

OECD/CERI STUDY OF SYSTEMIC INNOVATION IN VET

Systemic Innovation in the German VET System Country Case Study Report

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TABLE OF CONTENTS

SYSTEMIC INNOVATION IN THE GERMAN VET SYSTEM: COUNTRY CASE STUDY REPORT 4

1. Introduction.....	4
1.1 The German VET system.....	5
1.2 Innovation in the German VET system.....	6
2. Case Study 1: The Innovation Circle in VET (<i>Innovationskreis Berufliche Bildung, IKBB</i>).....	8
2.1 Origins and background	8
2.2 The process of initiating/designing the innovation	9
2.3 Use of the knowledge base.....	12
2.4 Implementation.....	13
2.5 Monitoring and Evaluation.....	15
2.6 General discussion.....	16
2.7 Conclusions	18
3. Case Study 2: Skola/ Segel BS	19
3.1 Preliminary remarks	19
3.2 Origins and background	20
3.3 The process of initiating/designing the innovation	21
3.4 Use of the knowledge base.....	24
3.5 Implementation.....	25
3.6 Monitoring and evaluation	26
3.7 General discussion.....	27
3.8 Conclusions	28
4. General conclusions and recommendations.....	29
4.1 Involvement of stakeholders	29
4.2 Governance structure.....	30
4.3 Use of knowledge.....	30
5. Implications for the study of systemic innovation in VET	31
BIBLIOGRAPHY	34
ANNEX 1: LIST OF PARTICIPANTS	36
ANNEX 2: TEN GUIDELINES FOR THE MODERNISATION AND STRUCTURAL IMPROVEMENT OF VOCATIONAL EDUCATION AND TRAINING	38

SYSTEMIC INNOVATION IN THE GERMAN VET SYSTEM: COUNTRY CASE STUDY REPORT

1. Introduction

This is the fifth in a series of country reports prepared as part of the study on Systemic Innovation in Vocational Education and Training (VET) being conducted by CERI/OECD during 2007-08. It focuses on two recent case studies of systemic innovation in the German VET system and draws on: a) background information provided by German officials on the two case studies and b) meetings and interviews conducted during a visit to Germany that took place on 8-12 September 2008. The visiting team consisted of Hanne Shapiro, Head of the Business Unit Centre at the Danish Technological Institute, Berno Stoffel, Director of Research and Development, Swiss Federal Institute for Vocational Training and Education (SFIVET), and Katerina Ananiadou and Beñat Bilbao-Osorio from the OECD/CERI Secretariat. During their visit the team met with several stakeholders involved in the case studies of Systemic Innovation in VET. A complete list of participants is given in Annex 1.

The overall aim of the study is to examine systemic innovation in VET. The definition of systemic innovation adopted here is: *any kind of dynamic, system-wide change that is intended to add value to the educational processes and outcomes*. The aim is to analyse innovation systems and strategies in VET by bringing together evidence of the drivers for systemic innovation in six different countries.¹ All countries participating in the study have selected two or three cases studies of recent innovations in VET for in-depth analysis by the expert team. The following is a list of issues that the study focuses on in particular:

- How countries go about innovation.
- The processes involved; leadership and the relationships between the main actors.
- The knowledge base that is drawn on.
- The procedures and criteria for assessing progress and outcomes.

This introductory section provides a brief overview of the German VET system followed by a short description of the two case studies on innovation selected for the study. As these form the main focus of this report they are described and discussed in more depth in later sections of the report. The two cases were selected by German officials, in collaboration with the OECD/CERI Secretariat.

¹ Australia, Denmark, Germany, Hungary, Mexico and Switzerland.

1.1 The German VET system

Responsibility for Vocational Education and Training in Germany is divided between the Federal Government and the 16 regional state (*Länder*) governments. The Federal Government, specifically the Federal Ministry of Education and Research (BMBF), is responsible for non-school VET, that is training that takes place in companies. All school-based VET is the domain of the *Länder* governments, who are also responsible for all schools and education as far as qualifications can be acquired that are approved by the *Länder* governments. The Standing Conference of Ministers for Education and Cultural Affairs (KMK) is an important institution in this context as its aim is to harmonise education policies in the 16 *Länder*.

One important component of the German VET system is the *dual system* whereby trainees attend two places of learning, the part-time vocational school and the training company². These two partners share responsibility for vocational education and training: a company signs a training contract with a young trainee and assumes the responsibility for passing on the required training contents. In general, the company organises learning on three or four days per week on the basis of a training plan, which forms part of the training contract with the trainee. Training is therefore provided at the workplace, thus familiarising trainees with the technological and organisational aspects of the current work processes in companies. In addition, trainees contribute to the company's productivity during their training, thus reducing the overall cost of vocational training for the company and society at large. The training contract signed by the company and the trainee is based on general labour law and is subject to legal control by the competent agencies, usually the chambers. The contract covers the training period, training contents, conditions of termination of employment and the allowance paid to the trainee; in the case of the latter, the amount is determined by the applicable collective agreement. Training in the company is based on training regulations which are the responsibility of the Federal Government.

In addition to company training trainees generally attend a vocational school for two days per week or in block teaching (480 lessons per year), where they are mainly taught theoretical and practical knowledge, as well as courses on general subjects such as modern languages or social studies. Learning at part-time vocational schools is based on the framework curricula of the the KMK and those issued by the *Länder*.

The dual system aims to provide young people with a broad foundation of skills and competencies necessary for performing a skilled occupation in the changing world of work. Successful completion of an apprenticeship is a prerequisite for skilled employment in one of approximately 350 nationally recognised occupations requiring formal training ('training occupations'). The qualifications offered are regulated by a national system of training regulations, issued by the Federal Government, which govern workplace training, and framework curricula of the KMK and those issued by the *Länder* Ministries, which govern the training that occurs in the vocational school. The training occupations are developed with the needs of the world of work in mind by the Federal and *Länder* administrations in collaboration with the social partners.

² Denmark and Switzerland are the two other countries participating in the Systemic Innovation study that also have dual VET systems.

Dual training is a very popular choice for young people leaving compulsory education in Germany, despite a decrease in recent years in the number of training contracts available; in 2007 approximately 66% of German school leavers completed a course of vocational training in the dual system (Federal Ministry of Education and Research (2008)). In addition to dual training, vocational schools also offer full-time training programmes that lead to recognised qualifications. This training includes company placements and covers a period of two to three years. The *Länder* are solely responsible for this type of vocational training.

Financing of the dual training is largely provided by the training companies. After deducting the trainees' productive contribution it is estimated that the annual net cost to companies is approximately EUR 14.7 billion. In contrast, the *Länder*'s costs covering the whole VET sector are EUR 13.3 billion (Autorengruppe Bildungsberichterstattung, 2008), including 2.8 billion (Federal Ministry of Education and Research, 2007a) for teaching staff costs in part-time vocational schools (*Berufsschule*). The Federal Government also provides some funding through the Federal Employment Agency for individual projects for promoting VET, partly in order to reduce the number of early school leavers without an upper-secondary qualification. The programme 'Vocational qualification prospects' (*Perspektive Berufabschluss*) set up by the Federal Ministry is an example of such a project for disadvantaged young people.

1.2 Innovation in the German VET system

The two major challenges for the German education and employment system in the next few years are demographic changes and economic structural change (see Hippach-Schneider et al, 2007; Hippach-Schneider et al, 2008) and the German government sees the adequate supply of skilled workers as a priority in order to maintain growth and employment in the country. In this section we briefly outline issues related to these challenges as it is against this backdrop that innovations such as the ones considered in this report should be seen.

The dual VET system is a market-led system; as such it can be sensitive to general economic conditions with the number of training places available rising or falling dependent on conditions of the labour market. As the number of training places available had been decreasing since 1999 and a number of measures were taken by the Federal Government in order to improve the situation. One of these was the National Apprenticeship Pact, which was first signed between the Federal Government and the chambers of commerce and industry in 2004 for a term of three years. As the number of contracts signed increased in 2004 and over the following years, the Pact was extended by the Federal Government in March 2007. Another initiative that was launched with the aim of increasing the number of training places was JOBSTARTER (2006-2010), a programme that aimed at improving regional training structures and therefore the supply of training places (see www.jobstarter.de).

In addition to the adequate supply of training places, another challenge currently facing the German VET system is that of permeability (*Durchlässigkeit*), i.e. the ability of the system to allow for flexible pathways between programmes of study and into Higher Education and to allow for shorter periods of study at Higher Education for people already holding VET qualifications. The development of a National Qualifications Framework will help towards improving the permeability of the system. Other projects include the programme 'Further development of dual study programmes in higher education', and the project 'Counting vocational competences

towards programmes of higher education – ANKOM'. Both of these programmes were developed and implemented by the Federal Government.

Optimising transition processes for young people having difficulties continuing on to vocational training is another issue currently under debate and consideration in the German VET system. In this context, support for disadvantaged people is being developed as a component of VET, such as the 2008 launched programme 'Vocational qualification prospects' for increasing training opportunities for disadvantaged young people and second-chance qualifications for young adults. Another programme, 'Vocational orientation in inter-company and comparable training facilities' was set up to provide school pupils with vocational orientation at an early stage and to assist companies with recruitment of young skilled workers (for more information on these initiatives, see Hippach-Schneider et al, 2008).

