

Training Patterns of German Companies in India, China, Japan and the USA: What Really Works?

Matthias Pilz*

*University of Cologne, Chair of Economics and Business Education, Director of the Center for
Comparative Vocational Education and Training (G.R.E.A.T.)
Herbert-Lewin-Str. 2, 50931 Cologne, Germany*

Received: 15.11.2015; Accepted: 02.03.2016; Published: 24.08.2016

Abstract: The transfer of vocational education and training (VET) systems is currently the subject of lively international debate, but there has so far been very little documentation of the process or analysis of how such transfers are achieved in practical terms. This paper therefore considers the potential for transferring Germany's dual vocational training system to German subsidiaries abroad, specifically in China, India, Japan and the USA. Using the EPRG typology as a theoretical framework, the paper systematises the range of training strategies deployed by German subsidiaries. It analyses the findings of interviews with training officers and Directors of Human Resources in more than 40 German subsidiaries abroad. These interviews show clearly that local factors in the host country exert such a strong influence that it is not possible completely to transfer the German VET system to another country. What is more likely is that an accommodation is reached with local VET structures, local labour market conditions and other socio-cultural features. The findings suggest that policy borrowing in the area of VET is likely to be only partial and will be strongly influenced by the national characteristics of the host country.

Keywords: Company Training, Transfer of VET, Policy Borrowing in VET, China, India, Japan, USA, Germany, Vocational Education and Training

*Corresponding author: matthias.pilz@uni-koeln.de

1 Introduction

Over recent years, the partial or complete transfer of VET systems has become increasingly relevant in international and comparative vocational education and training research (Barabasch and Wolf, 2011; Phillips and Ochs, 2004).

This issue also has an increasingly important international training policy aspect. In the context of high youth unemployment in some industrialised countries on one hand and the widely acknowledged *skills gap* and labour shortage at intermediate skill level on the other, the question arises of which type of training is most appropriate.

Germany's training system is increasingly cited in this context, and over the past year, a number of southern European countries have, for example, concluded formal agreements with Germany on *importing* its dual system of training in an attempt to reduce youth unemployment (BMBF, 2012). Meanwhile, the OECD has recommended that the USA take over aspects of the German system (OECD, 2012).

However, beyond this general debate, the specialist literature pays virtually no attention to the training practices of German companies abroad. While comparative international VET research considers the training systems of selected countries in depth (Rauner and Maclean, 2008; Marhuenda et al., 2015, inter alia) and discusses the possibility of exporting the German dual system in general (Wagner, 2003), it too devotes only peripheral attention to how companies train their foreign workforces. And, finally, there are virtually no reliable empirical data on the transferability of Germany's dual training system to other countries (Schippers, 2009). Stockmann's (2013) meta-study of a series of training *export* projects on behalf of German development cooperation is, in fact, the only research to use recent empirical material and to offer findings relating to the challenges of transfer.¹

2 Research perspective

To tackle this gap in the research, at least partially, the research project described here uses Germany's dual vocational education and training system as a case study to consider the potential for transfer to German companies operating production plants abroad. German companies are wholly familiar with the dual system and operate it at home, so the assumption underpinning the project is that German subsidiaries abroad should be the most likely to implement use of the German system in their own countries. The extent to which German companies operating abroad follow the familiar model of Germany's dual system of vocational training may also indicate whether exporting that system in its entirety to a foreign country is generally likely to succeed. There are virtually no empirical findings in this area (Euler and Wieland, 2015). It is also clear that our research focus was not directly on human resource development (see, for example, Alagaraja, 2013; Poell et al., 2003) but formed part of the area of international research into VET. Our explicit concern was not to look solely at a small number of individual company case studies and analyse their detailed planning (see, for example,

¹For Switzerland one study is available (Maurer et al., 2011).

Schamp and Stamm, 2012) but, rather, to attempt to paint a somewhat broader and more differentiated picture.² This assumption gave rise to the following specific research questions:

- To what extent do German companies operating abroad adhere to the German skills training model?
- More particularly, which structures and processes from initial vocational training in the dual system are transferred to the host country and which host country-specific or international/regional approaches are retained?³
- Which of these approaches can be seen as dominant in a given country?

Against this backdrop, this paper investigates the training practices of German companies in the USA, China, India and Japan, focusing solely and explicitly on initial training and, where appropriate, continuing training for skilled workers at intermediate skill level. These countries were selected because they represent major sites of direct German investment outside Europe⁴ and because we wanted to investigate countries representing a range of cultures and levels of industrial development. China and India are emerging Asian economies with very different cultures (World Bank, 2008) while the USA and Japan were included so that the research also took in a large and long-established industrially-developed economy.

The vocational education and training policy in these countries differs markedly from that in Germany (Busemeyer and Trampusch, 2012), but space constraints mean that we are able to give only the briefest of accounts of them here. Both the state and companies exert a high level of influence on Germany's vocational education and training policy (BIBB, 2012). In India and the USA, both the state and the private sector have less influence (Agrawal, 2012; Government of India, 2012; Busemeyer and Trampusch, 2012; Barabasch and Rauner, 2012), while the Chinese government exerts a high level of influence but companies do not play any significant role (Shi, 2012; Hao, 2012; Venter, 2004). By contrast, there is little public commitment in Japan to the country's vocational education and training system, but employers show a high level of commitment to investment in VET (Dore and Sako, 1998).

3 Theoretical framework

The theoretical approach underpinning this research into the training activities of German companies abroad is the EPRG framework used in international corporate management (Perlmutter and Heenan, 1974; Heenan and Perlmutter, 1979). The approach is

²Against this backdrop, I have also not included individual special cases or flagship projects, such as the training that Volkswagen provides at its Indian plant in Pune, for example.

³Germany's dual training system is, in quantitative terms, by far the largest element of the country's VET system and the area in which training companies are directly involved in initial training. We therefore selected this element of the VET system as our point of reference.

