The German TVET-System
within the Scope of the International Discussion

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1. Historical Background: Selected Impressions
Vocational training for craft, commercial and technical occupations has a long history in Germany. For some trades it dates back to the guilds of the early Middle Ages. Nevertheless, although industrialization began in the eighteenth century and continued at an increasing pace throughout the nineteenth century, officially regulated vocational training with specified training contents remained largely confined to the craft trades. Since the overwhelming majority of workers were employed in the primary sector (agriculture), organized on-the-job vocational training concerned only a small proportion of potentially eligible young people, and then, only those of the male sex.
This situation changed drastically around the turn of the century when, mainly for political reasons, the civic education of young people assumed new importance and on-the-job vocational training was supplemented by vocational schooling in vocational schools. Attendance was either voluntary or subject to local regulation, however. And so the dual system of vocational training (apprenticeship training) slowly emerged – in the absence, as yet, of any comprehensive legal framework – as the main form of vocational qualification (see Lipsmeier/ Schröder 1994).
After the end of the Second World War, two principles which had proved valuable in general education during the Weimar Republic were extended to vocational education and training, where they had particularly important consequences:
- The Länder were given responsibility for education policy, independent of the centralized power of the federal government; that is the so-called federalismen principle.
- A pluralistic governmental and legal system guaranteed non-governmental forces a strong influence in important areas of education policy, especially in TVET.

2. The Vocational Training Act of 1969
It should be mentioned that the Vocational Training Act of 1969 governing every on-the-job vocational training – the Länder being responsible for the vocational schools – was adopted in a particularly favourable political conjuncture, namely during the grand coalition between the two major parties (CDU/CSU and SPD). Without going into the details of the Vocational Training Act (see for example
Arnold/Münch 1996), it should be noted that this law governs the whole range of apprenticeship training programmes in Germany, in other words, training occupations in industry, the craft trades, commerce, administration, agriculture and home economics. The public service, however, is excluded. The wide spectrum covered by this act is a unique feature of the German vocational training system. In most other European countries where apprenticeships are institutionalized, they are restricted to only a few areas of training or the economy (OECD, 1979; Hayes and Wheatley, 1979; CEDEFOP 1998).

The Vocational Training Act of 1969 introduced a new situation from the outset by establishing the formal obligation for every vocational training programme to provide „broadly conceived basic preparation for an occupation“ (§ 1).

In order to achieve this and to provide the necessary organizational framework, three sets of measures were subsequently implemented:

- **Curricular strategy:** Regulations were elaborated concerning the content of vocational training based on the principle of basic vocational education within a group of related trainable occupations (selection and sequence of appropriate contents, especially for the first year of vocational training).

- **Regulatory strategy:** The number of training occupations was reduced from around 900 after 1945 to about 370 in 1999. This move was linked to broader elementary vocational training (basic occupations); industrial and technical specialization have not declined. (An example is the reorganization of occupations in the metalworking industry where the number of training occupations was reduced from 42 to 6, with 17 options of specialization as defined in the training regulation of 1 August 1987.)

- **Legislative strategy:** A regulation was developed in 1972 for the recognition of training undergone in the basic vocational training year (be it in a dual „co-operative“ form or at a full-time school) or at a specialized school. This regulation provides that certain curricular standards should be applied, especially concerning the extent of practical occupational training. At the same time, the training occupations included in the Regulation concerning the recognition of the basic vocational year were assigned to 13 broad occupational fields. Training during this year has to cover the entire range of an occupational field, naturally at the cost of specialization.

