Development and Evaluation of VET Courses
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VET courses as historical entities and research objects

The need to modernise vocational education and training (VET) systems along a „future-proof" strategy has emerged as a central issue of educational policy, both at home and abroad. Although intensity, speed and decisiveness alter from country to country, it appears that modernisation for various reasons has become an international phenomenon or problem, a fact that is underlined by the European Union's commitment to „life-long learning" as a global strategy for all European countries (KOMMISSION DER EUROPÄISCHEN GEMEINSCHAFTEN 1996). As a consequence, the borders drawn between the various sectors of the educational and/or training system, including higher and further education, could become more and more permeable as the perception of a mismatch of learning outcomes with work requirements urges a fundamental rethinking of traditional courses as well as curriculum patterns. In contrast to these modern dynamics, the problem of integrating young people into the structures of social and economic life in former times was part of a natural process determined by the ongoing change of generations. When "division of labour" (SMITH 1776/1993) began to replace or complement the archaic forms of subsistence, occupations and work processes emerged as independent patterns for the production of goods and services and the process of skill formation became part of what Brunner (1956, 17) labelled the "basic tendency of European history towards rationality". In contrast to higher education, however, the pedagogical concept behind vocational reproduction was "imitatio" which became institutionalised in the corporations of the medieval world. In England, e.g., in 1563, the Statute of Artificers formalized the system of guild apprenticeship by establishing what has been described as a national manpower and employment policy (PERRY 1976, 6; DEIßINGER 1994). Having served an apprenticeship, under a properly qualified master, was made the central prerequisite for obtaining "freedom of the trade" within a city or town. The rules which determined this selection in most cases did not include the standardisation of training contents. The latter obviously were the product of practices within the community of the trade or occupation, which meant outside state regulation and the "curriculum of the occident" (DOLCH 1959/1982). It is interesting, though, that despite this general development in all European societies, differences between the German-speaking world and most other countries in Europe in terms of a specific "apprenticeship culture" (DEIßINGER 2004) strike the eye of the historical observer: This includes the insight into what different societies perceived as "education" and how they linked the idea of training for an occupation or a job to the notion of personality development of individuals (WINCH 2006). In this lies the root of the separation of education from training which applies to most national contexts.

For the German context it is remarkable that, although the vocational educational movement with Georg Kerschensteiner and Eduard Spranger (BLÄTTNER 1965; WINCH 2006) rehabilitated the idea and ideal of the vocationally educated individual, there was no real rehabilitation of the specific pedagogical aspiration of the term *Bildung* or "education of the invididual" (PAULSEN 1895). With the institutional development of both the general and the vocational education systems (the primary school or *Grundschule* and the vocational part-time school or *Berufsschule* are obvious products of this process) the term *Bildung* became more and more influenced by a technical or political understanding of "educational courses" and their institutional foundations. It may be claimed that educational courses function as social institutions by developing a specific "identity" without staying totally inflexible or unaltered in the face of external challenges. The results of such a "behaviour" may be termed "development" without stating that they emerge in an "organic" manner. When we bring together "development" and "evaluation" in this article, we look at expedient functions of educational institutions and the courses offered by them as well as to their potential to re-define or revise them in an appropriate manner (> 2.4). This, of course, includes purely pedagogical objectives as they were put forward in the educational debate of the 1960s and 1970s, or with Humboldt's educational reform at the beginning of the 19th century (BLANKERTZ 1969; DEIßINGER 1998, 25ff.).