The development of training regulations in emerging fields of activity, such as in bio- and nanotechnologies is another policy priority in VET where innovation is necessary. Although demand for skilled workers in these new sectors has recently increased, training in the context of the dual system has not developed at the same rate. The aim is therefore to create a new training culture and to develop job profiles in these emerging fields of activity.

Innovation in VET in Germany therefore needs to be seen in the context of the challenges outlined above and some of the policy measures launched recently are attempts at addressing them. All of these issues were to some degree considered and discussed by stakeholders involved in the two case studies that form the central focus of this report, so they are examined in more detail in later sections. At a systemic level, the two task forces, 'Innovation Circle on VET' and 'Innovation Circle on Continuing Education and Training', were specifically formed with the aim of coming up with innovative and concrete solutions for addressing these challenges and for improving and modernising the structures of VET. The former constitutes one of the two case studies discussed in detail in this report. In the last part of this introductory section we provide a brief description of both case studies.

As stated above, the first case study is that of the Innovation Circle on VET³ (*Innovationskreis berufliche Bildung*) established in April 2006. The aim of this initiative, taken by the Federal Minister of Education and Research, Dr Annette Schavan, was to improve the structures and interfaces of VET and to enable education policy to adapt to new demographic, economic, technological and international developments at an early stage. The members of the Innovation Circle were public figures with expertise in VET appointed personally by the Minister and not as representatives of their respective institutions. They met eight times over a period of one year and their work was supported by four thematic working groups who provided research and policy analysis in the form of working papers. The main outcome of the Innovation Circle's work was the issuing of *Ten Guidelines for the Modernisation and Structural Improvement of Vocational Education and Training in 2007*. The ten guidelines are listed in Annex 2.

The second case study was an example of innovation in teaching and learning at the level of VET schools, and therefore under the responsibility of the Länder. It consisted of the projects

³ The second Innovation Circle on continuing education and training (*Innovationskreis Weiterbildung*) that took place at about the same time is not discussed in this report.

Segel-bs and *Kool* implemented in the Land of North Rhine Westphalia as part of the wider SKOLA programme initiated and supported by the – now discontinued - *Bund-Länder* Commission for Educational Planning and Research Promotion. The overall aim of the project was to study the concept of self-regulated learning in the context of VET, advising VET practitioners on the successful implementation of self-regulated learning in practice and examining its effects. The scientific co-ordination of the whole SKOLA project was carried out by researchers at the Universities of St Gallen and Dortmund, while researchers from the University of Paderborn were responsible for the co-ordination and evaluation of *Segel-bs and Kool*.

2. Case Study 1: The Innovation Circle in VET (*Innovationskreis Berufliche Bildung, IKBB*)

2.1 Origins and background

As stated in the introduction, one of the main areas of concern in the German VET system is ensuring adequate training opportunities for all. This was the main aim of the Vocational Training Reform Act which came into force in April 2005 (Sondermann, 2005). According to some system actors, however, it did not sufficiently address likely future structural challenges in the VET system, such as the changing demographics that are already beginning to affect the Eastern *Länder* – see also Table 1. In the years to come, the pressures of changing demographics are likely to affect German society more widely and challenge the system to find new and sustainable ways to reduce the numbers of early school leavers and to improve the situation for groups of young people often not equipped with the right mix of skills from the outset to make a successful transition from compulsory school to VET.

Table 1. Projected Composition of the German Population

Age group	2005	2010	2020	2030
0-19	20.0%	18.3%	16.9%	16.6%
20-59	55.1%	55.4%	52.9%	47.6%
60+	24.9%	26.2%	30.2%	35.8%

Source: Federal Statistical Office, 11th Coordinated Population Forecast, 2006

In addition, it is anticipated that structural changes in the economy, with growth in the service sector and changes in demand for qualifications for new and emerging occupations, will also put pressure on the system – particularly in terms of improving permeability at all system levels, as demands for higher skills levels will most likely intensify. Permeability between all VET sub-components, as well as between VET and Higher Education, is a matter of growing concern, as it is considered an essential condition for ensuring that the German education and lifelong learning system can respond rapidly and efficiently to the needs of society as a whole. Like all dual VET systems, the German VET system is market-led. The number of apprenticeship places therefore depends heavily on the economic outlook for the country as a whole and is furthermore sensitive to structural changes between sectors. The Apprenticeship Pact concluded between the Federal Government and the social partners in 2004 was beginning to lead to an improvement in the number of training agreements made within the dual system, with a 4.7% annual increase from 2005 to 2006 and a further 8.6% from 2006 to 2007.

Nevertheless, a number of structural challenges in the VET system and between the different educational sectors remained. The Innovation Circle was therefore initiated within a duality of, on one hand, a German VET system that is nationally and globally recognised for the quality of its provision and the high levels of skills of the workforce trained within it, and, on the other hand, growing pressures to future-proof the system and to enable it to provide efficient transition pathways between the different sub-systems. Dr. Schavan, the new Federal Minister of Education and Research, personally took the leadership of the formation and work of the Innovation Circle. The underlying idea was to stimulate a new and forward-looking strategic dialogue and to bring views to the table on how to best maintain the known qualities of the German VET system whilst at the same time addressing from a system-wide perspective those areas where changes were needed. The initiative was launched in April 2006, approximately half a year after the new coalition government had taken office. The Innovation Circle was from the outset formed so as to create a high level strategic policy space to discuss freely measures to improve structures and interfaces of the vocational training system that would enable it to respond to medium term challenges. The Innovation Circle was given a timeframe of one year to ensure sufficient momentum and commitment from all participants; its final meeting was held in July 2007 and its main output, the *Ten Guidelines for the Modernisation and Structural Improvement of VET* issued shortly afterwards.

2.2 The process of initiating/designing the innovation

The Innovation Circle initiative can be considered and discussed from two different points of view in the context of a study on systemic innovation: i) the *process* of designing and implementing the initiative may be regarded as innovative and ii) the outputs and outcomes of the initiative are or can be seen as innovations themselves. In what follows we discuss both the process and the outcomes of the Innovation Circle as they both provide useful insights for the study of systemic innovation in German VET.

The tri-partite governance of the German VET system means that stakeholders meet quite regularly both at federal and *Länder* level to discuss and to reach consensus on day to day operational policy matters. The Innovation Circle was from the very outset quite different from this regular policy space in the way it was designed. The typical procedure in the German VET system governance is that each stakeholder selects a representative to bring forward their interests in a negotiation process; in contrast, participants in the Innovation Circle were appointed by the Minister as individuals with insights into different aspects of the VET system rather than as system representatives. Indirectly however, the Innovation Circle included representation of all system stakeholders at a very high level of formal influence. The Minister's aim was for the Innovation Circle to take a systemic view of the VET system through a broad definition of the discussion agenda with four main headings, rather than from the outset taking up very specific policy topics. Implicit in this design was the Minister's intent to spur a strategic and forward-looking debate beyond issues related to the acute challenges in the system, and through the debate to start a process of informing all involved in its governance of medium- and long-term challenges.

The Innovation Circle was chaired by the Minister and included representatives from the Federal Ministry of Labour and Social Affairs, the Ministry of Economics and Technology, the Federal Employment Agency, and the Federal Institute for Vocational Education (BIBB).

Furthermore, it included representation from the Standing Conference of the *Länder* Ministers of Education (KMK) and the Conference of *Länder* Ministers of Economic Affairs (WiMiKo). The Innovation Circle also included employers' representatives, part-time vocational school head teachers and researchers. In setting a definite final date for its work, the government's intention was to ensure focussed discussions and possibly also to evoke a shared sense of urgency in the overall work. Furthermore, given that the Innovation Circle drew on the input and time of persons with a high formal status, it was important to frame the work so as not to lose momentum through long and endless discussions. The 19 members of the Innovation Circle in addition to Minister Schavan met a total of eight times, under the chairmanship of the Federal Minister for Education and with the support of four thematic working groups (see the section on the **Use of the Knowledge Base**).

Although this was not the first time that such an *ad hoc* group or task force was set up directly by a Minister in order to address a particular policy issue, the design of the Innovation Circle included innovative elements, such as the fact that members were appointed in a personal rather than institutional capacity in order to foster debate free from institutional interests. However, several stakeholders pointed out to us during their interviews that such 'unbiased' points of view were not always possible during the debates, particularly since stakeholders knew each other and the points of view they each represented rather well.

In the remainder of this sub-section we examine the issues that formed the basis of the debate in the Innovation Circle as they were the challenges that triggered the initiative but also formed the basis of many of its outcome measures.

Interviewed stakeholders were of the opinion that the Innovation Circle instigated a broad discussion on several structural challenges of the German VET system, such as questions on the supply and demand of training places and debates on the types of initiatives that could spur the creation of more training places. In light of changing demographics, there is a growing concern about the system's capacity to ensure transition of young people who do not enter the VET or other upper secondary systems following compulsory school. Early school leavers who do not finish compulsory school with a certificate are at high risk in terms of obtaining qualifications and ultimately successfully entering the labour market.