One of the characteristics of dual vocational training in Germany is that learning takes place at two different locations (usually in an enterprise and in a school or vocational training centre). This makes it necessary to harmonize the contents of the curricula at the different sites, which is more difficult than would be the case if training is conducted at a single site (e.g. in an enterprise). Since the 1969 Vocational Training Act governed only the training provided in enterprises, it could not resolve this harmonization problem. Consequently, an agreement was needed between the federal government (responsible for enterprise-based training) and the Länder Ministries of Education and Cultural Affairs (responsible for
vocational training in schools), laying out the procedures according to which the co-ordination of education and training programmes has to take place. This agreement was reached in the joint findings report of 30 May 1972. On 17/18 May 1979 the initial procedures were refined in a resolution of the Board of the Federal Institute for Vocational Training (Benner, 1982, p. 67). Agreed patterns of negotiation were introduced to facilitate final agreement being reached on training regulations, including two principles:

- the so-called consensus principle, whereby the competent federal ministry issues a training regulation only following agreement by the social partners;
- the participation of experts (from industry, associations, the school system, etc.) in the drafting of training regulations.

3. The TVET-System in Germany

To foreigners, our historically grown TVET-structures often seem really complicated and little transparent. The system is a complex network of legal, administrative and operational cooperation not only between schools and firms, but between national and regional public institutions and employers' organizations as well as trade unions.

With regard to the formal structure of the dual system I will limit the description to a few basic facts:

Compulsory schooling in Germany is not restricted to general education. Students who graduate after 9 or 10 years of schooling achieving a certificate or not, have to attend some programme, most of them leading to an officially recognized professional qualification. The most common type of programme is part of the dual system and called Berufsschule. This part-time school caters to apprentices who, in addition to the practical training gained within their firms, receive both job-related theoretical instruction in their trade and also some additional general education (e.g. in English and civic education). Instruction takes place regularly for one or two days per week or, alternatively, for blocks of several weeks (day-release or block-release system). The type and objectives of vocational training courses are determined by the knowledge and skills specified in the profile of the training occupation; the time schedule and the subject matter are laid down in the overall training plan. The period of training should not exceed three and a half year nor should it be shorter than two years.

But the duality of our system is not exhausted describing the two learning-sites (or three if we take interplant training into account). Another crucial element organized in a dual form consists in the certification system. I mentioned that vocational education is delivered by state-run schools, but the final certificate is awarded by the local Chamber of Trades, Industry or Commerce.

The drawing up of training regulations and coordination with the skeleton curricula of vocational schools consists in a rather complicated procedure. Representatives from the Federal ministry of Education, Science and Technology, from the employers organization and trade unions, the Federal Institute for
Vocational Training and the Standing Conference of state ministers of Education and Cultural Affairs discuss, develop and decide about modification of training regulations.

The procedures have been criticized for being too complicated and too time-consuming under the aspect of innovations. A complex web of institutional structures like the German dual system of vocational education and training, generally lacks of flexible adjustment, just-in-time. Cooperation between the two learning sites, schools and enterprises, sometimes fails. On the other hand, it has to be resumed that in dual TVET-models enterprises have a vital interest in keeping training contents up to date and they do dispose of the institutional instruments to care for continuous innovation. Adapting curricula to new labor situations is a difficult process in Germany, but generally it works.

Even financing of vocational training is organized in a dual way since it stems from public funding as well as from private industry. Within the dual system, schools are run and paid by the state, but training within the firm is financed by enterprises. Apprentices receive allowances which are also financed by their firms. In Germany approximately 65% of an age group receive vocational education within the dual system. It may be difficult or even impossible for other training systems to reach such a high rate of an age-group for job-related training and education. Nonetheless in the difficult economic situation we experience nowadays, the attainment capacity of the dual system is declining. Since enterprises care for expenditures more cautiously, they plan and offer less training. Especially in the eastern German states we find an alarming scarceness for training vacancies in enterprises.

About 85% of every vocational training, leading to a gainful occupation, takes place within the Dual System. But as mentioned before, beside this main part of our TVET-System, there are a lot of different vocational full-time schools.

Although there have always been full-time vocational schools, both in pre-war Germany and in the Federal Republic of Germany, these schools remained confined to certain areas such as training for commercial occupations and home economics. Very diverse (in terms of duration, content, entry requirements, qualifications and their entitlement) this type of education gained importance in the 1950s, and increasingly in the 1970s, notably due to the following developments, leading to four main types of full-time vocational schools:

- Extension of the preparation for vocational training (preparatory vocational year) and as a part of vocational training in full-time vocational schools (basic vocational training year, specialized full-time vocational schools).