We have used the term "apprenticeship culture" to point out that vocational training systems are determined by a specific "philosophy" or "intrinsic logic" which have to be understood "in relation to other societal institutions" including the labour market, the economy, the system of industrial relations and of course the system of government (RAFFE 1998, 391). With this premise in mind, looking at vocational training in a merely institutional manner by using the state function as the crucial *tertium comparationis* (e.g. GREINERT 1988) reduces the potential of getting insight into what really directs VET. In Germany, the understanding of a separate vocational pathway as "unique" and valuable in itself sets the country apart from most other European societies (with the exception of Austria and Switzerland). This unique positioning, however, has traditionally provoked

criticism with respect to the organisation of vocational training and general education "according to separate criteria and systems of assessment" including "limited possibilities for progression between them" (YOUNG 2003, 228). On the other hand, it may be argued that academic and (non-academic) vocational pathways, in the German case, are well rooted within disjunct but interdependent subsystems and that their mutual interaction obviously contributes to stabilizing the "vocational track" in a stronger way than in other countries (DEIßINGER 1998). Although the dual system of apprenticeship training (*Duales System*), being the main VET pathway, has emerged as a culturally fixed but functionally flexible framework, from which courses for outdated skilled occupations could be removed without negative side effects, new skilled occupations could be integrated and existing occupations could be adjusted to social, economic and technical changes (> 3.1.1). The structure of decision-making committees consisting of four equal parties and the principle of consensus, which is valid for institutional structures and contents of vocational training, restrict the influence of partial interests as they prevent one-sided interpretations of evaluation results (DEIßINGER 2001). Both the development of the apprenticeship system and of VET courses outside the dual system actually took place before an independent VET research was established (> 1.4). The vocational full-time school (it was named *Berufsfachschule* in 1973), which prepares students for an occupation, has adjusted itself permanently to current changes without systematic evaluation until today (> 3.3.8.2). When the Conference of Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany (*Kultusministerkonferenz*) established the *Berufsfachschule* in 1971 for "assistant occupations" (*Assistentenberufe*), there was no anticipating or accompanying evaluation. The same applies to VET courses at the *Fachschule* (1975), which extends vocational knowledge and skills and leads to high-level vocational certificates (e.g. technician) and also to general school-based qualifications leading into the tertiary sector. Other examples are the *Fachoberschule* (since 1969), where the admission to universities of applied science (*Fachhochschulen*) can be acquired, and the vocational grammar schools (1967), which have their origins in the *Wirtschaftsoberschule* (1926).

The pragmatic function of empirical VET research
In Germany, only in the 1960s, a VET research scene emerged as such by bringing together various strands of singular empirical research activities in a more or less homogeneous context (DFG 1990). At that time, the research community was above all eager to criticise the dual system of apprenticeship training (LEMPERT 1974) without looking explicitly to the integration aspect let alone the use of theory-based research approaches. Although the educational debate of the 1960s revealed a number of problems due to the company-based nature of the system and also pointed to its dwindling importance in the face of polarised labour markets, the German National Committee for Education (*Deutscher Ausschuss für das Erziehungs- und Bildungswesen*) "defended" the apprenticeship system by stating its success and functionality (DEUTSCHER AUSSCHUSS 1964, 131ff.). This also happened without an empirical foundation of the arguments in favour of or against the traditional apprenticeship system. Although the original intention to use evaluation research was to compare pretended objectives with real achievements the political instrumentalisation of evaluation research soon became apparent: In consequence, the function of research changed to feeding arguments into pre-set political decisions within the context of educational policy, especially with respect to new institutional or didactical features. One of the serious challenges of evaluation research until now is the methodological "protection" of research results against political instrumentalisation by establishing well-accepted standards of research practice (SANDERS 2000). One of the approaches is research based on "system theory" (PARSONS 1976, LUHMANN 1996).

By a system theory approach underlying evaluation research it is meant that evaluation aims at describing reality, such as educational courses or institutions, by investigating and assessing relevant objects according to their purpose or functionality. Such a research design is able to select those empirical data which can be related to the problem which has led or leads to the establishment of already existing or new educational courses and which helps to illuminate whether they contribute to solving the underlying problem or challenge. This includes that evaluation research can also be directed to revising an already operating scheme or institution because it has failed to meet the expectations underlying its foundation (> 5.4). The relevance of evaluation research is given in all contexts where research can help to detect illusionary expectations, deficits in the legitimation of targets or wrong assumptions referring to effects associated with educational innovations. All results of this kind of research, however, must aim at identifying research issues in a manner which makes sure that evaluation not only leads to reliable results but that it also contributes to posing new issues and questions of research (SANDERS 2000, 67 ff., 167 ff.).