⁴Europe was excluded to eliminate the effects of the single European labour market and the impact of the legislation on mobility and recognition of qualifications.

also a very useful tool in international VET research. The authors use the term to differentiate between the *ethnocentric*, *polycentric*, *regiocentric* and *geocentric* approaches taken by companies (Drumm, 2008, 633).

When a company transfers its concepts and cultural norms from the parent company to a subsidiary abroad because to do so is strategically important for the organisation as a whole, its basic strategy can be said to be an *ethnocentric* one in which employees are trained primarily in the originating country or in line with its models. A company with a *polycentric* orientation in its strategy, by contrast, assumes that the cultural and institutional features in the host country diverge so markedly from those in the originating country that it is advantageous to adapt its corporate activities as closely as possible to that environment and to train its staff in line with the standards applying in that country.

In a company with a *regiocentric* strategy, foreign subsidiaries operate within a relatively homogenous geographical region and have a mutual influence on each other. This means that concepts developed in the parent company can be adapted locally to the institutional features of that region (Heenan and Perlmutter, 1979, 20).

A company with a *geocentric* basic strategy, finally, is described by Perlmutter as a globally oriented company whose objective is to operate a standard approach across both the parent company and its foreign operations. The main characteristic of the HR policy underpinning such a strategy is that employees are appointed to key positions independently of their country of origin (Heenan and Perlmutter, 1979, 21).

The typology outlined here has an international focus and accounts for a wide range of possible influences, making it well suited also to analysing the training activities of German companies operating abroad. However, its use needs to be adapted to the pedagogy of vocational education and training (see below).

4 Empirical approach

The semi-structured exploratory interview methodology was used to inform the research design and to tackle these questions. This kind of expert interview is particularly well suited to a study of this kind in a new area of knowledge where outcomes are difficult to predict.

Because of space constraints, it is not possible to give a detailed methodological account, but central to the study design was the concern to record divergences with the German VET model (Berufskonzept/vocationalism, Ryan, 2003; Gehmlich, 2009) in as structured a way as possible. One key characteristic of Germany's model of vocational education and training is the close collaboration between companies and vocational schools in training locations. Against this backdrop, the vocational school's role in training where it exists in the relevant host country or countries is also taken into consideration, as an interaction system.

However, the main focus of this study is on companies' skills development strategies. The German model of vocational training based on the Berufskonzept. Based on relevant theories of the Berufskonzept (Blossfeld, 1994; Heinz, 1995; Deiinger, 1998;

Clement, 1999; Ryan, 2003; Hellwig, 2008), we have used the following criteria, which were specified into interview questions: cooperation between vocational schools and companies, training content, participants, trainer, cost allocation, certificate, relation between initial VET and continuing training.

The study was conducted between 2011 and 2013 following a pilot study. When selecting companies, we imposed regional restrictions for practical research reasons but also applied specific selection criteria on the basis of the logical assumption that companies had a need for training.

The selection criteria were:

- companies should employ more than around 100 staff.
- That they should have been operating for at least 10 years in the host country.
- That they should be operating within manufacturing industry.
- That a majority of their workers should have an intermediate skills level.

The training experts were interviewed within their company by the interviewer. They included individuals who had a special function on the basis of long experience in a specialised area (Mieg and Näf, 2005; Flick, 2007) and were, therefore, decision-makers in the area of initial and continuing training in the host country (such as heads of HR and training managers). The nationality of these individuals was irrelevant, since our research approach did not include nationality as a limitation. A round of interviews took place in each company, with up to three experts participating in each case. Interviews lasted for 60 to 80 minutes and, by agreement with the interviewees, were recorded digitally and subsequently partially transcribed. All over four researchers were involved in the interviewing; all had been trained to the same standard and cross-checked, and all had skills in the relevant local language as well as German and English.

5 Description of the findings

Below, we present the findings for each country in their national context (Pilz and Alexander, 2011; Pilz, 2016; Barabasch and Rauner, 2011; Yan, 2011). Since it is impossible to portray the country-specific characteristics of the VET system, labour market and society in each country comprehensively, we shall concentrate on the key aspects as determined by the research questions and typology.

5.1 German companies in the USA

The USA study involved ten interviews with representatives of German companies in the north-east of the country. These companies operate in sectors including the automotive industry, chemicals and materials processing.

The companies we surveyed do not operate a training model that is comparable with Germany's initial training system but focus their activities primarily on enabling employees to acquire and update the skills required for specific workplace tasks the conventional

concept of training in the USA (Lerman, 2013). This kind of performance-based skills acquisition illustrates clearly that it is impossible to separate initial VET and continuing training in a US context. Only one company (U3) offers discrete and comprehensive initial and continuing training programmes (see below).

Generally, companies prefer to recruit workers who already have wide-ranging work experience or have at least completed full-time occupational training at a Community College. In this context, it should be borne in mind that virtually all US school-leavers have a high-school qualification and that around three quarters go on to continue their education at college (Zirkle and Martin, 2012). Young adults who do not go to college, or who drop out, often go to Community Colleges, which typically offer two-year training programmes. These programmes include no comprehensive workplace-based learning (Lerman, 2013, 113-119).

The responsibility for providing broader vocational education and training is, therefore, delegated to another provider that is funded either by the state or by the fees charged to participants. Task-specific training is then offered in all companies, though primarily as *on-the-job training* (OJT): So they get OJT, they will get placement at the end of it and they will have a job (Company U4).

The reasons for this model are task specificity and cost, which is regarded as particularly low in this model: It's too expensive, although skilled workers or master craftsmen are dying out and there is a need of it OJT is faster, less expensive (Company U1). In relation to the funding of vocational training, it is striking that external providers do not generally fund broader skills development programmes, which are widely regarded as being the personal responsibility and at the personal expense of the employee. This, too, is in keeping with American attitudes (Smith and Barabasch, 2012). Several company representatives also added in this context that they tried to recruit workers who already had good qualifications, to keep down induction costs.