Another group of concern is that of 'repeat' applicants (*Altbewerber/innen*), i.e. applicants who cannot find a training place and are therefore carried over into the next placement year. The number of these applicants has grown steadily in recent years and the chances of getting a training contract diminish the longer young people look for a training place. Across the 16 *Länder* there are already numerous initiatives in place for young people not immediately ready to enter the upper secondary VET system and for carry-over applicants. This issue of transition is particularly complex, as there is no means of getting an overview of initiatives across *Länder*, or on the overall expenditure, efficiency and impact of these initiatives. One of the aims of the Innovation Circle was therefore to enable a deeper understanding of the effects and efficiency of transition measures as a means of obtaining a formal qualification and improving employability.

The lack of permeability in the system as a whole is according to several sources a challenge. Even within the dual system itself students who for one reason or another wish to change programmes have to start from scratch, as there are approximately 350 different occupational

programmes. According to several of our interviewees, proposals to cluster occupations within the system to enhance flexibility within families of occupations led to quite intense and inconclusive discussions. The questions of permeability between full-time school-based vocational programmes and the labour market were also addressed; according to one participant data show that students who come from a full-time school-based VET programme typically experience more difficulties in their first transition to the labour market compared to students from the dual system although these differences disappear after a few years in employment. Finally, discussions also dealt with barriers to transition from the VET system into higher education for gifted students who want to obtain a dual qualification or for students who have completed a VET qualification and want to continue into higher education at a university or a university of applied sciences (*Fachhochschule*), and challenges concerning recognition of equivalence of VET professions at the highest level of qualification level with general university studies. Input from working groups showed that there are many barriers to permeability between VET and higher education, and the 16 *Länder* and individual institutions may adopt quite different approaches, both because regulations will differ between the *Länder* but also because institutional practices will often vary.

In some areas of discussion there were major disagreements, for example around the issue of modularity of the VET system. Some of the participants – particularly employers - argued that modularisation could be a means for young people without sufficient initial qualification to succeed in making the transition into either a full time vocational pathway or into the dual system. According to one of our interviewees, an employer representative, currently about 20% of a youth cohort cannot or do not continue in a vocational pathway because they leave school with basic qualifications that are too low and do not meet adequate standards of academic and social skills. The issue has been debated for at least ten years. Many measures are in place under the governance of the individual *Länder*, but there seems to be no coherent way of knowing which measures work best and for whom. Union representatives on the other hand argued that modularisation could be a first step towards introducing partial qualifications, which risk seriously damaging the quality and reputation of the dual system. In their view, short programmes risk leaving students with insufficient core professionalism (*Fachlichkeit*) and partial qualifications could impede individuals' transition into the labour market, because students would obtain a qualification basis that from the start would be too narrow in scope. They argue that better personalised support and counselling measures, starting during compulsory school, would provide a more sustainable way forward.⁴ The unions' view was that transition obstacles would diminish if the number of training places increased. To encourage this, a Danish model proposal was put forward, according to which a statutory levy-grant system would redistribute part of the training costs to employers who do not provide training but who stand to benefit from a higher stock of skilled labour. This particular proposal from the unions was not taken any further in the debate. Employer representatives saw it as far too radical, as in their view they already carry a substantial part of the training costs in the dual system.

4 For a further discussion of youth transition in Europe see (OECD 2006), *Starting Well or Losing their Way? The Position of Youth in the Labour Market in OECD Countries* Quintini, G. and Martin, S, DELSA/ELSA/WD/SEM(2006)8, available at www.oecd.org/dataoecd/0/30/37805131.pdf.

The topic of modularisation is an example of how long and intense discussion led to somewhat changed positions among the stakeholders. Partly on the basis of an academic paper fed into the relevant working group's discussion, a level of consensus was gradually reached that modularisation could be tested under particular circumstances for at risk groups. For the time being it appears that modularisation is not being discussed in terms of the ordinary dual system, possibly because the outcomes of the debate about the national qualification framework and modularisation for special target groups are pending. The discussions about modularisation however have been influential in initiating a pilot project for young people who for different reasons have not gained access to the ordinary VET system. The aim is to test if a modular, competence-based curriculum structure applied to some occupations can be a transition path for these young people into either the dual system or the full-time school-based vocational system. Modules validated with an examination against nationally recognised standards could allow an individual to return to education to complete a qualification in the continuing education system.

2.3 Use of the knowledge base

The question of how to ensure an adequate and sufficient flow of information during the process of policy reform and innovation is extremely challenging. There are questions concerning who is considered qualified and reliable enough to provide the information, and the types of information which are considered useful and relevant to decision makers. The role of different knowledge sources (e.g., formal/academic, semi-formal, popular/media knowledge, general tacit knowledge) in identifying and developing innovation policy is an essential component to the understanding of the processes underlying systemic innovation.

The decision to set up the process of the Innovation Circle was primarily a political one taken by Minister Schavan as explained above who as, relatively new in office, was keen to start a fresh debate on the main issues of concern in the VET system at the time. The initiation of the process was not therefore based on a body of formal knowledge or evidence, although similar ad hoc groups, with a remit to address specific issues over a limited period of time, had operated in the past and this may have informed to some extent the design of this particular initiative. The rest of this section therefore examines the use of knowledge in informing the substantive issues that were discussed by the Innovation Circle members and its working groups.

Prior to the formation of the Innovation Circle government officials had studied recent innovations in the Swiss and Austrian dual systems and this knowledge fed in an informal way into the papers prepared for the Innovation Circle. Experiences from Denmark concerning structural means for creating more training places in the dual system through a collective employers fund were discarded very early in the process as being too radical for the German context at the time.

In view of the relatively short mandate of the Innovation Circle and the comprehensive approach taken, the Federal Ministry of Education and Research set up four working groups with participation of stakeholders from the social partners, VET practitioners and researchers. The four thematic working groups were intended as a resource base for the Innovation Circle. In each of the four working groups a government official would typically be responsible for drafting documents and collecting basic data sources as input to the thematic discussions in the working group. The aim of the working papers was therefore to provide a broad framework and basic

findings to kick off discussions in the four thematic working groups. The outcomes of these discussions within the working groups fed into the discussions of the Innovation Circle. The four working groups covered the following themes:

- Modernisation and greater flexibility
- Transfer opportunities
- Transfer management
- European openness

Interactions within the working groups occurred at many levels, formally within the groups themselves but also in informal exchanges between members to test out ideas and positions on a certain topic. In certain instances there were also informal *ad hoc* groups providing additional arguments or data, drawing both on formal research and informal knowledge. Through this process of intense debate and consultation, the background reports prepared by the working groups were gradually shaped and provided a structure for the debates in the Innovation Circle. Through these debates and feedback mechanisms between the different organisation levels- the Innovation Circle and the four working groups - the content and positions gradually took form in a consultative and consensus-building manner as the discussions in the Innovation Circle progressed. The reports of the four groups provided the basis for the final publication of the work of the Innovation Circle. Possibly because of the consensus model that characterises VET policy-making in Germany, there were limitations on how far some topics were taken in the final report of the Innovation Circle. According to one interviewee, the final Ministerial report, *The Ten Guidelines for the Modernisation and Structural Improvement of Vocational Education and Training*, did not reflect the analytical depth of the background reports prepared in the four thematic working groups. An example given is that the richness of the analysis of the entire transition system is not fully reflected in the report of the Ten Guidelines. Some participants felt that modularisation should have been dealt with in more depth than in the final document.

2.4 Implementation

The discussion in this section focuses both on implementing the Innovation Circle itself as well as that of implementing its outcomes i.e. the Ten Guidelines referred to above (see also Annex 2).

Many government officials were from the outset aware that the Innovation Circle initiative could be risky in the way individuals were appointed and in the way the discourse was introduced and shaped outside the traditional day-to-day governance mechanisms. The same government officials and other participants in the process conclude that the initiative was an important step forward in that it has led to a more open discourse as a result of the appointment of individuals in a personal capacity, as positions of the institutional representatives prior to the initiative were otherwise quite fixed. Some sources also believe that the Innovation Circle can potentially instigate and legitimize change as the different system actors now share a common and agreed reference framework in the ten guidelines of the Innovation Circle. According to some sources, the process and the outcomes of the Innovation Circle may also serve a legitimising purpose for future agenda-setting, central in a multi-actor consensus-based system.

An example of this can be seen in the Education Summit due to take place in Dresden in October 2008, chaired by Chancellor Merkel. Some of the topics from the Innovation Circle will be on the agenda. One of the topics on the agenda, which was also a theme in the work of the Innovation Circle, will be the reduction of the number of school leavers without qualifications. On this theme the *Länder* have made a commitment to reduce the number of early school leavers by 50% by 2015.

