companies and 153 decision-making situations, grey bar in Figure 2).

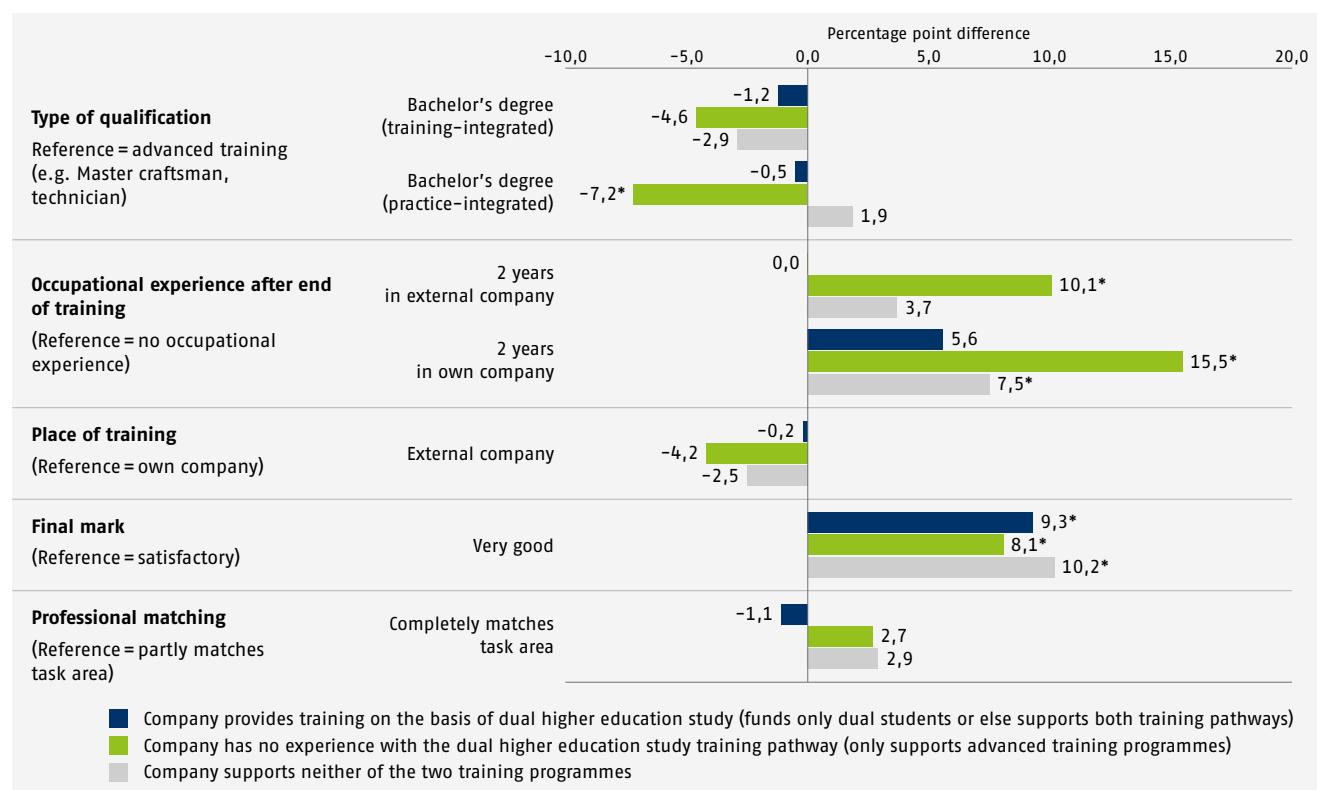
At companies, which only support advanced training programmes, persons with a practice-integrated bachelor's degree are significantly less likely to be selected for a project management position than those who have completed advanced training. The difference is 7.2 percentage points. Occupational experience and the final mark are also shown to exert a strong and significant effect. Companies, which have experience of dual students, are almost equally likely to select applicants from dual courses of study and persons with an advanced training qualification. The effect of occupational experience is much lower here, although the impact of a very good final mark remains at approximately the same level. It is also the case that no difference with regard to type of qualification held by the applicant is shown in the recruitment preference of companies not supporting either qualification pathway. By way of contrast, occupational experience and the final mark play a significant role. The importance of the applicant characteristics were also surveyed directly following the experiment. It was revealed that only two per cent of companies viewed the final mark as "very important" (54% considered this as being

<sup>3</sup> It was decided not to vary soft skills because of their strong significance. The introductory text instead made it clear that interviews had demonstrated that all applicants were in possession of suitable social competencies. The reason for this is to place the emphasis on the formal/professional factors offered by applicants as shown in their curriculum vitae.

<sup>4</sup> All candidates were rejected in five per cent of cases. These cases are excluded from the multivariate analysis.

Figure 2

Effects of applicant characteristics on probability of selection for a project management position



**Sample interpretation:** At a company, which only funds advanced training, the average likelihood that an applicant with a very good final mark will be appointed to the position is 8.1 percentage points higher than the probability that a person with a satisfactory mark will be chosen.

Source: RBS 40 (2017); N\_Bachelor = 1,098 applicants; N\_advanced training = 735 applicants; N\_neither = 459 applicants; marginal changes in likelihood of selection compared to reference value; significant results at a level of 10% are marked by \*. The models take account of interactions between type of qualification with occupational experience and place of training.