The exception to this pattern is the funding of academic study programmes that prepare future departmental heads and managers for their responsibilities. In such cases, the fees are at least partly borne by their company. However, in many cases, the employee is then contractually required to remain with the company for a specific period (e.g. Company U7).

The interview data clearly show a marked divide between companies and vocational schools. The broad theory-based training delivered by schools either precedes or, at the employee's own initiative, is delivered in parallel with employment. In-company training, by contrast, is designed as practical OJT and not normally certified. There is no standard training for in-company trainers and, frequently, no formal provision at all for trainer training. Some of the companies surveyed (Companies U6 and U8) also reported that they commission external training providers to offer specialised in-house training.

The company meets the full cost of the programme and also develops the curricula for the College training input: the content is, therefore, geared largely to the company's needs, although some general skills are also addressed. In summary, the US-based German companies surveyed shared their host country's typical concern with cost. As a result, most companies offer largely unstructured, uncertified OJT geared solely to nar-

row, task-specific requirements, reflecting a polycentric strategy of the kind described above and representing a situation in which host-country cultural and institutional factors impede the transfer of HR methods (Heenan and Perlmutter, 1979).

5.2 German companies in China

Interviews were conducted in eleven major German chemical and automotive companies in the Shanghai area. The interview findings shows that German companies based in China engage in a wide range of skills training practices but that none of those surveyed offers training of the type traditionally provided in Germany, largely because vocational training in China is traditionally provided solely in vocational schools (Shi, 2012). China also lacks both a statutory framework for training and the necessary skills on the part of trainers to offer German-style cooperation between schools and companies (see also Zhao and Xu, 2008, 658).

In ten of the companies, training therefore takes the form of informal in-house induction for new employees, with no distinction made between school-leavers and experienced workers. Companies meet the full cost, and training begins with a (typically) week-long induction to the company, its departments, and products and key contacts. Participants then receive sector-specific OJT, overseen by colleagues, team-leaders and their supervisor, lasting for between one month and six months, depending on the job. Companies C3 and C7 send new employees to the parent company in Germany to acquire highly specific skills: For the difficult tasks at the few more complex machines, we send them to Germany for two or three months, where they get highly-specialised training on the machines (Company C3).

Virtually all the companies surveyed also geared their OJT to task-specific requirements. The companies surveyed recruit almost exclusively workers who have completed vocational school training (for production jobs) or graduates (for administrative jobs). Graduates are also recruited for jobs that would not require academic qualifications back in Germany and often regard them as a way into their profession. Company C2 gave an example: There's training for the role of a traditional secretary in Germany, but here, we take on graduates: for them, it's an entry-level post.

As well as induction training, the most common form of training practice among German companies in China, individual training programmes are run as voluntary, regional cooperation arrangements between companies and vocational schools; these are the exception to the usually strict separation between learning centres (see above) and focus particularly on training skilled production staff. Companies C8, C9 and C10 prefer independent cooperation of this kind. The companies have their own classes in vocational schools, which offer initial or mid-course training.

These company-specific classes enable trainees to acquire company-specific knowledge while they are still training to complement the fundamental vocational skills and expertise they are acquiring. Trainees receive full-time training in the school until shortly before they acquire their qualifications, when they move into a company for practical training. All the companies surveyed concentrate on job-related skills: If trainees do a placement with us, they are placed in the department where they will be working in

future. (Company C10). Companies do not certify this training. Company C9 offers the following explanation: Trainees don't get a certificate because the aim of our programme is to train them for our company, not for others. So it wouldn't make sense for us to provide certificates. The two learning centres each bear their own share of the cost of this training: the training costs arising in vocational schools are met by the state and the school out of tuition fees paid by the trainees, while in-company training costs are borne by the companies themselves. The trainees also receive a modest allowance while undergoing in-company training.

The companies engaging in this cooperative form of training see an advantage in producing trainees who are more adaptable and flexible, bringing down induction and OJT training costs: The difference with other classes is that the trainees from the company class fit into our company better. Once they have their qualification, they adapt more quickly to the way we work and our corporate culture. (Company C9).

Continuing training practices of German companies in China can be divided into state-regulated and in-company training. The former is offered in state vocational training centres by state-employed instructors, and it is compulsory for certain employees to participate. Since they offer in-company training, companies C7 and C11 have their own continuing training departments, which coordinate, organise and carry out all the further training the company requires. They cooperate with a range of universities and private providers. Not all in-company continuing training is certified. In most cases, the companies themselves fund both state-provided and in-company continuing training: We even pay part of the cost of doing an MBA for good employees. (Company C7).

In China the training practices of German companies could be summed up as being dominated by the polycentric effect. The companies surveyed gear their skills training policy to local conditions and the skills development systems that predominate in China. They meet their staffing needs by recruiting school-leavers or workers already on the labour market, but some companies try to remedy the lack of practical experience and generally inferior skills levels of those emerging from vocational training schools by implementing elements of the training structure of the parent company. In some of the companies surveyed, elements of Germany's dual training system have been incorporated into skills training in an attempt to boost trainees' practical experience, suggesting some ethnocentric effects (Heenan and Perlmutter, 1979).

5.3 German companies in India

The Indian survey focused on 15 companies in the state of Tamil Nadu operating in the construction, automotive supply and pharmaceuticals sectors. Training provision varied across the companies surveyed and was a major element of company policy. Company I15 was typical of the respondent companies: Wherever there is a new system or strategy, a new machine, a new product, a new process, change, there is a training need. In most of the companies surveyed, in management, HR selection and the design of both initial and further training, these companies act almost entirely autonomously and in line with local needs. The most common perception of initial education and training is that of the induction training given to new employees (for further information on the Indian

VET system see Pilz, 2016). This training is intended to familiarise new recruits with the company and its products and with their place of work. In most companies (ten of those surveyed), induction training took about a week. In the moment the person walks in, they are fresh. They will be put on our training programme. It is more focusing on the company policies, procedure, practices, ethos, culture and all those things. () It is mandatory for anyone who will enter the organisation (Company I1). In response to questions about the existence of possible introduction in India of a dual vocational education and training system of the kind offered in Germany, characterised by cooperation between the state and businesses in line with the concept of the Beruf (vocationalism), respondents stressed that no such system currently existed in India and that it would take time to adapt the current arrangements. Reasons cited included both the institutional framework in India and social acceptance of the vocational training situation (King, 2012; World Bank, 2008). Company I13 summed up the situation as follows: There is huge demand for vocational[ly] trained people in India. () But then it is are attracting some school drops out, but they are not affordable. () In fact admission to ITIs has reduced. But admissions to polytechnics and engineering have increased. At one point of time we are not getting the vocational trained people for the lower level jobs.