The outcomes of the Innovation Circle were presented in July 2007 in a final report published by the Federal Ministry of Education and Research. The report broadly discusses the four themes: modernisation and flexibility, transfer opportunities, transfer management, and European openness - topics which from the outset shaped the agenda for the discussions in the Innovation Circle and the four working groups. The report concludes with ten guidelines intended to inform future policies and practices of all involved actors⁵. In that sense the mode of communication and the language used in the report strongly reflects the German model for development of the VET system through consensus-shaping mechanisms. Yet several interviewees confirmed that the formation of the Innovation Circle in some areas provided a framework for taking up and testing positions on topics such as modularity which had previously not been debatable within the ordinary VET governance framework. Concerning the thematic field of modernisation, the report concludes that the VET system should remain organised as a dual system based on the “vocational principle” and with final standardised examinations. Some stakeholders interviewed see the main value of the process in testing how far certain topics could be taken - and that this is mirrored in the overall content and consensus-like formulations in the final report.

One example of the way guidelines are being implemented can be seen in all those that refer to measures for improving transition from school to vocational education and into an occupation. A pilot project currently carried out targets the group of young people who have not managed the transition from compulsory school into VET. As part of this pilot 14 occupations have been broken down into training modules (*Ausbildungsbausteine*). Students can pass the chambers examination in a step-by-step manner and the credit they receive improves their chance of getting a regular apprentice place or entering full time school-based training. This also provides the target groups with a better base to enter regular employment with the option of later returning to continuing education and training based on the credits already awarded. The training modules are also intended to help unplaced applicants from previous years, an estimated 300,000 persons, to move into regular dual training on the basis of recognition of already acquired qualifications. If carefully monitored and discussed under implementation, such an initiative could lead to innovation.⁶ However, as discussed above, unions are still concerned that these measures can lead to lower partial qualification levels with negative impacts on salary and employability perspectives as demands to qualification levels are rapidly growing. Therefore, process and impact evaluation is central to wider uptake. Some employer representatives have argued that this is a positive alternative to having no qualifications at all beyond compulsory school.

5 The ten guidelines are listed in Annex 2. See also Federal Ministry of Education and Research (2007).

6 For a further discussion on transition challenges: see Quintini, G. et al (2007). The Changing Nature of the School-to-Work Transition Process in OECD Countries. Institute for the Study of Labour, Germany. IZA DP No. 2582. <http://ftp.iza.org/dp2582.pdf>

Another theme discussed in the Innovation Circle was the clustering of occupations to ensure more flexibility and permeability between occupations with overlapping competences. A BIBB study from 2007⁷ examined current training patterns in the dual vocational training system, finding that the focus of in-company vocational training is no longer on the manufacturing industry but in the service sector. Approximately two thirds of all trainees undergo training in this sector. By comparison, in 1980 the private service sector accounted for only 38% of all training places, while the public and non-profit sectors together were responsible for 11%. The results of the study could indicate that there are a number of occupations which could be clustered to create more flexibility and permeability horizontally in the system, with the first part of the qualifications within a cluster structured around the same competence-based curriculum, and specialisations into specific occupations introduced at a later stage. According to BIBB researchers there are about 100 occupations, typically old crafts, which are not suited to clustering. They represent a relatively small share of overall employment, but play a central role in maintaining old crafts traditions, such as for example the occupation of violin builder. Employer representatives from these occupations have negative views on clustering attempts, as they are concerned that such measures could be the first step in the disappearance of a number of the old traditional trades. Primarily through the relevant chambers which represent these crafts, the small occupations try to put pressure on policy makers to prevent the clustering of occupations.

Another guideline (No 5) addresses the structural mismatch between supply and demand of training places in the dual system. In line with the Apprenticeship Pact of 2004 this guideline urges more companies to undertake the training of apprentices, pointing out that it will be of direct benefit to them by ensuring a sufficient number of skilled workers in the medium term. The JOBSTARTER programme of the Federal Ministry of Education and Research provides a framework directly linked to this guideline but was in operation prior to the Recommendations of the Innovation Circle. For the period 2005-2010 the federal government has allocated EUR 125 million matched by funding from European Social Funds. The initiative offers special funding mechanisms for mobilising training places in companies and for financing additional training places. The programme aims at a better regional supply of in-company training places for young people by motivating companies to provide training. The programme is designed to take into account specific patterns regarding regional and changing demand for training. As a follow up to the Innovation Circle, more focus will be given to creating training places especially in newly started companies and SMEs.⁸

2.5 Monitoring and Evaluation

There was no formal monitoring or evaluation of the process of the Innovation Circle as such nor are there any plans for evaluating it in the future. There were of course informal views held by stakeholders on how smoothly it operated or the extent to which it achieved its intended aims. These opinions were rather mixed, particularly as expressed by members of the working groups. Several stakeholders expressed the view that the outcomes of the Innovation Circle did not bring any new topics into the debate. However, most stakeholders recognise that the model and organisation of the Innovation Circle made it possible for them to engage in discussions as

7 <http://www.bibb.de/en/31266.htm>

8 http://www.bmbf.de/pub/jobstarter_regional_3-2007.pdf

individuals, rather than as system representatives. In this way the Innovation Circle induced debates on sensitive topics which were previously not addressed at such a high level. A major concern expressed by several participants is that the Federal Government and other involved stakeholders have not so far developed and/ or communicated a common framework for implementing the guidelines or for evaluating and monitoring progress, whereas others pointed out that the governance structure and divisions of responsibilities makes such a task quite complex if not impossible. Other stakeholders thought that stronger leadership during the debates in the Innovation Circle and in the working groups might have moved some of the main issues further.

Turning to the outcomes of the Innovation Circle, at the time of the visit most interviewed stakeholders did not know whether the ten guidelines would be followed by action plans or by an evaluation framework which could track progress and put together a body of evidence on which future policies could build. Some stakeholders argued that the governance structure would make it very difficult to find a coherent framework for such a set up unless the 16 *Länder* come to a joint agreement on how to measure progress. However, several participants believed that such a joint measure is highly unlikely as they perceive cooperation between *Länder* as *ad-hoc*, tied to specific programme designs, and most often also with a certain degree of competition between the *Länder*. Even though a joint approach to evaluation was not implemented immediately after the finalisation of the Innovation Circle, there are still benefits to be gained if all relevant stakeholders agree on an evaluation, because it would then be possible to take into account some of the questions and the criticisms that were raised during the Innovation Circle and immediately after. Furthermore, a common evaluation framework can be designed to take into account overall themes of joint interest as well as *Länder*-specific topics. Whatever decisions are taken, an evaluation should not be introduced at such a late stage so as to risk being perceived as primarily a rationalisation of the Innovation Circle initiative.

2.6 General discussion

The design of the Innovation Circle permitted the creation of a defined stage and space for a forward looking dialogue, potentially free of vested interests due to the personal appointment of the participants. By defining the work of the Innovation Circle as occurring within a limited period of time, impetus was given to maintaining focus and creating results. Furthermore, Innovation Circle activities built on a knowledge platform with an international orientation by including experiences of different reform aspects in other dual systems of relevance to the German context.

The Innovation Circle had a dual structure: On one hand, there was the group of individually appointed, high-level participants with expertise in VET, and, in parallel, there were four working groups with representation of all the main stakeholders. A working model was therefore developed which was not grounded in political interests, but at the same time allowed consensus-shaping mechanisms to come into play through the four thematic working groups and their iterations with members from the Innovation Circle and through informal sub-groups which consulted with the members of the thematic working groups on institutional interests.

In our view the Innovation Circle functioned in many ways as a discussion space for testing how far particular actors would be prepared to go on specific topics. It also provided the opportunity to start discussions on very sensitive policy issues such as modularisation and

clustering of occupations, which would most likely not have occurred with the same speed and intensity in daily policy settings. There is a shared perception amongst most participants that the Innovation Circle to some extent permitted the creation of an additional discussion space so that all stakeholders now have a better understanding of the different viewpoints and of how far particular topics may be taken within the ordinary governance mechanisms in the time to come.

There are a number of factors which may explain why the Innovation Circle has a number of promising features but as yet cannot be characterised as a motor and shared platform for systemic innovation.

The Innovation Circle was from the outset based on the involvement of individuals with deep insights into the German VET system, but not necessarily into the socio-economic structural changes which in the medium-term could place substantial pressure on the system. Because members of the Innovation Circle were mostly drawn from within the German VET system and have strong beliefs in its quality, the voice for structural change might not have been sufficiently strong to reach the attention of all participants. In order to avoid reform fatigue it is essential that communication to the broader public find ways to demonstrate early indications of these structural changes as a precondition for developing open mindsets ready for systemic change at all levels of governance in the German VET system.

An issue that could prove critical to any follow-up actions is the fact that some participants in the working groups believe that some decisions concerning the inclusion of particular views in the final joint document of the Innovation Circle were not transparent and a true reflection of the discussions that took place. Whether right or wrong, such perceptions could limit the motivation of individuals to participate in the dissemination of the ten guidelines or in future expert groups.