“quite important”). Nevertheless, 39 per cent stated that “professionally matching initial/advanced training” was “very important” (55 % considered this to be “quite important”). A greater degree of significance thus appears to be accorded to the final mark in a decision-making situation involving several options than is the case in direct surveys (e.g. ENGEL 2010).

### Differences in scope of duties

As the evaluations subsequently collected show, respondents also associate the various qualifications with different areas of deployment within the company (cf. Figure 3). 77 per cent of companies believe that graduates with bachelor’s degrees have better chances of performing “theoretical and research-based” tasks. 64 per cent also believe that such persons are more suited to “analytical and strategic” activities. Around 60 per cent of the companies are of the view that “practice and application-oriented” tasks are primarily carried out by persons who have completed advanced training. In the case of companies only supporting advanced training, in respect of which a clear prefer-

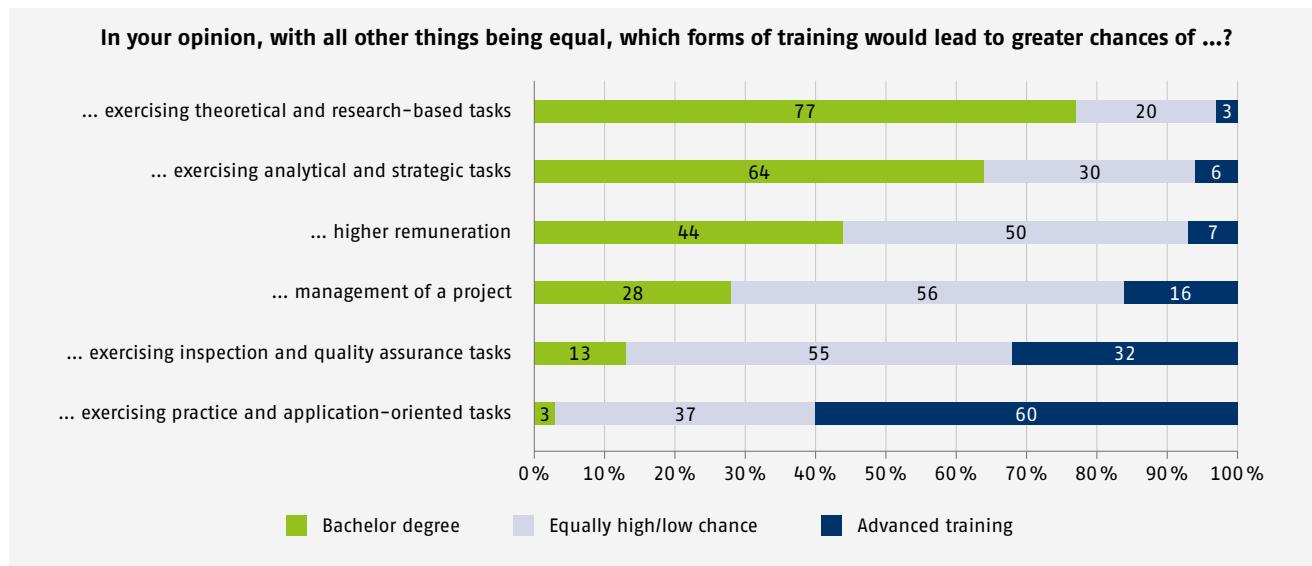
ence for persons who have completed such training is discernible in the survey, this proportion rises to as high as 75 per cent. At around a third of all companies, those with advanced training qualifications are also seen as having better chances of performing “inspection and quality assurance” tasks. Nevertheless, 55 per cent of the companies assess that the chances in this regard are equally high or low for both types of qualification. In the case of project management, more than half of the companies (56%) are unable to determine any advantage for either of the two types of qualification. However, only seven per cent of companies believe that persons with an advanced training qualification can achieve higher remuneration than graduates of bachelor’s degree programmes.

### The competition situation in career advancement

Assuming project responsibility represents the first rung on the company career ladder. The results show that a practice-integrated course of higher education study only exerts a negative effect if persons with academic qualifications apply externally to companies that only fund ad-

Figure 3

Evaluation of the company representatives of areas of deployment according to qualification (in per cent)



vanced training programmes and do not themselves offer training via the dual higher education study route (cf. Figure 2). This company information deficit, which exists because the qualification is less standardised and less well known, can be reduced as applicants gain additional occupational experience. No significant preference for one of the types of qualification can be determined either at companies with experience of dual students or at companies which do not support either of the training programmes. To the extent that a company's training strategy does not explicitly state the aim of funding advanced training programmes, it is thus revealed that there is mutual competition between the qualifications with regard to company advancement. This is also confirmed when a direct enquiry is made of the chances of obtaining a project management position by those in possession of the different qualifications.

The results give rise to the supposition that dual higher education study will represent a serious alternative for young people as opposed to VET followed by advanced training if such dual programmes are expanded and gain greater awareness. Given the fact that chances of advancement are equal at companies, which have knowledge of the training contents, the duration of training of a bachelor's degree programme of study (approximately 3 years) is shorter than VET followed by advanced training.

The experimental design further shows that very good final marks exert a significantly positive effect on likelihood of recruitment compared to professional matching regardless of the training strategy of the company. This may be interpreted as an indication that a higher degree of significance is accorded to the cognitive ability of applicants symbol-

ised by marks than is given to specific professional specialisation traditionally imparted during a programme of advanced training. Further investigation of this would need to take place via experiments in which, for example, task areas and qualifications are more precisely defined. ▶

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