In specific terms, and in line with traditional perceptions, the ideal post-school vocational trajectory for privileged young people is academic training followed by entry into the employment system. It should be noted that a number of occupational profiles for which Germany's training occupations prepare young trainees are offered as academic programmes within colleges and universities in India. A minority of the companies surveyed (two) offer what is known as apprenticeship training either after the basic theoretical training provided by ITIs or after trainees have completed their vocational secondary education. This apprenticeship training involves a year's practical training within a company. This training is not governed by a fixed curriculum but takes the form of on-the-job training (OJT) provided by the heads of specialised departments who have, however, received no special instruction in providing it. The state subsidises the trainees' wages and the cost to the companies of providing training. There is no final examination or assessment on completion of the practical training. Companies also offer special work experience-based training to what are known in India as fresh [new] graduates on the basis of their future jobs. After a theoretical induction into the training company, these new graduates do several months' OJT, which is subject to various kinds of monitoring and assessment. This training runs for between six and twelve months, depending on the complexity of the job, and is largely informal.

Continuing training measures are dependent on the current demands and essential skills profile of specific jobs. In-service training is designed to close the knowledge gap between the job profile and an employee's actual level of skill and to give the employee the optimal level of training for his or her post and responsibilities. In-house training provision is formal and structured and is supported by learning materials, although in the vast majority of cases, these materials relate solely to the individual company (for example, product presentations) and are not intended to provide knowledge beyond that limited scope. It is unusual for companies to certify employees' participation in

training. Since the vast majority of provision is organised and carried out in-house, the companies see no need for certification. Where training courses are conducted outside the company, participants receive a certificate of attendance. Employment itself is a certification (Company I10).

All the companies surveyed meet the full cost of training in the knowledge that the costs will bring benefits. Training for new graduates in particular is expensive, so measures are taken to retain these trainees after their OJT and to boost their productivity by funding their further training and promotion. Company 6 manages this as follows: We introduced a scheme that we will employ them on a normal listing. At least some amount is deducted every month. We said you will get this this is a loyalty bonus. You will become available for this only after two years of service. If you are leaving you don't get that. It is not [for] the purpose of making any money. But they are trained and when somebody is leaving, I will lose this money. (Company I6) Here, too, is evidence of polycentric strategy in the way training practices are organised in German companies operating in southern India. Most of the companies surveyed operate independently of their German parent and are geared strongly to local conditions, combining unskilled labour or those with restricted job-specific skills on the one hand with an academic focus on the other (World Bank, 2008; King, 2012).

5.4 German companies in Japan

Interviews were conducted in five companies operating in the Tokyo region as subsidiaries of German companies. None of these companies is carrying out initial vocational training activities. The HR managers interviewed justified this on the grounds that the Japanese education system does not have an appropriate institutional framework to enable companies to provide systematic initial training, let alone to adopt the German dual training system as a model (Pilz et al., 2015). The main factors here, according to the interviewees, were the absence of infrastructure for cooperation between schools and companies and the high cost of using skilled trainers. They also complained about the relative immaturity of Japanese school-leavers, the higher levels of advice and monitoring that companies have to engage in.

One HR manager reported that because of these factors, experiments with dual vocational training over recent years in Japan have proved unsuccessful: There is no formalised training here. The Chamber [German Chamber of Trade and Industry in Japan] tried to introduce such programmes, but unsuccessfully. (Company J1). One challenge facing German subsidiaries in Japan is that the Japanese education system focusses more on general education than on vocational education, with the result that there is no viable vocational education and training system and a shortage of suitably skilled young people (Pilz and Alexander, 2011). Meanwhile, graduates, who make up the largest proportion of labour market entrants in Japan, lack vocational knowledge and are thus often difficult to place directly in companies. One company described the situation in the following terms: To be quite candid, we are simply not geared to compensating for the fact that people come here with training and qualifications acquired elsewhere that are unsuited to our activities. (Company J3). A further perceived shortcoming is the low

value the Japanese higher education system attaches to work placements. Placements that take students out of academic teaching are not common in Japan, so the best that most students can hope for is to complete a very short *taster* placement during academic vacations (Company J1).

These factors mean that three of the five subsidiaries interviewed did not recruit newly qualified employees, even graduates. The German companies interviewed who did recruit and train graduates made use instead of trainee programmes. Each year, a specific number of graduates (most at Bachelors level) are recruited and receive skills development within a trainee programme that generally runs for one to two years. The main learning method is on-the-job training (OJT), supported by seminars and, in some cases, by a practical placement in a foreign subsidiary. Trainee programmes of this kind are developed centrally by the parent company, so they differ only marginally from the global skills development standard, with local adaptations generally limited to the changes dictated by specific statutory or market requirements or by the need for greater language training input.