Some interviewees indicated that knowledge and uptake of the guidelines in daily practice and policy orientation are not at the level that could be hoped for among all relevant actors. Our view is that this is so for two reasons: i) the difficulty in achieving implementation of plans on the ground given the education system's governance dual structure (federal vs. *Länder*) and ii) the fact that the guidelines as such are too general and broad in content to allow for obvious and direct action plans on the ground by practitioners either at schools or in companies. It is therefore in the interest of all stakeholders that participated in the Innovation Circle to develop jointly a communication plan targeted to different audiences in order to stimulate the implementation of the guidelines with a view to installing a futures orientation and openness in the VET system. Parallel to a communication plan, it is critical that urgent joint actions be taken by the *Länder* representatives and the federal government to define a common methodology whereby promising practices on permeability can be identified, documented, and disseminated through different fora and to different target groups, both among practitioners and policy makers. Measures are needed to ensure that permeability, so critical to the efficiency of the German VET system and the education system as a whole, be addressed in a systemic manner based on bottom-up best practices and hopefully enabled by the current processes of developing a national qualification framework. Localised pockets of innovation, such as the projects at *Länder* level discussed in the next section of the report, though of high value to the immediate participants, are likely to have very little impact on overall system change.

The members of the Innovation Circle, personally appointed by the Federal Minister for Education and Research, were individuals with expertise in the field of education and training. This decision has its merits, but it also holds the risk of discussions having an educationalist and therefore internal perspective on change rather than also taking an external view on the VET system and its future role in the broader innovation ecology. Members with an external perspective on education could have functioned as “devil’s advocate”, addressing the critical and not yet imagined challenges to the German VET system of tomorrow. Experiences from the OECD CERI project *Schooling for Tomorrow* show that such approaches can stimulate forward looking systemic change (see OECD 2006).

As stated by some of the participants in the Innovation Circle, there is no overall view of the content and effect of transition measures and there is a perception that there is a substantial overlap among many initiatives with the risk of inefficiency in funding expenditure. Given the autonomy of the individual *Länder* in transition matters, the topic is difficult to address in a comprehensive manner. The visit did, however, show some openness among relevant actors towards addressing transition initiatives and their actual impact within overall discussions of system permeability, even if the same actors also recognised that it would be a challenging and difficult process because there were so many different interests and positions between the sixteen *Länder*.

One main difficulty in the implementation of the outcomes of the Innovation Circle is that in essence the federal government does not have a political mandate due to the Constitutional Governance Regulations which set a clear division of roles and responsibilities between the federal government, the *Länder*, and the social partners at federal and *Länder* level.

Furthermore, any action plan formulated will most likely involve both top-down measures to set the medium-term strategic direction, and bottom-up measures to explore and to build up capacity for systemic innovation in a governance structure such as the German VET system. The most recent constitutional reform may have led to a clear definition of the roles of the different actors at the federal and the *Länder* level, but it has according to several stakeholders led to a situation where there is no longer a platform for taking system-wide decisions on reform in the VET system due to the actors' clearly defined roles and autonomy in specific fields.

2.7 Conclusions

To sum up, the design of the Innovation Circle showed a certain amount of courage by making a clear break with traditions of policy making that typically grow out of public pressures to solve problems of immediate concern. From the point of view of policy makers, the ability to take immediate action is often perceived to improve chances of re-election. From the point of view of voters, topics which are not of immediate concern may often gain little attention in the public discourse - with the possible exceptions of environment and climate. An example is the projected changing demographics. Though quite often a topic in the policy debate, the pressures from changing demographics have not yet fully come into force. In the very design of the Innovation Circle the Minister and the ministerial officials had to struggle and find a balance to evoke a sense of urgency on future oriented topics, where decisions taken now could affect the relevance and the efficiency of the German VET system of tomorrow.

From the outset the Innovation Circle was an innovative approach to policy making by opening a dialogue on plausible future developments in Germany with systemic impact on the VET system, but risky insofar that consensus on coming transformational change in the German VET system would strongly depend on the extent to which a sense of future urgency could be conjured up and shared among all participants at a very early stage in the dialogue. With hindsight and based on the evidence provided, some complex topics were brought into an open discourse for the first time - such as the topic of modularisation and transfer, but no consensus was reached during the Innovation Circle process. However, a pilot project currently carried out with focus on the group of young people who have not managed the transition from compulsory school into VET could be seen as an example of how the processes in Innovation Circle have opened the doors to system change.

At the dissolution of the BLK, the Federal Government launched a five-year funding programme, known as *compensation funding*, intended to finance projects already running under the BLK initiative. This offers a window of opportunity for targeting funding strategically and with a medium to long term orientation aligned to the guidelines of the Innovation Circle. As such the new round of funding measures could be a means of inducing systemic innovation and for sharing and disseminating both successes and failures. This will call for clear evaluation guidelines and policy coordination between the federal and *Länder* level representatives beyond the current structures of governance.

Overall, there is therefore some evidence that the Innovation Circle has driven the initiation of pilot tests in certain areas not previously addressed – but in our view the changes that have occurred so far cannot be characterised as systemic innovation, though policy intentions were to take a future-oriented systemic view on the German VET system as a whole.

3. Case Study 2: Skola/ Segel BS

3.1 Preliminary remarks

The second case study was submitted as an example of innovation at the level of the *Länder*. As explained in the introductory section of this report, the German Constitution, known as *Grundgesetz* (basic law), divides the exercise of governmental powers between the Federal Government and the *Länder*. The school part of the VET System is under the responsibility of the *Länder* and training in firms is under the responsibility of the Federal Government. The core element of this status is the so-called cultural sovereignty (*Kulturhoheit*), i.e. the predominant responsibility of the *Länder* for education, science and culture. This means in principle that each *Land* has responsibility for its educational and cultural policy, with the proviso that, in accordance with the federalist principle, they show the historical, geographical, cultural and socio-political aspects specific to their *Land* and thus to diversity and competition in the education system and in the field of culture. On the other hand, the constituent states of the federation bear joint responsibility for the entire State. This overall responsibility both entitles and obliges them to cooperate with one another and to work together with the Federal Government. Education, cultural legislation and administration of these matters are therefore primarily the responsibility of the *Länder*. For these reasons all innovations in schools are initiated by *Länder* laws or regulations.

The team visited the *Friedrich-List Berufskolleg* and the *Glasfachschule Rheinbach* and they both provided good examples of institutions coming up with innovative solutions dealing with the challenges of transition, permeability, and integration of young people with special needs. The schools operate within a very tight network of relevant economic and social institutions (firms, social institutions, psychologists, labour offices etc.) and are proving to be a good knowledge base of the present and future challenges (economic structures, situation of immigrants etc.) young people are likely to encounter.

From a systemic point of view this is only possible through the degree of autonomy given to schools and training institutions. Schools thus have the possibility to exploit this independence and to work in innovative ways.

In addition to visiting the schools, the team also had the opportunity to meet with representatives of different projects, such as the school autonomy project in Hessen and AnKom, a Federal initiative on recognition of prior learning on higher education programmes.

This part of the report focuses on the SKOLA programme and in particular on the *Segel-bs* project. We consider the *Segel-bs* project as summing up the ideas, objectives and models of the SKOLA programme.

3.2 Origins and background

The *Segel-bs* and *Kool* projects are both part of the pilot programme SKOLA of the *Bund-Länder* Commission for Educational Planning and Research Promotion (BLK) supported by the Federal Ministry of Education and Research and the participating *Länder*. As the Constitution reform in 2006 eliminated all overlapping structures between the Federation and the *Länder*, this commission has now been discontinued. All promotion of innovation and research programmes is now under the responsibility of each *Land* and the Federal Government has no power to encourage cooperation between the *Länder* on school-based projects..

The SKOLA programme was initiated by Prof. Euler (University of St. Gallen) and Prof. Pätzold (University of Dortmund). It was established by the steering committee of the BLK in 2004, started on 1 January 2005 and is due to finish on 31 December 2008. It includes 21 three-year long projects. The following *Länder* are participating: Baden-Wuerttemberg, Bavaria, Berlin, Brandenburg, Bremen, Hamburg, Hesse, North Rhine-Westfalia, Rhineland-Palatinate, Saarland, Saxony and Thuringia. The Federal Ministry of Education and Research (BMBF) and the *Länder* each provided 50% of the funding.

SKOLA, which stands for “*Selbst gesteuertes und kooperatives Lernen in der beruflichen Erstausbildung*“ (Self-organised and cooperative learning in basic VET) has the following overall aims:

- The further development, testing and evaluation of didactic concepts for the promotion of self-regulated and cooperative learning;
- The use of the didactic potential of modern information and telecommunication technologies in the dual system of VET;

- To contribute practice-oriented solutions for establishing a modern learning culture and organisation and for strengthening self-regulated and cooperative learning in the dual VET system.

The programme achieves these aims by focusing on three different levels:

1. Level of education: self-learning and team competencies are promoted by suitable micro- and macro-didactic concepts and learning arrangements with extensive participation of the apprentices, such as integration of e-learning in lessons, courses or curricula, and fostering of social learning.
2. Teacher training and further training: Self-organisation and cooperative acting must be theoretically established in the teacher training and further training; it must be tested in lessons and experienced in concrete teaching situations.
3. School organisation and culture: Schools are required to implement self-organized and cooperative learning in their organisation. This has to be flexible enough to respond to learning needs

The projects and models were structured around six main themes:

1. Promotion of self-organised learning in basic VET
2. Promotion of cooperative learning in basic VET
3. Promotion of eLearning to be integrated in self-organised and cooperative learning situations
4. Competence training of teachers: further training
5. Fostering organisational structures in schools dealing with quality
6. Dissemination activities between the different pilot projects

Dissemination activities to practitioners were introduced from the beginning of the project. Reliable documentation and a transfer-oriented preparation of the results were defined as a basis for transferability. Wide dissemination of the results, including personnel- and organisation-centered measures, was planned.