- Full-time vocational schooling as an alternative (two-year programme in a specialized full-time vocational school, specially in commercial fields), or as a substitute or equivalent (three-year programme in a specialized full-time vocational school) for vocational training within the dual system, especially in the field of social welfare and public health (about 5% to 10% of an age group).
Full-time vocational schooling for higher-level vocational training, for instance at the „assistant“ level (two- or three-year programmes in specialized full-time vocational schools, vocational colleges).

Full-time vocational schooling (sometimes organized as evening courses) within the framework of the so-called „second educational path“ following nine or ten years of general education (lower secondary schooling). These arrangements offer – usually in combination with or after an apprenticeship – entry qualifications for specialized institutes of higher education (in which case these preparatory full-time schools are called vocational extension schools at the lower secondary level and specialized upper secondary schools or vocational colleges at the upper-secondary level). Schools which prepare studies for universities are called colleges, specialized grammar schools or upper-secondary vocational schools, different names being used in different Länder.

4. Criticism of Reform Measures

Since the mid-seventies, there was considerable public criticism, not only about the numerical shortage of training places, but more particularly about the twofold „structural mismatch“ (Dams, 1973, p. 36):

- First, a lot of young people were unable to train for their preferred occupations; many were forced into training occupations which did not really interest them and were not adapted to the needs of the labor market or economic policy. Thus drop-out problems, subsequent retraining, and even unemployment were programmed in advance.

- Second, there were marked regional and gender-specific differences in the provision of training places, which reinforced the problem of inequality of opportunity and infringed on the principle of comparable living standards for all, enshrined in the German Basic Law.

Even in times of economic upturn some regions have been hit by a lack of opportunities. The question here is how a necessary structural change can be supported by measures and schemes towards initial and further vocational training.

At the same time there are a lot of difficulties to supply currently less popular apprenticeship trades, especially the handicrafts, with applicants for dual training. The problems of structural transmission in the regions concerned are tremendous, and they must be solved in a pragmatic way of cooperation between State based institutions, quasi-public agencies and private firms on the spot (Greinert 1994).

We notice more symptoms of crisis within the German debate about the future of the dual system, too (see Lipsmeier 1994a; 1996): traditionally vocational education in Germany leads into a well defined working hierarchy with a declining part of semi-qualified work, a broad base of qualified staff (trained within the dual system or in full-time vocational schools), a relatively small level of technicians and masters (Meister) (as important career perspectives for the graduates of the dual system) and a small group of academically trained managers. But this classical concept is eroding now. Responsibilities and competencies are
redistributed, changing the former positions and perspectives of those who leave the dual system substantially. In addition, contents of work changed, too. The former handicraft way of production has become more abstract and the importance of production itself is declining to the credit of a growing service sector. This trend leads many students and graduates to look for more promising careers than those which offers a traditional apprenticeship in the trade sector. In consequence, small and medium enterprises deplore the low educational standards of young people searching for training and many training places are not occupied in this sector.

Recently, there have been calls for a reinforced differentiation in qualification profiles in order to offer more differentiated training in terms of the contents and pedagogy to young people with learning problems on the one hand and particularly talented trainees on the other hand (Schaumann, 1991, p. 6). A debate is currently under way on the theme, „Equality of general and vocational education and training“, to consider the possibility of allowing those leaving the dual system to enter higher education, thereby increasing the attractiveness of the dual system of vocational training. While training qualifications from the dual system do entitle their holders to enrol in more advanced vocational training programmes, which in turn can be a stepping-stone to studies at an institute of higher education, entitlement to enrol in higher education programmes at universities or other establishments of higher education depends on a number of other examinations and moreover, varies from Land to Land.