Overall, the importance attached to the initial skills development of school-leavers or graduates is, therefore, relatively low. All the subsidiaries interviewed emphasised the importance of recruiting and subsequently training individuals with existing work experience a group known as mid-career recruits because these individuals can be deployed directly within the company. Their training is then geared to individual and company-specific requirements, which requires only a modest financial investment. In all the companies interviewed, the range of continuing training for employees with prior work experience is provided through a combination of OJT and off-the-job training (OffJT) tailored to individual and company-specific requirements and financed primarily by the employer. While OJT takes the form in all these companies of company-specific and largely non-formalised learning along the lines of what one interviewee (Company J2) called day-to-day coaching, OffJT differs from one company to another in terms of the content of training and the way in which it is organised. In all the companies we interviewed, OffJT provision is outsourced to external providers, reflecting the HR strategy of the host country. The cost and quality of further training are further factors in favour of outsourcing. OffJT provision consists primarily of management training, language courses, and technical training in product families.

In summary, the German subsidiaries operating in Japan surveyed for this paper have not adopted any elements of Germany's dual model of vocational education and training. Instead, they focus on recruiting skilled workers with prior work experience and on developing their skills. Continuing training, meanwhile, reflects elements of globally standardised training models. Most of the foreign subsidiaries interviewed act independently of the parent company and polycentrically. A geocentric approach can be found only in the area of the further training offered by these companies.

6 Analysis

Any assessment of the findings of a qualitative study cannot claim either to be generally representative or to offer a comprehensive explanation of the context across the three countries, which show marked differences in practice. However, our findings point to some trends in regard to the main kinds of skills development practice and their impact on in-company training and training policy more generally (see Table 1).

Overall, our findings indicate a dominant polycentric effect. Applying the categories of Germany's *Berufskonzept* demonstrates that the companies surveyed did not closely emulate its vocational training system in most of these areas. Nor did we find any significant differences between sectors or any patterns linked to size of company. In each country, companies demonstrated a largely identical pattern in relation to skills development regardless of the sector of manufacturing in which they operated or of company size.

Table 2 aggregates the findings graphically. It depicts the divergence in patterns of skills training between German companies operating in the USA, China, India and Japan. It also forms the basis for a comparison between countries.

In terms of theoretical analysis and comparison of country-specific findings, the most appropriate approaches would be those that set differing training regimes in their political and economic context, such as the *varieties of skill formation systems* approach (Busemeyer and Trampusch, 2012), or an approach that focuses more on the theory of occupational training, such as Greinert (2002). Here, however, we shall restrict our theoretical framework to the *Berufskonzept* so as to achieve maximum consistency between the reported findings and their explanation.

Table 1: Overview of the aggregated findings in the USA, Japan, India and China

Criteria	USA	Japan	India	China
cooperation between vocational schools and companies	no cooperation	no cooperation	no cooperation	partial cooperation
training content	task specific content	task specific content, global standards	task specific content	task specific content
participants	graduates from community colleges, experienced workers	from mainly experienced workers	graduates from ITIs and universities, experienced workers	graduates from vocational schools and universities, experienced workers
trainers	work without educational background	colleagues without educational background	work without educational background	colleagues without educational background
training costs allocation	informal trainings by companies, formal training mainly by individuals	by company	by company	by company
certification	no certificate	no certificate	no certificate	no certificate
relation between initial VET and continuing training	impossible to separate initial VET and continuing training	higher proportion of continuing training programmes	higher proportion of continuing training programmes	higher proportion of continuing training programmes

It is, then, particularly striking that all four countries make a clear distinction between theory and practice. This phenomenon, which is unusual in the German context, is evident in both organisational and curriculum terms. In all four countries, vocational schools operate largely independently of company provision and provide primarily theory-based training. The closest parallels with Germany were found in China, where the focus is on the initial training of young people, there are twin learning centres (at least in the third year of training), and training content is clearly laid down in curricula. The reason why China is the only country of the four studied to have some successful cooperation arrangements between vocational schools and German companies lies in the history of vocational training in the country. During industrialisation in the 1950s and 1960s, some state-owned companies ran their own vocational schools in which in-company training played a major part. Once privatisation began, these vocational schools were closed and replaced by full-time, state-run vocational training (Hao, 2012), but the concept of cooperation between vocational schools and companies has left traces in the Chinese training system, even though the kind of cooperation that now exists would not be regarded as cooperation in Germany. In India, by contrast, companies would benefit from linking up with the 9,000 or so Industrial Training Institutes (ITIs) as cooperation partners (Agrawal, 2012, 459-462). However, the quality of the training offered by ITIs is often very poor: alongside deficiencies in accommodation and equipment, they often lack appropriately qualified instructors and a modern curriculum (ILO, 2003; Singh, 2012, 202-204). As a result, German companies in India often do not have access to high-quality vocational schools to partner with.

The picture in the USA is different again. Community Colleges offer a good standard of training, although they also offer a wide range of theoretical/academic provision, and intensive networking with companies and practically-oriented initial training for young people has not so far been a priority for them (Schmidtke, 2012; Lerman, 2013).

The research findings for Japan show a rather mixed picture. Japanese companies take the view that technical skills are acquired predominantly through OJT and many years of hands-on experience (Drinck, 2002, 263). Their understanding of initial skills development for school-leavers is quite different from that found in Germany: for these Japanese companies, initial training is not about acquiring standardised skills and qualifications but, rather, about the long-term social integration of young people within corporate culture (Georg and Demes, 1995, 89). The strongly academic emphasis means that German subsidiaries in Japan cannot engage in skills development of job entrants in the way it is understood in Germany and, instead, recruit exclusively experienced workers. The skills development practices of German subsidiaries are, therefore, weighted towards providing further training for mid-career recruits, using a wide range of measures that differ in approach from company to company.