3.3 The process of initiating/designing the innovation

The initiative to apply for the SKOLA programme in North Rhine Westfalia came from the academic world. Prof. Peter F. E. Sloane, professor in business and human resource education, and his research team at the University of Paderborn asked the Ministry of North Rhine Westfalia

to participate in the programme and submitted the project *Segel-bs*⁹. The Ministry agreed under the condition of finding a second region with whom to work. A new partner was found in Bavaria.

The project was based on the following assumptions:

- In today's professional life personal and communication skills are as important as professional competencies.
- Self organised and cooperative learning are fundamental in fostering personal competencies.
- Apprentices must be able to carry out tasks and solve problems in a goal-oriented and independent manner.
- Intervention in schools must focus on the transmission of necessary abilities taught in a new learning culture that strengthens autonomous learning, self-motivation, self-responsibility and cooperative learning.
- Due to the high degree of complexity when changing the learning culture it is important to apply this objective from the beginning of the training.

When considering the choice of the professional field in which the project was going to be applied several conditions had to be considered. The profession had to provide a large number of teachers and apprentices in order to enable an adequate study design with intervention and control groups. Training staff had to be open enough to change and to challenging their teaching and learning methods, to building up competence-oriented training courses and to working with learning fields. The professional field "commercial employee in the retail sector" fulfilled these conditions. The commercial field reform in 2006 and the new training regulations were therefore excellent opportunities to integrate and test the new methods of teaching/learning in respect to the following:

- Customer orientation
- Heterogeneity
- Process driven organisation
- Rapid changes in the management of stores

In light of this framework the project teams defined the following steps:

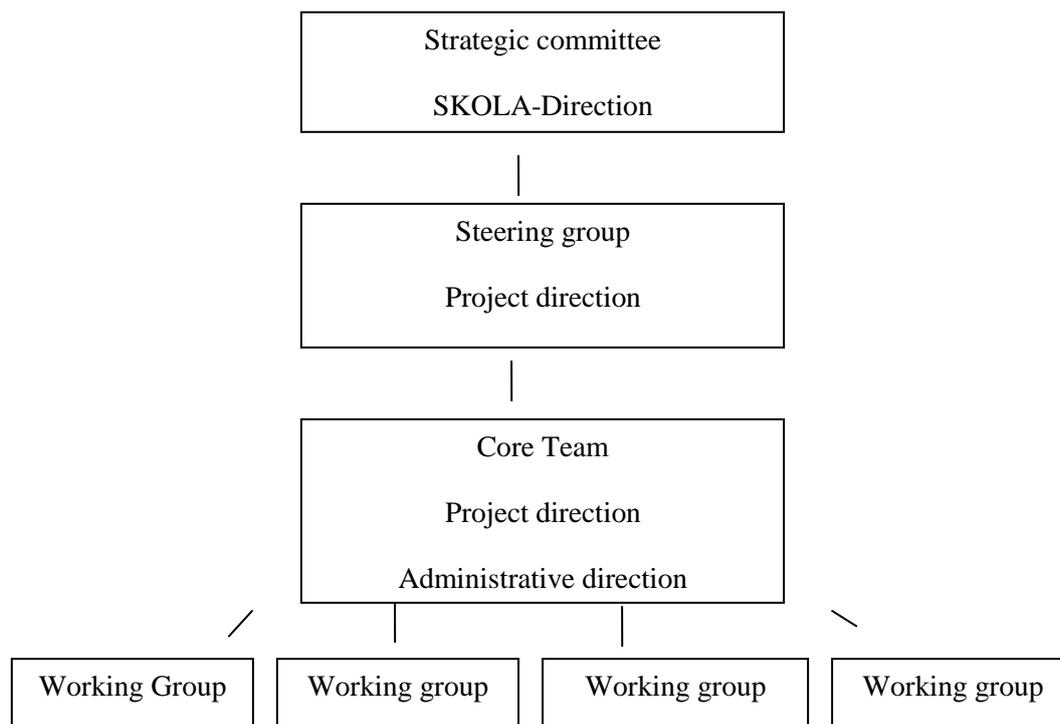
- Conceptual specification of self-regulated learning
- Analysis of the curriculum
- Development of a specific course curriculum

⁹ Segel-bs stands for "Selbstreguliertes Lernen in Lernfeldern der Berufsschule" (Self regulated learning in learning fields in the vocational school).

- Development, operationalisation and evaluation of learning scenarios with elements of self-regulated learning.

The organisational structure adopted integrated the different decision levels and was flexible enough to respond to the needs of the field. It is presented in Figure 1.

Figure 1: Organisation of the project *Segel-bs*



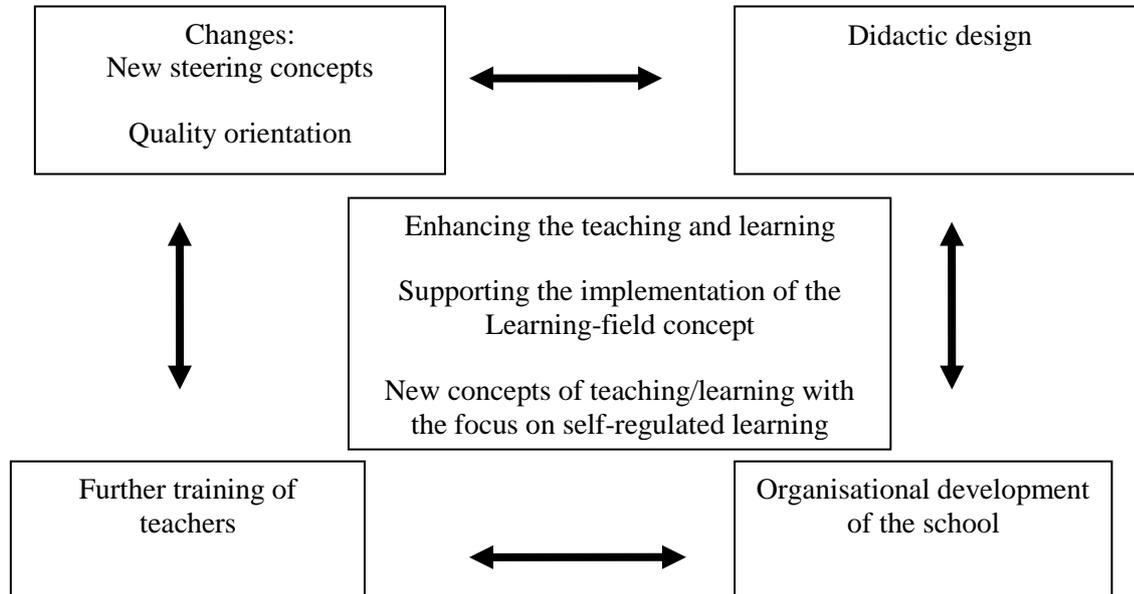
Reflecting the objectives and the framework of the SKOLA programme the *Segel-bs* project designed a model based around the following ideas (see also Figure 2):

Firstly, schools are facing several challenges today. Autonomy, new forms of management and growing political sensitivity regarding educational matters has led to professionalisation of the steering level. Competition between different educational systems and between schools has increased the requirement to measure the quality of teaching following strict criteria.

Secondly, teachers' sensitivity to change and the continuous need to update their competencies are crucial in promoting and integrating new forms of learning. A systematic innovation policy in teaching and learning is implemented into the organisational structure. The organisation must be flexible enough to integrate self-regulated learning at an organisational level as well. This implies changes in schedules, classroom equipment and arrangement and the compulsory presence at school.

Thirdly, self-regulated learning can only be implemented in face-to-face interactions between teachers and apprentices. Here the didactic dimension plays a major role.

Figure 2: Self-regulated learning model of Segel-bs



3.4 Use of the knowledge base

The SKOLA project was informed to a large extent by relevant academic research and literature on self-regulated learning. However, self-regulated learning is not a new topic in the field of education and educational psychology. In the last 30 years, self-regulated learning has become a recurrent focus for research and one of the essential axes of educational practice. Since Zimmermann and Schunks' 1989 publication "*Self-regulated learning and academic achievement: Theory, research and practice*" a great deal of research in self-regulated learning has been undertaken. In general, studies show that students who self-regulate show different characteristics from those who do not (Corno 2001, Weinstein Husman and Dierking 2000, Zimmermann 2002). Montalvo and Torres (2004) summarised the characteristics of those students as follows:

- They are familiar with and know how to use a series of cognitive strategies (repetition, elaboration and organisation), which help them to organise, elaborate and recover information.
- They know how to plan, control and direct their mental processes towards the achievement of goals (metacognition).
- They show a set of motivational beliefs and adaptive emotions such as high sense of academic self-efficiency, the adoption of learning goals, the development of positive emotions towards task as well as the capacity to control and modify these, adjusting them to the tasks and the learning situation.