Available certificates have a relatively well defined value on the labor market because they are provided by an interplant or governmental unity. Training is supposed to be pragmatic and job-related since it is organized in and by enterprises. This appraisal not only refers to cognitive knowledge and technical abilities. It is interesting to know that even for non or semi-qualified work, enterprises prefer to engage graduates from the dual system. Often these workers will come from totally different occupations, bakers become car mechanics, hair dressers become retailers. Besides the technical knowledge, entrepreneurs obviously honor the educational and socializing effects of the dual system.

5. Cooperation between TVET and the World of Work

The mutual interaction between qualification, labor market and labor organization permits new forms of manpower utilization in modern firms. Division of labor reached the limits. It is obvious now that dividing work even smaller and smaller will not contribute to exhaust any more productivity. On the contrary, enterprises begin to believe in motivating people by re-integrating tasks such as planning, control and maintenance into production. Taylorized job designs are replaced by comprehensive production-systems based on highly qualified workforce, complex job assignments and teamwork structures. Modern technologies provide the possibility to adapt production schemes to changing demands, and competent personnel is needed to handle such flexible production technology.
In technologically advanced production systems, workers have to solve increasingly complex problems. Pre-defined solutions do not fit the needs of industry anymore. To deal with unstructured situations like this, workers need a solid base of general skills. Specialized knowledge restricted to only one workplace are not sufficient anymore. Workers are supposed to understand not only their own job, but the whole production process, if they have to deal with planification, maintainment or innovation tasks. They need to communicate more precisely about arising problems. Capacity and willingness to be flexible become decisive skills.

The recent discussion about qualification needs in a highly advanced technological society reveals a fundamental contradiction: on the one hand there is a strong demand for flexibility, mobility and a closer linkage between education and training. Technical education is supposed to meet economies' growing demand for adaptable workers who can readily acquire new skills. Only broadly educated workers can deal efficiently with a rapidly changing environment (see World Bank 1995: p. 25). So TVET is challenged to provide broad technological knowledge, basic communication skills and the ability for self-organized learning. The call for broader skills emerges from both the challenges of flexibility in modern production and the insecurities of labor market. Specialized skills get obsolete quickly; flexible production needs workers that dispose of general knowledge and process competencies; teamwork within companies demands for communication between different occupations and on different levels.

At the same time, governments and school administrations are expected to link TVET as far as possible to enterprises, to transfer a part of the responsibilities to private enterprises, to make available private support and to orientate training by demand. To establish labor market linkages is mentioned as an important goal for educational policies in the World Bank paper (see World Bank 1995: p. 24) and in UNESCO recommendations (see UNESCO 1997). Job-related training is supposed to be more effective with regard to the learning process and the success of TVET-graduates on the labor market.

But enterprises normally do not find it very attractive to invest in general skills which are tradeable on labor market. First, the effect on productivity of a training course is easier to calculate when it suits to a special labor design. Second, the danger of spill-over effects increases with training courses that transmit generally employable knowledges. If employees are contracted by other firms after concluding a training period, this means a lost investment to the enterprise whenever the costs of training cannot be shifted to the employee (by reducing allowances during the training period) or to all enterprises (by training fees). The fear to lose manpower qualified by the own firm, frequently is used as an argument to renounce in-service-training and further training at all.

Therefore, several mechanisms have been developed to control the switch over of qualified persons. Some firms forbid their people to leave within a certain period of time after being trained. Others try to build a strong emotional or ideological identification with the firm which hinder frequent job changes (see Georg
1989). Until now, the most important strategy to control mobility after training was the limitation of in-service training to narrow task-oriented contents which assured the direct utilization of skills in the working process and impeded the spill-over to other firms. Since this strategy nowadays is criticized for hindering the development of innovative, broadly qualified personal, different possibilities have been tried.

6. Government Initiative and Future Strategies
The recent discussion in Germany with regard to new challenges of TVET we can summarize under two topics: Vocational Training is forced to prove more flexibility, and at the same time we have to emphasize the development of key qualifications such as methodological, social and individual competencies.