In a system theory perspective the education system, with its differentiation of courses, educational targets and certificates, can be described as a "subsystem" within the social system, seen as a functionally structured entity (PARSONS 1976). The subsystem absorbs inputs (above all as alimentations) from society and at the same time is supposed to fulfil tasks (outputs) for other subsystems. VET courses can be seen as institutions which have to be

organised (or organise themselves) in concordance with their function within the social system. This means that (i) they have to be attractive for a specific segment on the demand side of the educational system (e.g. school leavers and their aspirations to take up specific qualifications) and that they produce an output apt to reproduce society by providing marketable qualifications (external functionality); and that (ii) they fulfil these tasks by using learning arrangements which are appropriate to the purpose resulting from their function as pedagogical institutions (internal functionality). Against this background, any course innovation in the area of VET requires a matching of different interests between different groups such as the government, companies, chambers or trade unions – the setting which is typical for the German situation, including the fact that 16 federal states are involved in VET in schools. The most serious challenge in this policy context is to convince relevant people and institutions that a new project or scheme is supposed to yield better pedagogical and/or social returns than the established system.

For example, the school-based *Berufsgrundbildungsjahr* (vocational foundation year) was established and promoted by educational policy in the 1970s. In its *Strukturplan* (Structural Plan) the German Educational Council (*Deutscher Bildungsrat*) held that the first year of initial training should be organised as a mandatory full-time course within a vocational field (*Berufsfeld*) severed from production and systematised in a different way as traditional apprenticeship training (DEUTSCHER BILDUNGSRAT 1970). The underlying idea was to avoid the early "exploitation" of the apprentice and to open up new opportunities for educational aspirations even under the restrictive conditions of the world of work typical for vocational training. Although the realisation of the vocational foundation year was a "cooperative" or "alternating" concept, much closer to the dual system as originally intended, the major purpose of the course remained "education" rather than "qualification", which became apparent in the curricula and the learning objectives which were "emancipatory" and therefore in accordance with the mainstream educational thinking of the time. From an evaluation perspective the question arises whether a primarily pedagogical legitimation of a vocational course is legitimate with respect to its "external functionality". Are the competences and qualifications instrumental for bridging the first year of training and a subsequent apprenticeship? Are they, above all, appropriate to enable young people to enter skilled employment successfully? What is the interest and aspiration of school leavers when they enter the vocational foundation year? Does it correspond with their expectations towards vocational training if they train in a "general" vocational field first before they pick up a specific occupation? Do they wish to be confronted with the world of work or do they prefer to be instructed in the classroom after graduating from general education?