Moreover, there is no standard approach in any of the four countries to creating dual initial training structures: they have no national training programmes with a strong practice component based on standard content and modern curricula. Provision is either strongly locally influenced, as in the USA (Lerman and Rauner, 2012), or based on outdated and highly theoretical curricula with little, if any, relevance to practice, as in India and, in some cases, China (Singh, 2012; Lai and Lo, 2008). Finally, there is an

interesting phenomenon in relation to the structuring of the four national labour markets. What the literature styles poaching is a concern for German companies generally, not just in these four countries, but many seem to have developed measures to reduce the risk of this happening, including retention incentives or partial funding of training costs. As a result, even German companies that successfully follow the dual vocational training system at home are unable to do so abroad, or at least in the countries surveyed for this project. To return to the starting point for this paper, it is, therefore, likely that any transfer attempted by other stakeholders, such as Chambers of Trade and Industry, development cooperation organisations or NGOs, is likely to be even more problematic. A further consideration is that many stakeholders involved in such transfer attempts tend to be focused on short- to medium-term outcomes and results, for example because of financial or funding constraints. It is, therefore, often impossible to determine the long-term prospects of developments in the area of policy transfer. Moreover, there is a general question concerning why companies that have the will to transfer systems often find that their ability to do so is more problematic, as we set out here.

One way of answering this question is to adopt an approach developed by Raffe (1988), which in the context of innovative training policy projects distinguishes between intrinsic logic and institutional logic. In relation to the question under discussion in this paper, the transfer of the familiar German model of training to the foreign subsidiaries of German companies is the intrinsic logic. Institutional logic, which is determined by the cultural, policy and labour market factors in the host country and the design and operation of its VET system, is entirely different (Fürstenau et al., 2014, 452-453). These contrasts generate what I call a clash of training cultures (Pilz, 2009) and, ultimately, a range of failures in the process of VET transfer (Fig. 1).

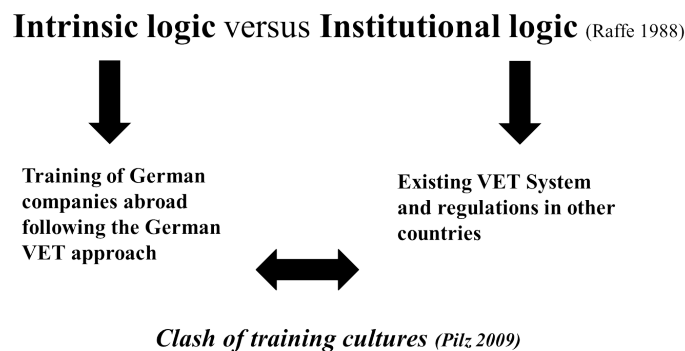


Figure 1: Theoretical basis for the explanation of the results. Author's own compilation.

7 Outlook

It is important to acknowledge here, though, that our findings have also revealed limitations in the research design and demonstrate that additional research approaches are

needed. Although our data highlighted no major differences between the companies surveyed, the sample should be increased to take greater account of different regions in the host country, differing company sizes and the specific characteristics of the sector concerned.

It would also be advantageous in future for research consistently to target solely companies that operate in the full range of countries surveyed. This would enable closer examination of the influence of national characteristics on training strategies. Larger-scale research projects would, finally, enable scrutiny of how the training activities of companies from contrasting training cultures differ when transferred to the same host countries and of which models may produce the best results under specific conditions. It can be assumed that the dual model of vocational training is inherently particularly difficult to transfer, for example because it requires companies and vocational schools to cooperate, because skills training is comprehensive and takes a relatively long time, and because the rigid curricular design and teaching may contrast markedly with more flexible and strictly output-oriented modular approaches to VET, such as that represented by NVQs in the United Kingdom (Roe et al., 2006). One further aspect also needs to be taken into consideration if we take the question of VET policy transfer in a wider perspective into account. It seems to be very important to be aware about the question whether any VET system should be transferred as a whole or in part and also which aspects should be transferred. That decision can only be taken within the context of the framework and of the needs identified.

Research findings and also our own data show, that it is very difficult to transfer a system such as the German dual vocational education and training system in its entirety (Stockmann, 2013). Nevertheless, in many cases, individual system aspects can be appropriate for transfer once they are localised (see, for example, Mehrotra et al., 2014). In such cases, however, it is essential to warn the partners abroad before any misunderstandings arise, because a partial transfer of a system means also partial transfer of that system's advantages. Moreover, account has to be taken of the interdependencies between systems and the short- and long-term repercussions of the transferred and non-transferred system aspects; where insufficient consideration is given to these, the outcome may be that the entire process is perceived as negative.

It is, therefore, essential that very careful attention is given to planning the scope and necessary country-specific adaptations before any VET export project gets under way and that every effort is made to ensure that the process of achieving results is transparent. One crucial aspect for proper planning is a deep inside knowledge about the status quo of the VET system in the affected countries. To generate this knowledge the existence of a well-developed research in comparative VET is essential.