- They plan and control the time and effort to be used on tasks and they know how to create and structure favourable learning situations.
- They make greater efforts to participate in the control and regulation of academic tasks, classroom climate and structure.
- They are able to maintain their concentration, effort and motivation while performing tasks and are able to put in a series of volitional strategies to avoid external and internal distraction.

In the last 20 years numerous theories and models have tried to identify processes intervening in the self-regulation of learning and to establish relations and interactions between these and academic performance (see for example Montalvo & Torres (2004). It is obvious that self-regulated learning has an enormous impact on the design of teaching and learning situations. In the context of VET in particular, teachers are urged to prepare more diverse students for the challenge of work and life beyond school; they try to provide more authentic instructional contexts and activities than in traditional knowledge-based curricula. In order to be successful, teachers must be reflective and analytical about their own beliefs and practices and they must acquire a deep understanding of cognitive and motivational principles of learning and teaching.

Despite the large amount of research available since the early 90's, self-regulated learning has not been systematically integrated either in VET schools or in companies. Research in other programmes has showed that a better coordination of the training activities at school and in the firm is important for learning success. The individual organisation of learning or self-regulated learning can be a major driver in fostering the learning process in dual training situations and more broadly lifelong learning.

3.5 Implementation

Different criteria were taken into account in choosing the schools for implementing the project. Firstly, the school had to provide a certain number of apprentices and to be offering training courses for commercial employees in retail business. Secondly, the school had to have had experience in projects dealing with innovation in teaching and learning. And thirdly, in order to respect the heterogeneity of the rural and urban communities each district in North Rhine Westfalia had to be represented by at least one school. A preselection of schools made by the project leader was submitted to the Ministry of North Rhine Westfalia for decision. Participating teachers received a two hour reduction on their weekly teaching load as partial compensation for the time they had to work on the project.

This top-down implementation required a very sensitive approach. After contacting the heads of the schools the project leader of *Segel-bis* organised a series of workshops with the teachers selected by the heads of the participating schools. During these workshops the project leader provided the opportunity to the teachers to talk about their teaching and organisational difficulties in their daily professional life. This exploratory phase was important for identifying the actual problems and crucial learning situations dealing with self-regulated learning. The researchers avoided implementing a research setting or a concrete and fixed model of self-regulated learning. Instead they tried to establish what was considered as self-regulated learning by the teachers and to build the research design on the teachers' experiences.

This open interaction was new to the teachers. They had to understand that the researchers were not trying to impose a way of going about their daily work when providing definitions or explaining concepts. As Barbara Dilger, researcher at the University of Paderborn mentioned: “We didn’t want to define what should be done, but we wanted to advise how it should be done”. At the beginning this unusual approach led to some tensions until the teachers accepted the role of the researchers.

Each school was free to adapt the project to its needs. Depending on their profile and on their specific context the schools were able to place more emphasis on the didactic or organisational development, on further teacher training or on changes currently relevant in their context. For some schools this project was also an opportunity for launching or systematising their strategic thinking and development.

Another challenging factor was potential resistance on the part of the teachers. It is well known that changes in consolidated and internalised teaching methods are very difficult to introduce. Shifting from an instructor view towards a learning adviser view where the learning process is under the apprentice’s own authority affects the teachers’ occupational identity. The teacher’s role can be seen as being reduced to that of a coach for apprentices, giving them advice solely in the case of problems in the learning process. The teacher is no longer considered as an expert with deep knowledge of his/her subject area. Such difficult changes need time and continuous drive. They cannot be simply addressed by workshops or further training courses but need a long term and well prepared and supported team building process with further support and coaching. This is what the project team tried to provide to participating teachers.

Once the project for each school was underway, teachers and researchers collaborated in the development of further training programmes for teachers and best practice models for school development. Extensive support was asked by the researchers for advice on methodological aspects such as the design of instruments and tools. Since existing diagnostic instruments on self-regulated learning such as MSLQ (Motivated strategies for Learning Questionnaire), LASSI (Learning and Study Strategies Inventory), LIST (Lernstrategien im Studium), KSI (Kieler Lernstrategien-Inventar), SRLIS (Self regulated learning interview schedule) were not specific enough to VET new ones had to be designed: Questionnaires for a structured self-description of the self-regulated learning situations (Paderborner Lerntableau), an instrument for the learners to analyse the different phases of the learning process (Lernreflektor) and observational grids for registering the self-regulated learning processes (Lehrer-Logbuch- Halbstrukturiertes Portfolio).

3.6 Monitoring and evaluation

Between September 2005 and September 2007 the head of the SKOLA programme organised four conferences for all project participants in order to share experiences between the different projects and between the researchers and practitioners as well as promoting transfer activities. A final conference for exchange of results with all participants is planned for November 2008. A thematic forum was introduced on the Internet platform www.blk-skola.de to discuss special topics and to up-/download materials.

During the operational phase, all SKOLA projects were required to report to the steering group every six months on their progress in terms of achievement of their specific goals as well as

on any changes in the projects. This report was used as a basis for an interview led by the SKOLA evaluators and a report providing feedback to each project.

Monitoring was organised around six thematic areas:

1. Development of teaching and learning
2. Dissemination of products and processes
3. Dissemination within the school
4. Dissemination to different school types
5. Dissemination to teachers
6. Dissemination to the scientific community

The SKOLA evaluators also had the possibility to change aspects or parts of the projects.

The close collaboration between the teams at the University and the working groups in the schools guaranteed a regular and intensive monitoring process. It was not the aim of the research team to introduce a classical monitoring system where only one institution fulfils this task. The monitoring of the *Segel-bs* project is a collaborative process: The teachers monitor more closely the grounding and content of the learning situations and curricula while the researchers are responsible for the monitoring of the scientific basis and future development of the didactic methods and instruments used.

Prof. Günter Pätzold (University of Dortmund) and Prof. Dieter Euler (University of St. Gallen) are responsible for the evaluation of all SKOLA projects. The team was not presented with an overall formal evaluation plan. The programme of the final meeting includes presentations of the results of the different SKOLA projects without any link to an overall evaluation process.

3.7 General discussion

One rather unexpected result of the intervention study in *Segel-bs* was that no changes were found in the self-reported self-concept of the learners, although teachers did report changes in their students' self-concepts. In addition, apprentices who followed the programme of self-regulated learning did not show any significant improvement in their academic achievement. However these results are not surprising if the multidimensional aspects of learning are taken into account. Learning involves cognitive, emotional, behavioral and contextual components. A one-year intervention of self-regulated learning can hardly be expected to affect all these different components.

Time is a very important dimension when schools and teachers are faced with innovations. The introductory phase involving sensibilisation to the goals of the project are key components for success and need to be dealt with very carefully. Once the project has effectively started all parties involved have to recognise that changes in the teaching and learning behaviour are not ongoing linear processes.

Positive effects were observed on the organisational and cooperative aspects of learning. Schools reacted differently in the ways they adapted their organisation to the didactic needs coming from the *Segel-bs* project. Open schools showed not only more flexibility in their adaptation of the organisation of space to the learning needs, but also in terms of team development. Project and team leaders were given more autonomy to change and design new organisational and management practices. Other schools needed more convincing to adjust their daily and termly timetables as well as the arrangements of the classrooms to the learning cycles of the apprentices.

All interviewees confirmed that teachers were willing to share their learning experiences, to talk about teaching failures and to discuss didactic topics in groups. In most schools where *Segel-bs* was implemented there was real motivation to work together in a more systematic manner.

3.8 Conclusions

Both *Kool* and *Segel-bs* are research driven projects with a good knowledge base. However, from a purely academic point of view neither the topic nor the research questions are new. It is the contextualisation and the application of the scientific findings which have innovative potential. The way the programme was designed, how it was applied to different professions, how eLearning was integrated and the interaction between research and practice are innovative features. The *Segel-bs* approach of integrating the practitioners in a very sensitive manner from the beginning is an excellent example of bringing knowledge into action and requires strong social and methodological skills to understand the different concerns and dynamics of practitioners.

From the point of view of systemic innovation one major critical issue will be the dissemination of the results and the transfer of good practices and outcomes to different schools, learning places and professional fields. On a middle- or long-term perspective dissemination of the results from the programmes and projects with such a high potential for change and innovation and with such a large resource and financial investment is quite important to maintain a sustainable innovation culture and stimulate innovation policies. In terms of dissemination in academic circles, *Kool* and *Segel-bs* have generated a good number of publications.¹⁰ However, there is currently no space or resources planned for practitioners to disseminate their experiences and findings from the projects, despite this being originally included in the project proposal.

In addition, we were not presented with a concept or model on how to scale up the experiences and the results of the projects and to transfer them to other parts of the school, or indeed to other schools, learning places or VET professions.

It is not clear to us if the structure of the SKOLA network has been exploited adequately to allow for a follow-up programme or other implementation policies. The discontinuation of the coordinating body (*Bund-Länder* Commission for Educational Planning and Research) will not encourage either collaboration between *Länder* or between the Federal Government and the *Länder*. This lack of collaboration makes it difficult to obtain an overview of innovative projects and the sharing of findings on a systemic level.