Another more recent example for a policy aiming at innovations in the German VET system has been the implementation of "practice firms" (*Übungsfirmen*) which have received much attention and structural support from the government in the federal state of Baden-Württemberg. This curricular and instructional innovation is directed towards adding authenticity to the full time vocational school model. Against the background of the 'training market crisis' (DEIßINGER 2006a; DEIßINGER/HELLWIG 2004), Germany's governments, both at the federal and federal state level, currently have to cope with the rising number of participants in school-based vocational preparation courses as well as full-time students in VET of whom only some 50% attend courses leading to vocational qualifications that are nationally portable on the labour market. For an improvement of the status of these courses it is held necessary to strengthen the work-related features of VET outside the dual system. This problem, once again, reflects the traits of an "apprenticeship culture" rooted deeply in social foundations and mental patterns alike, which, e.g., are untypical for the English or Australian VET system (DEIßINGER 2006; HARRIS/DEIßINGER 2003; DEIßINGER/SMITH/PICKERSGILL 2006). Practice firms are seen as pedagogical tools supposed to make vocational schools practical and, in the case of the two-year full-time VET courses in "vocational colleges" (*Berufskollegs*), to increase the marketability of the "assistant" qualification, both with respect to skilled employment and a subsequent apprenticeship course (FELLER 2002). Although the revised German Vocational Training Act (2005) provides for a wider scope of accreditation modes in the responsibility of the federal states (FEDERAL MINISTRY OF EDUCATION AND RESEARCH 2005) the question remains whether, from an educational and social perspective, practice firms promote the employability of young people by developing skills in realistic learning environments which are able to simulate problems and work activities normally typical for workplaces in companies. Hereby, pedagogical expectations of the practice firm concept refer to the presumed benefits of an innovative learning arrangement which puts both the teacher and the student into different roles by requiring a new understanding of the relationship between teaching and learning as opposed to normal classroom settings of lessons in business administration or economics, i.e. learning arrangements which help to overcome the 'dualism of thinking and acting' (TRAMM 1994) and therefore follow the concept of 'activity orientation' (*Handlungsorientierung*) now seen as the dominant and most innovative pedagogical concept within the current VET debate (CZYCHOLL 2001).

The practice firm concept can also be evaluated by looking at it from a system theory perspective (DEIßINGER/RUF 2006). While there seems to be a clear pedagogical value in the perception of students and teachers when learning and teaching in the practice firm setting (internal functionality), the impact on external stakeholders appears modest (external functionality). Chambers and companies still believe that socialisation during an apprenticeship producing real working experiences cannot be equalled by a full-time model of VET. Against this background, it is very likely that only 'sandwich models' – dualising learning by combining internships or reduced periods of apprenticeship training with full-time vocational courses in a *Berufskolleg* or a similar institution - may in future function as partial or full substitutes for an apprenticeship. This, of course, puts strain on the practice firm concept and its political and pedagogical legitimation. One of the consequences, in fact, could be that the practice firm concept is no longer seen as a socially and economically best solution to "make schools practical" (DEIßINGER/SMITH/PICKERSGILL 2006).

Evaluation as a corrective for innovative VET projects
Evaluation may be defined as serving two functions of scientific endeavour: (1) to bring into focus the empirical reality of educational institutions and educational activities and (2) to allow for an assessment of intended effects against the background of the conditions for their realisation (> 5.4). Therefore, the focus of scientific evaluation should be the ascertainment and assessment of empirical results according to defined targets. Furthermore, evaluation functions as a critical instrument to prevent an expertise following practical experience from causing damage, to raise the awareness for risky actions and to recommend the correction of objectives and/or treatments with regard to predictable effects. This task is not easy to achieve under the circumstances under which evaluation is usually prepared and initiated. In most cases evaluation is not supported by externally funded researchers, but by project fundraisers pursuing certain interests. Research therefore is actually often used to give the impression that the agenda of educational policy is evaluated and if there are significant deficits the agenda ought to be corrected. This is especially the case in the area of pilot projects. Persons with a strong ideology resistant towards research findings can therefore sustain for many years (> 5.1.3). However, if evaluation were really undertaken without critically reflecting the objectives of projects and if evaluation focuses solely on external and internal functionalities in a technical sense, it would fail to fulfil the requirements of pedagogical research with its specific premises. Being a cognitive pragmatic discipline, educational research has to provide valid information; furthermore, it is important to provide pedagogical guidelines and support. Thus, educational research is an instrument for evaluation having its own criteria, which do not replace criteria defined by project fundraisers, but function as a corrective additionally.