References

- Agrawal, T. (2012). Vocational education and training in India: challenges, status and labour market outcomes. *Journal of Vocational Education and Training*, 64(4), 453-474.
- Alagaraja, M. (2013). The strategic value and transaction effectiveness of HRD: A qualitative study of internal customer perspectives. *European Journal of Training and Development*, 37(5), 436-453.
- Barabasch, A., & Rauner, F. (2012). *Work and Education in America The Art of Integration*. Heidelberg, London, New York: Springer Science + Business Media.
- Barabasch, A., & Wolf, S. (2011). Internationaler Policy Transfer in der Berufsbildung Konzeptionelle Überlegungen und theoretische Grundlagen am Beispiel deutscher Transferaktivitäten. *Zeitschrift für Erziehungswissenschaften*, 14(2), 283-307.
- Blossfeld, H.-P. (1994). Different Systems of Vocational Training and Transitions from School to Career - The German Dual System in Cross-national Comparison. In CEDEFOP (Ed.): *The Determinants of Transitions in Youth* (pp. 26-36). Berlin: CEDEFOP.
- BMBF (2012). *Vocational Education and Training in Europe Perspectives for the Young Generation - Memorandum on Cooperation in Vocational Education and Training in Europe*. https://www.bibb.de/dokumente/pdf/memorandum_vocational.pdf. Accessed 14. July 2015.
- Busemeyer, M.R., & Trampusch, C. (2012). The comparative political economy of collective skill formation. In: M. Busemeyer, & C. Trampusch (Eds.), *The Political Economy of Collective Skill Formation* (pp. 3-38). Oxford: Oxford University Press.
- Clement, U. (1999). Die transnationale Kommunizierbarkeit des Berufes Verständigungsprobleme im globalen Dorf. *Zeitschrift für Pädagogik*, 40, 219-231.
- Deiinger, T. (1998). *Beruflichkeit als organisierendes Prinzip der deutschen Berufsbildung*. Markt Schwaben: Eusl.
- Dore, R., & Sako, M. (1998). *How the Japanese Learn to Work* (second edition). London, New York: Routledge.
- Drinck, B. (2002). Marktorientierung im japanischen Bildungssystem Einblick in den gegenwärtigen japanisch-deutschen Diskurs. *Zeitschrift für Erziehungswissenschaften*, 5(2), 261-278.
- Drumm, H.J. (2008). *Personalwirtschaft*. Berlin, Heidelberg: Springer-Verlag.
- Euler, D., & Wieland, C. (2015). *The German VET System: Exportable Blueprint or Food for Thought?* Gütersloh: Bertelsmann.
- Federal Institute for Vocational Education and Training (BIBB) (2007). *Dual Training at a Glance*. http://www.helsinki.diplo.de/contentblob/1775196/Daten/131100/pdf_dualebildung.pdf. Accessed 01 April 2014.
- Federal Institute for Vocational Education and Training (BIBB) (Ed.) (2012). *Vocational Training Regulations and the Process Behind Them*. <http://www.bibb.de/veroeffentlichungen/de/publication/download/id/2062>. Accessed 01 April 2014.
- Flick, U. (2007). *Qualitative Sozialforschung: eine Einführung*. Reinbek bei Hamburg: Rowohlt-Taschenbuch-Verlag.

- Fürstenau, B., Pilz, M., & Gonon, P. (2014). The Dual System of Vocational Education and Training in Germany What Can Be Learnt About Education for (Other) Professions. In: S. Billett, C. Harteis, H. Gruber, (Eds.), *International Handbook of Research in Professional and Practice-based Learning* (pp. 427-460). Dordrecht et al.: Springer.
- Gehmlich, V. (2009). Kompetenz and Beruf in the context of the proposed German Qualifications Framework for Lifelong Learning. *Journal of European Industrial Training*, 33(8/9), 736-754.
- Georg, W., & Demes, H. (1995). Berufliche Bildung und betriebliche Qualifizierung. Anmerkungen zum Qualifikationsverständnis in Japan und Deutschland. In *Japanisch-Deutsches Zentrum Berlin (JDZB) (Ed.), Übergang vom Bildungs- in das Beschäftigungssystem und der Berufsstart: Veränderungen in Japan und Deutschland in den 90er Jahren (Symposium vom 05.-07.12.1994)* (pp. 87-112).
- Government of India, National Skills development Agency (2012). National Skills development Policy. <http://www.skilldevelopment.gov.in/sites/default/files/resource/NationalSkillDevelopmentPolicyMar09.pdf>. Accessed 02 April 2014.
- Greinert, W.-D. (2002). European vocational training systems: the theoretical context of historical development. In: W.-D. Greinert, G. Hanf (Eds.), *Towards a history of vocational education and training (VET) in Europe in a comparative perspective, Vol. I [Cedefop Panorama series; 103]* (pp. 17-27). CEDEFOP: Luxembourg.
- Hao, Y. (2012). The reform and modernization of vocational education and training in China (working paper). Berlin: Wissenschaftszentrum Berlin für Sozialforschung.
- Heenan, D.A., & Perlmutter, H. V. (1979). *Multinational organization development. A social architectural perspective*. Reading (Massachusetts): Addison-Wesley.
- Heinz, W. (1995). *Arbeit, Beruf und Lebenslauf Eine Einführung in die berufliche Sozialisation*. Weinheim, München: Beltz Juventa.
- Hellwig, S. (2008). *Zur Vereinbarkeit von Competency- Based Training (CBT) und Berufsprinzip: Konzepte der Berufsbildung im Vergleich*. Wiesbaden: VS Verlag für Sozialwissenschaften.
- ILO (2003). *Industrial Training Institutes of India: The efficiency study report*. Geneva: ILO.
- King, K. (2012). The geopolitics and meanings of India's massive skills development ambitions. *International Journal of Educational Development*, 32(5), 665-673.
- Lai, M., & Lo, L. (2008). Perceived workplace competences at three sites on the Chinese Mainland. *Journal of Vocational Education and Training*, 60(2), 189-204.
- Lerman, R.I., & Rauner, F. (2012). Apprenticeship in the United States. In: A. Barabasch, & F. Rauner (Eds.), *Work and Education in America - The Art of Integration* (pp. 175-193). Heidelberg: Springer VS.
- Lerman, R.I. (2013). Expanding apprenticeship in the United States: barriers and opportunities. In: A. Fuller, & L. Unwin (Eds.), *Contemporary Apprenticeship International Perspectives on an Evolving Model of Learning* (pp. 105-124). Oxon: Routledge.
- Marhuenda, F., Salvà, F., Navas Saurin, A.A., López, M.A. (2015). Twenty Years of Basic Vocational Education Provision in Spain: Changes and Trends. *International*