6.1 Flexibility
The falling half-life of knowledge and the rapid change of production systems demand for greater flexibility of the labor force. Knowledge has to become both: broader and deeper. Broad qualification helps workers to orientate themselves in an entire production process and within a larger occupational field. For those who dispose of broad knowledge, it will be easier to change working tasks or working places and to participate in integrative or even innovative work. At the same time, enterprises need specialized labor forces, able to understand the very specific production processes.
Since the last decade, educational reformers in Germany try to integrate these two directions of learning in a re-organized training scheme: apprentices receive broad information within one occupational field first and continue opting for specializations in the further ongoing of their studies. Occupations and training requirements for industrial metal working and electrical engineering were completely reorganized, with manual skills being reduced in importance and diagnostic, repair, programming skills becoming more important. The reforms reduced the number of specializations. Curricula for the part-time vocational schools and the training regulations for the firms were summarized and structured in a different way. A new basic level of training was introduced where learners receive information about general knowledge in occupational categories. Only after terminating this basic level, the theoretical part of training is subdivided in different occupations. This first general level makes further mobility between substituable jobs easier and helps to understand problems within a broader occupational field.
The benefits of more structured and transparent occupational categories and the reduction of the number of training programmes are broadly recognized. Summarizing it can be concluded that organization of TVET in occupational fields seems to be a world-wide trend not only in dual training systems, but in many school-based training systems as well.
Modular training is a similar way to enhance flexibility and mobility by structuring TVET-offers. In Germany, because of our specific labor-market structures and the legal base of vocational training, it seems
rather difficult to introduce modular training forms which go further than the re-organized apprenticeships mentioned above. But in other countries within the European Community the implementation of modular training is strongly discussed and the politically responsible actors in Germany are forced to re-examine the institutionized form of three-years apprenticeship schemes.

Modular training approaches also support concepts of life-long learning because it can be a link between TVET and continuing education and training. Life-long learning is getting increasingly important because it is supposed to do both, to repair eventual deficits of TVET and to adapt knowledge and skills to the future technical evolution.

6.2 Key Qualifications
The traditional dichotomy between knowledge and skills was replaced by the notion of „qualifications“.

The introduction of new production concepts in connection with new technologies created less of a need to enrich traditional training contents. The emphasis was rather placed on entrenching cross-occupational qualification elements in training. This included skills such as the capacity to plan, methodological competence, thining in terms of systems and the interrelation of parts thereof, a sense of responsibility and critical mind, social and communication skills. These qualification aspects, relevant beyond the boundaries of a single specialized occupation, emerged not only in the newly restructured industrial metalworking and electrical occupations and in craft trades. These „key qualifications“ were fitted into similar reforms in other occupational spheres, for example, in the commercial occupations.

If personal and social skills shall be trained in TVET, traditional training methods have to be appraised as questionable. Trainees will learn to work in a self-organized and flexible way only if the learning process itself allows such self-responsibility and competency. New learning methods aim at the generation and the coaching of these skills.

Two main tendencies shaped the re-orientation of vocational learning since the seventies in Germany (see Lipsmeier 1994b: p. 25): first, the increase of integrative training and learning methods (integration of theory and practice, integration of general and vocational learning) and second, the opening of learning processes to self-organized learning.

Methods like self-organized learning or learning in projects were developed in enterprises, but they also prove to be successful in vocational education. Since the acquisition of „aptitudes and mental attitude which enlarge the capacity of judgement, motivation and competency to react within occupational and extra-occupational areas“ (general preamble to the curricular framework of the conference of regional ministries of education) has become part of the curricular framework for vocational schools, integrative methods are used more frequently in vocational educational processes.
Proceeding on this logic, not only technical knowledge has to be tough to students, but they should be enabled to act with responsibility by transmitting also ecological, economical, political, social and ethical issues. By doing this, TVET may transmit a view of the world as a social and ecological network. New methodological approaches also change the relationship between students and teachers. Teachers and trainers do not have to perform lessons to a listening audience anymore, they should accompany and coach a learning process that is planned and executed by the pupils. A new culture of self-organized learning and self-training is coming up.