Evaluation approaches (> 5.4.1) are clearly located within a historical and systematic context. According to the theory of educational institutions, they must therefore be regarded against the background of a complex institutional context in which political objectives, the demand for qualifications and pedagogical as well as anthropological ideas have to be treated as "real forces" (*reale Antriebe*) (REICHWEIN 1925/1963, 89). Evaluation in educational research assesses whether solutions to current problems can be found or have already been found. The concept of the *Berufsakademie* – officially called "university of cooperative education", but better translated as "vocational academy" (DEIßINGER 2005) – may be seen as an example for higher education policy emphasising the functional aspect of education and training. In Baden-Württemberg *Berufsakademien* provide vocational training outside the "normal" tertiary system. Vocational academies now can look back on 26 years of expanded institutional structures and growing capacity of and participation in a new kind of "academic apprenticeship system". In the early 1970s, many enterprises feared that due to an expansive educational policy young people with practical talents would prefer to go to grammar school and enter higher education. Politically, there was a consensus on the objective to qualify school-leavers from grammar schools both in theory and in practice for higher positions in business enterprises. Since the model should become a regular institution through the accreditation by the Comission of Bund and Länder for Educational Planning and Support of Research (BLK) the support of research was needed. The evaluation of vocational academies was undertaken in critical distance from practice and linked to the requirements of external and internal functionalities. Thus, the evaluation aimed at specifying the understanding of an "academic dual system", identifying deficit arrangements and stabilising suitable institutional and curricular regulations. The critical analysis of the location of those institutions within the educational sector envisaged by their founders played an important role. The diploma issued at the vocational academy should be equal to the degrees from universities and universities of applied science. This led to false expectations about the future career pathways of leavers from vocational academies and a kind of "image problem". Accompanying research had to interfere as a corrective and urge caution that vocational academies would only prove and save their identity if the higher education sector actually strived for differentiation (ZABECK 1975, 114; ZABECK/ZIMMERMANN 1995). Although not automatically a loved child of the higher education system of Germany, the success rate of the vocational academies is actually higher than that of the university: The "drop-out quota", i.e. the percentage of first-year students who fail to qualify, lies around

10%. Graduates in general are also seen to have good chances of finding a job. These integration effects were confirmed by the study of Zabeck & Zimmermann (1995): Both integration into the job and integration into the apprenticing firm are reported to be working well although unemployment rates are not significantly lower than among university and polytechnic graduates. Despite these undoubted advantages, the "system" keeps striving for parity with universities risking, also by a misleading official name, to be compared with institutions with a more scientific profile and to lose the status as a vocationally orientated institution (DEIßINGER 2006).

The contribution of pilot projects to the development of VET courses
In the German context, since the early 1970s various decisions and agreements of the federal government and the *Länder* consolidated the establishment of pilot projects (*Modellversuche*) as an instrument of VET policy. Educational policy and administrative authorities regard pilot projects as models of exemplary practice, supposed to be useful to legitimate, specify and substantiate intended innovations. Institutions undertaking pilot projects are responsible for providing basic evidence of the viability of the research objectives. Right from the start, the intended purpose of pilot projects was to transfer validated innovations into institutions of the educational sector. This transfer required to describe general frameworks and treatments of the modelled practice (KLEINSCHMITT/RATH/ZABECK 1981). Therefore pilot projects were generally accompanied by researchers although there were no standards for their acceptability or for applied methods. There was no doubt that pilot projects should be evaluated according to the underlying political objectives. As a consequence, the emerging term "evaluation" was adopted and the association was abetted that pilot project research should become orientated towards the principle of empirical social science (RHYN 2001, 186). Since this is not always the case pilot projects lack a common understanding of methodological standards (TRAMM/REINISCH 2003). In the context of policy, practice and science (TERHART 2003) there are researchers who claim successful results for themselves, although they should actually analyse these results from a critical distance (BECK 2003; SCHOLZ 1977).