- Journal for Research in Vocational Education and Training (IJRVET), 2(2), 137-151.
- Maurer, M.; Arnold, R.; Gonon, P.; Michaelowa, K., & Wieckenberg, U. (2011). Evaluators' Final Report. In Swiss Agency for Development and Cooperation (Ed.), *Evaluation 2011/2: SDC's Vocational Skills Development Activities* (pp 13-96). Berne: Swiss Agency for Development and Cooperation.
- Mehrotra, S.; Raman, R. K.; Kumra, N., & Rö, D. (2014). *Vocational Education and Training Reform in India: Business Needs in India and Lessons to be learned from Germany* (working paper). Gütersloh: Bertelsmann Stiftung.
- Mieg, H.A., & Näf, M. (2005). *Experteninterviews*. Institut für Mensch-Umwelt-Systeme (HES). Zürich: ETH Zürich.
- OECD (2012). *OECD Economic Surveys: United States 2012*. http://dx.doi.org/10.1787/eco_surveys-usa-2012-en. Accessed 25 February 2015.
- Perlmutter, H.V., Heenan, D.A. (1974). How Multinational Should Your Top Managers Be? *Harvard Business Review*, 52(6), 121-132.
- Phillips, D., & Ochs, K. (2004). Researching policy borrowing: some methodological challenges in comparative education. *British Educational Research Journal*, 30(6), 773-784.
- Pilz, M. (2009). Initial vocational training from a company perspective: a comparison of British and German in-house training cultures. *Vocations and Learning*, 2(1), 57-74.
- Pilz, M. (Ed.) (2016). *India: Preparation for the World of Work Education System and School to Work Transition*. Wiesbaden: Springer VS.
- Pilz, M., & Alexander, P.-J. (2011). The transition from education to employment in the context of social stratification in Japan a view from the outside. *Comparative Education*, 47(2), 265-280.
- Pilz, M., Schmidt-Altman, K., & Eswein, M. (2015). Problematic transitions from school to employment: freeters and NEETs in Japan and Germany. *Compare: A Journal of comparative and international education*, 45(1), 70-93.
- Poell, R., Pluijmen, R., & Van der Krogt, F. (2003). Strategies of HRD professionals in organising learning programmes: a qualitative study among 20 Dutch HRD professionals. *Journal of European Industrial Training*, 27(2/3/4), 125136.
- Raffe, D. (1988). Modules and the Strategy of Institutional Versatility: The First Two Years of the 16-plus Action Plan in Scotland. In D. Raffe (Ed.), *Education and the Youth Labour Market: Schooling and Scheming* (pp. 162-195). London: The Falmer Press.
- Rauner, F., & Maclean, R. (2008). *Handbook of Technical and Vocational Education and Training Research*. Wiesbaden: Springer VS.
- Roe, P., Wiseman, J., & Costello, M. (2006). *Perceptions and Use of NVQs: A survey of Employers in England* [DfES Research], London.
- Ryan, P. (2003). Evaluating Vocationalism. *European Journal of Education*, 38(2), 147-162.
- Ryan, P. (2003). Evaluating Vocationalism. *European Journal of Education*, 38(2), 147-162.

- Schamp, E.W., & Stamm, A. (2012). New trends in an old sector: Exploring global knowledge and HR management in MNCs and the NorthSouth divide in human capital formation. *Innovation and Development*, 2(2), 285-302.
- Schippers, S. (2009). *Systemberatung zwischen Anspruch und Wirklichkeit*. Wiesbaden: Tectum.
- Schmidtke, C. (2012). The American Community College. In: A. Barabasch, & F. Rauner (Eds.), *Work and Education in America The Art of Integration* (pp. 53-75). Heidelberg: Springer VS.
- Shi, W. (2012). Development of TVET in China: Issues and Challenges. In M. Pilz, (Ed.), *The Future of Vocational Education and Training in a Changing World* (pp. 85-95). Wiesbaden: Springer VS.
- Singh, M. (2012). India's National Skills Development Policy and Implications for TVET and Lifelong Learning. In M. Pilz (Ed.), *The Future of Vocational Education and Training in a Changing World* (pp. 179-211). Wiesbaden: Springer VS.
- Smith, P.L., & Barabasch, A. (2012). Vocational Education Then and Now: So What's the Difference? A Dialogue About the Philosophy of VET in the United States. In: A. Barabasch, & F. Rauner (Eds.), *Work and Education in America The Art of Integration* (pp. 141-154). Heidelberg: Springer VS.
- Stockmann, R. (2013). *Metaevaluierung der Berufsbildung. Ziele, Wirkungen und Erfolgsfaktoren der deutschen Berufsbildungszusammenarbeit*. Münster: Waxmann.
- Venter, K. (2004). One Country, Two Systems, Multiple Skill Demands: The Dilemmas Facing the Education System in the People's Republic of China. *Journal of Education and Work*, 17(3), 283-300.
- Wagner, H.-G. (2003). The Sino-German experience 20 years of cooperation in vocational education and training. *International Journal of Training Research*, 1(1), 99-105.
- World Bank - Human Development Unit South Asia Region (2008): *Skill Development in India. The Vocational Education and Training System*. Discussion Series Report No. 22. <http://datatopics.worldbank.org/hnp/files/edstats/INDwp08c.pdf>. Accessed 25 February 2015.
- Yan, H. (2011). *The reform and modernization of vocational education and training in China*. WZB Discussion Paper, No SP III 2012-304. Berlin.
- Zhao, Z., & Xu, H. (2008). Implementing Dual Vocational Education in China: A Case of Transnational Innovation Transfer through a German-Chinese Research and Development Project. In: F. Rauner, & R. Maclean (Eds.), *Handbook of Technical and Vocational Education and Training Research* (pp. 656-660). Wiesbaden: Springer VS.
- Zirkle, C., & Martin, L. (2012). Challenges and Opportunities for Technical and Vocational Education and Training (TVET) in the United States. In M. Pilz (Ed.): *The Future of Vocational Education and Training in a Changing World* (pp. 9-23). Wiesbaden: Springer VS.

Bibliographical notes

Matthias Pilz is Professor at the Chair of Economics and Business Education at the University Cologne, Germany. He is also Director of the German Research Center for Comparative Vocational Education and Training (G.R.E.A.T.). His research interests focus on international comparative research, modularisation in VET, and school development.

Acknowledgement

The author would like to thank Junmin Li, Jochen van der Burgt, Friederike Stumpf and Christine Wilbertz (all from the University of Cologne) for collecting the data in the countries. Janet Fraser (London) has translated the paper in a perfect way.