An important aspect in revising the curricula was to give teachers more scope to develop their own teaching ideas. Since the curricula only provided guidelines and broad objectives, teachers were able to define their own detailed objectives for the classroom situation. The individual teachers' scope for action was also extended through the emphasis of a more open teaching aimed at understanding abstract, systematic relations rather than transmitting facts. This gave teachers more freedom to select the concrete contents and methodological and didactic approach. They could also set their own priorities in accordance with the differing educational backgrounds of their students. Moreover, the greater scope for action gives teachers more opportunities to co-ordinate their teaching with the enterprises. It is difficult to judge the extent to which these opportunities are used, and therefore the quality of co-ordination between on-the-job and school-based vocational training. Curricula have been revised for similar reasons in the other Federal States (Bundesländer) as well. Within this context it is obvious, that the training of vocational school teachers should be offered by universities as in Germany and in Taiwan. But this university model is not very popular all over the world.

Resuming, I would like to emphasize our view, that the German dual system is going to survive even if it will not be able to attain 65% of an age group like it did in the last years. But a solid institutional structure, a strong social consensus about the importance of vocational qualification, the willingness and the ability of the social partners to contribute to a general consensus, provide the necessary resources for an efficient and innovative system of vocational education and training in Germany.

7. The International TVET-Discussion

The discussion of worldwide trends in Vocational Education and Training (TVET) is complicated by the fact that each nation disposes of own ways to transfer knowledge and skills to the younger generations. We find a large range of very heterogeneous TVET-systems and structures all over the world. Within this diversity it seems difficult if not impossible to define international trends, if by "trends" are understood as "mainstream" or "convergence".

In some countries, e.g. in Japan we find a "market model" of TVET (Greinert 1994). Occupational training happens rather independently from general education since it takes place at the inside of enterprises. Offer
and demand of qualified labor is regulated by market. By contrast, governments of other countries, as for instance France, regulate TVET strongly. In these "bureaucratic models" occupational skills are learned in schools. Finally, in the German-speaking countries but also in some latinamerican ones, in Singapore and more and more in the Philippines, TVET is organized als "dual" or "cooperative models". Both, state and enterprises fulfill well defined tasks and responsibilities within TVET. Occupations are learned partly in enterprises and partly in schools or other interplant institutions. Of course, the distinction between these models is an analytical one. In almost every country two or more TVET-models coexist, overlap, are mixed or complement each other. Which model prevails depends on historical "conditions" (Lipsmeier 1994a, p. 36 ff.) and social institutions, namely the general educational system, the further education possibilities, the degree of differentiation and formalization of professions, the economical situation of a country, the conditions on the labor market and the industrial relations.

In spite of all diversity within the models of TVET, there are general tendencies in our interdependent world which are similar in every country. I would like to emphasize just two of them:

- the complex of technical innovation, labor organization and skills, and
- paradigm changes concerning the role of government in economical and educational policies.

I would like to focus on the last point; the first aspect I mentioned earlier.

In the past two decades, we are witnesses of a world-wide change of paradigm related to government's role in the economies of nations in general and, as part of this, in TVET as a subsystem. The collaps of communist systems in East-Europe and the astonishing success of some south-east asian countries (NIC-nations) with strong orientation towards exportation, destroyed the ideological background about self-sustained, protective economical strategies.

The consequences were especially visible in developing countries: when the World Bank began to condition credits to structural adjustment programmes, most of them began to deregulate their economies in a painful and difficult process with high social costs. In industrialized countries, which always formed part of the world-market and based their economies on export, the paradigm change toward deregulation never had the drastic consequences they had in the developing nations. But concepts of a "lean state" also infiltrated efficiently the national policies. Subsidiarity has become the basic programme of many governments and supra-national institutions.