There is no doubt that policy and practice of pilot projects have so far benefited a lot from the involvement of educationalists providing important target-oriented suggestions (PÄTZOLD 1995). Their involvement in the currently relevant debate on educational issues, their knowledge of historical and systematic interrelations and their ability to make problems transparent and develop respective solutions prevented many projects from an early failure. Researchers who accompany pilot projects (EULER 2003, 201) have to know that they change the initial conditions of the outcome irretrievably, which impairs new findings within the project. To avoid this it seems useful for the development of courses to draw a clear distinction between executive and responsible authorities. The so-called *Kollegschule Nordrhein Westfalen* (KULTUSMINISTERIUM NW 1972), which was established in the early 1970s, can be taken as an example opposed to this premise. In contrast with a system theory approach, policy and science have acted in mutual collusion, although it was never clear whether science was subordinated by policy or whether policy was directed by politicised science. At the beginning there was the political decision to establish comprehensive schools (1967) and linked to that was the decision to restructure the upper secondary stratum of the VET sector. The Ministry of Cultural Affairs established a "planning committee" to prepare the *Kollegstufe*. It created a framework and only within this framework the model should remain "open" (ibid., 13). The main issue, in consequence, was a double qualification embracing the general admission to higher education and at the same time a vocational qualification within a skilled occupation according to the Vocational Training Act (BLANKERTZ 1982). The ideological nature and the lacking practical relevance were obvious from the outset (ZABECK 1973, 31). Researchers involved in the planning actually did not assure through an anticipating evaluation and by applying profound knowledge that the political objectives could be achieved with the provided means. Furthermore, there was no clarification whether the integration of vocational qualifications into a school-based concept was in accordance with vocational training legislation. The project was bound to fail because illusions had not been removed from the outset.

It is only rarely that innovative approaches lead to fundamentally new concepts of VET courses. More often, partial revisions of established schemes lead to the development of pilot projects. They have to deal with two questions: The first one is when the pilot project finishes, the second one is how successfully achieved results can be implemented in a regular institutional context. If there is a significant deviation of the research results from the target the accompanying researchers should recommend to cancel the project and to abstain from changes. However, in many cases, specific premises determine pilot project research. The approach to improve the cooperation within the dual system through a "cooperation of learning sites" (*Lernortverbund*) can be taken as an example (EULER et al. 1999). In the background there is an understanding of VET that on- and off- the job training periods should be distributed between the learning sites according to their didactical appropriateness for each learning site. The theoretical basis of this pilot project is questionable, there are undesired side effects and the experience with the implementation has not been satisfactory so far (PÄTZOLD/WALDEN 1995; 1999).

Brandtstädter concludes that results from evaluation seldomly lead to a revision of decisions in educational policy (1990, 225). The critical suggestions resulting from the evaluation study on vocational academies mentioned above were not followed by consequences either (ZABECK 1996). Educational policy and administrative authorities obviously tend to carry through and stick to what they already have decided. Against this background, Rauner suggests a new definition of pilot projects as a research instrument: pilot projects should no longer legitimate, nationally secure, test or even initiate reforms. They should rather be an instrument of contribution and support in the realisation and implementation process created by political and administrative decisions (RAUNER 2003, 403). Only if pilot projects fit into the structures of the educational sector and accept what has already been decided they may be successfully integrated into innovations and are unlikely to fail due to lacking connections to policy or administrative authorities. Currently, the implementation of the concept of 'learning fields' (*Lernfeldkonzept*) developed by the Conference of Ministers of Education and Cultural Affairs seems to take place in the opposite, conventional way (RAUNER 2003, 406): The educational authorities claim that this innovation will be carried through administratively and pilot projects are only considered to underpin the innovation scientifically (BRUCHHÄUSER 2003, 501). If pilot project research followed this suggestion, it would contribute to research becoming merely a dependent tool of policy. Under these circumstances, pilot projects would certainly lose their critical function of evaluation in the context of the development of new VET courses or learning arrangements. Against this background, both distance-based evaluation research and pilot project research still have to look out for the conditions for successful innovations in the educational sector and at the same time have to clarify their theoretical and methodological premises (NICKOLAUS/GRÄSEL 2006).

Stichworte für das Register:

Dual system
Educational policy
Evaluation
Pilot project
System theory
VET courses
VET system
Vocational academies
Vocational schools

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