As far as TVET is concerned, bureaucratic systems have been sharply criticized especially by the World Bank. The Bank's Policy Paper on TVET (1991) as well as new publications (World Bank 1995) opt for a broad withdrawal of governments from vocational secondary schools. By this option, the World Bank changes former policies of supporting vocational and technical education within schools. Up to the eighties, the Bank had conditioned credit to the implementation of technical schools or at least,
vocationalization of general education. Since the early nineties, primary education is highly emphasized by
the World Bank because of its higher rates of return.

Public administration of TVET is criticized because of deficits of external and internal efficiency (see
Lauglo 1993, p. 16 ff.). A common criticism of training in secondary schools is that it connects poorly with
related work. The bureaucratic turgidity, unable to react to market signals, and to adequate training
contents to innovations in production and labor organization, have been deplored in school-based TVET.
As a consequence, in those countries where formal TVET was regulated, financed and executed
exclusively (or nearly exclusively) by the governments, we find now serious efforts to deregulate the
TVET systems. The goals of market-orientation endeavours are twofolded, to transfer authority and
responsibility from the public to the private sectors and to introduce market signals into the public side of
TVET (see Kelly 1994).

In most of the countries, the idea of market-orientation should be understood in a broad sense: it comprises
such divers concepts like decentralization, transfer of school-administrations to private institutions, new
financier concepts compelling private investments, the introduction of cooperative or alternating TVET-
types, the integration of school and production, or simply the effort to improve contacts between industry
and school by practical courses for teachers. All these heterogeneous concepts aim at one single purpose: to
design institutional TVET in a more flexible and more job-related way.

But, while justification of efforts to link institutional TVET to private industry is strong, evidence of
success is scarce. The costs (in terms of financial as well as political and social resources) for re-orientating
skills-development systems are perceived to be high. The privatization-ideology only has occasionally
touched the TVET-system as a whole (see Kelly 1994). There are strong arguments for a central role of
government in TVET-systems, too (see Kelly 1994; Lauglo 1993). At low levels of economic progress, the
private sector often is too small or not conscious enough of how important training is, to generate much
concern for skills development. There is a very reasonable fear that the withdrawal of governments could
fail to provoke private engagement. It seems that both forms of TVET, institutional and enterprise-
controlled training, develop in a parallel form rather than to compete with each other. In countries where
public TVET is underdeveloped, motivation and capacity for private TVET-organization is often weak,
too.

8. Summary

Enterprises all over the world suffer from the increasing pressure of competition and globalization. They
are forced to modernization, not only with regard to technology but also referring to labor organization and
production designs. Traditional knowledge becomes obsolete nearly as soon as assumed by learners. New
skills are demanded, being the capacity to keep learning all life long the most important one. Vocational Education and Training is upvalued by these trends, because qualified work is appraised as the sine qua non for new production designs. At the same time TVET is downvalued, because nowadays completion of training does not guarantee a secure and life-long place in the labor world at all.

At least in the last decade, the comfortable position of Germany in the world market has been threatened continuously. International confidence in German quality proofs to be not sufficient anymore, if it is not accompanied by reasonable prices. But because of our strong currency and high labor costs, German enterprises often find it difficult to compete with the lower production costs of other countries. But the national economy in Germany depends on a large scale on its capacity to provide the production systems with well qualified labor forces. Labor is expensive in Germany and, as a consequence, has to be highly productive. That means, that a highly qualified staff dealing with education and training within vocational schools and private companies as resources will help to deal with the actual challenges. The dual system of TVET has proved to be able to react to the problems of a rapidly changing world.

Each TVET-model consists of complex structures mechanisms which may be interpreted as „training cultures“. They represent the interests of the involved social groups and their capacity to succeed with these interests as well as historically grown institutions or modalities. Each training culture is supposed to be more or less functional within the social and economical environment it stems from. Reforms almost ever occur at the inside of systems without revolutionary changes.

But without any doubt, it is possible to identify approaches of TVET which are more able to deal with the actual globalized challenges than others. And it is the task of comparative TVET-investigation to identify successfull approaches, and to analyze the conditions of their emergence and functioning.

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