¹⁰ See www.berufsbildung.nrw.de/angebote/segel-bs/literatur_aufsatz.html and www.blk-skola.de/index.php?module=pagesetter&func=viewpub&tid=4&pid=11

Innovations based on sound scientific grounds and research-driven developments can have an impact at a systemic level. An overall critical evaluation of the models in use, a critical analysis of the organisational processes in place and a research informed reflection on the consequences on the systemic level are important steps for scaling up the innovation process launched by the SKOLA programme. In order to maintain the initiative of all stakeholders and to avoid innovation fatigue we recommend a coordinated follow-up of this programme.

Regarding the future challenges of the VET system in Germany innovations in learning also have an impact on a systemic view. Due to the anticipated demographic changes competition between general education and VET will increase and VET must remain especially attractive to highly skilled young people. Fostering learning with the use of contextualised and research informed instruments is important for the integration of lower skilled apprentices, but equally for providing access to further training and career development. Finally, dissemination of results to a broader public through the media and public relation work on results from innovation projects can help foster a better image of VET.

4. General conclusions and recommendations

4.1 Involvement of stakeholders

The German VET system - and particularly the German dual VET system – has a national and worldwide reputation for producing a highly qualified workforce. Furthermore, the dual system is known for offering a smooth transition to the labour market and for providing apprentices with transferable skills which make it easier for an individual to adapt to changes in the economy. Whereas many OECD countries look to universities and higher education systems to meet the challenges of structural changes in the economy, in Germany there is still a high level of faith in the value of VET and in particular the dual system.

The system is based on the consensus principle, which means that all stakeholders, including the social partners, need to reach a common agreement when changes in policies are introduced. This is certainly a strength of the system. However, it can also act as a barrier to radical or systemic innovations, i.e. major changes to the ways services are provided involving and affecting several aspects of the system. The Innovation Circle presents an example of how such radical innovation failed to take place, despite the effort to involve participants in a personal capacity, so as to minimise the effect that ideology and stakeholder interests play in the process.

The Innovation Circle did however provide evidence of the system being able to move towards innovation in an incremental way, by introducing measures that were acceptable to all stakeholders. One example is the introduction of a pilot to address the issue of modularisation in the system, with the aim of testing whether such a policy will have a positive impact on the most vulnerable or disadvantaged groups entering the VET system. Assuming this pilot project is adequately implemented and – crucially – evaluated, it could provide valuable evidence towards deciding whether to proceed with scaling up such modularisation measures in the system.

At the school level, we saw good examples of VET teachers and academic researchers collaborating effectively on the ground in the context of the *Segel/bs* programme. However, collaboration across SKOLA projects and between multiple stakeholders, including policy makers at the Land Ministry, did not appear to us as efficient. The difficulty here may arise when it comes

to sharing of experiences and findings among teachers and to any potential scaling up of the project to other schools and/or *Länder*.

4.2 Governance structure

The German governance structure, with responsibilities divided between the Federal Government and the *Länder*, creates additional difficulties when it comes to initiating and implementing innovation. Specifically, it appears that small-scale innovative projects, dealing with issues of concern to the whole system, such as that of permeability or transition, are initiated on the ground, sometimes in individual schools, sometimes in groups of schools within a Land. However, it is not always possible to identify such projects or to evaluate them systematically and share the findings on a larger scale. The SKOLA programme, despite being coordinated centrally by the relevant *Land* Ministry, is an example of how a lack of a suitable co-ordinating body between the participating *Länder* and between the *Länder* and the Federal Government may result in the findings of these programmes not being utilised adequately. The cancellation of the *Bund-Länder* Commission for Educational Planning and Research Promotion (BLK) reduced in the potential exploitation of the results into a national policy. As long as no coordination and planning commission for the development of VET exists between different *Länder* the implementation of results of such programmes cannot be assured. It is up to each Land Ministry to decide if it will launch further activities or implement the results inside its own *Land* or in cooperation with other *Länder*.

4.3 Use of knowledge

The two case studies show that the relevant knowledge and evidence available on issues related to VET were used in the design and implementation of the initiatives. Specifically, the SKOLA project was based to a large extent on relevant academic research on self-regulated learning and the whole project was co-ordinated by a team of University researchers who worked towards putting such knowledge into practice in the participating schools. As such, the project represents also an attempt of trying to bridge the gap between academic research and teaching and learning on the ground. It appears that the collaboration between researchers and teachers was positive with researchers seen as providing advice and support to the teachers rather than imposing their own models of best practice.

Knowledge was used in the case of the Innovation Circle in two different ways: firstly in a more formal way, by means of the papers fed into the discussions via the working groups and secondly in an informal way, through discussions and sharing of experiences that took place in the 'official' working groups as well as the more informal, ad hoc ones operating on the fringes. The Federal Institute for Vocational Education and Training (BIBB) plays a central role in the collection, analysis and dissemination of VET-related data operating at arm's length from the Federal Ministry and as such is a unique resource for data, research and analysis. This facilitated the process of using evidence and knowledge to inform the work of the Innovation Circle, although, as discussed in section 1 above, certain participants expressed the view that some of that knowledge was not adequately taken into account during the discussions and the drafting of the final guidelines.

One way that knowledge could be used more effectively in an initiative such as the Innovation Circle would be to bring in expertise from outside the VET or educational system

itself. This would allow for the use of fresh ideas on issues of relevance to VET, such as the project demographic changes or other socio-economic changes that may affect the system in the medium to longer-term and that may not necessarily be evident to people from within the system. Such an outsider view can often help to stimulate thinking and generate new ideas that can lead to innovation. However, as some stakeholders pointed out during the visit, such an approach would have been difficult to implement in Germany at the time, partly because the German VET system has strong institutionalised governance mechanisms in place.

5. Implications for the study of systemic innovation in VET

The two German case studies highlight two approaches to driving innovation: a centrally-driven, top-down approach vs. one starting at *Länder* level and implemented on a small scale on the ground. These two ways of initiating and implementing innovation have been one of the main foci of this study on Systemic Innovation in VET and the German cases provide interesting examples of both approaches within the same country. In many ways, the fact that these two governance levels co-exist is a reflection of the federal governance structure of the Germany VET system as a whole, with certain areas of responsibility falling under the authority of the Federal Ministry and others within the *Länder*. In principle this structure and approach to innovation could provide an ideal space for systemic innovation, with the necessary vision and direction provided at top-level while at the same allowing for experimental and targeted pilots on the ground, which could enable small-scale innovations as they have involved local actors from the start and have been tailored to local contexts. To an extent this is what we observed in the German system; however, what was missing was the link between the two, a platform or co-ordinating body that would allow for efficient communication between stakeholders at the top - federal government, chambers of commerce, *Länder* ministries – and those on the ground – individual school headmasters, teachers, and academic researchers. In the governance structure at the horizontal *Länder* level there are formally speaking mechanisms in place to ensure dissemination of promising practices which can spur and anchor innovations more broadly. Yet, the evidence provided indicates that innovations occur in a very localised manner, and with limited knowledge of what occurs elsewhere. One reason for this may be that the socio-economic contexts of VET are perceived to be quite different across the German *Länder*, and therefore relevance of innovations in other contexts remains limited. Whatever the explanation, this localised approach to innovation is likely to limit systemic innovation in a more fundamental way and furthermore may result in inefficiency in public expenditure on VET innovation.

Another critical factor for systemic innovation is the existence of an evaluation culture to foster learning among those involved in real time so as to support and guide the implementation and as the basis for evidence-based and dynamic policy making. In our study of systemic innovation we have found evidence of a rather weak evaluation culture in VET innovation across participating countries, and the two German cases are no exception. In the case of the Innovation Circle this can be seen in two different ways: a lack of formal evaluation of the process itself as well as a rather weak monitoring and evaluation of the implementation progress of the outcomes. Similarly, one important weakness of the SKOLA projects is the lack of an overall formal evaluation plan that will allow for a proper dissemination of findings among researchers, practitioners and policy makers as well as the implementation of follow-up projects, possibly on a larger scale. Further, the lack of an adequate evaluation of any initiative may increase the risk of

‘resistance to innovation’ by important stakeholders in the future, as new initiatives may be perceived as lacking continuity and coherence with previous ones.

Finally, an interesting finding is the fact that the external pressures on the German VET system that act as drivers of change – demographic changes, new occupations and fields activities, availability of training opportunities for disadvantaged and vulnerable groups of young people – are shared by many of the countries participating in this study, despite differences in local and national contexts.

Inducing a culture open to structural change and governance of structural change in the VET system which could lead to systemic innovation is a complex process. Social systems such as VET are multi-layered and in order to achieve systemic innovation there needs to be consistency and shared perceptions at all levels. Furthermore systemic innovation in VET is often not a one-off event, but a continuous process of overlapping developments. In each country and/or economic sector, a specific set of institutions and organisations have developed over time. Governments, business and industry, trade unions and educational organisations have built a very regulated institutional system for VET, rooted in social, cultural, and economic patterns. In some countries these systems go a long way back in history. It can even be argued that the more rooted and institutionalised a VET system is, the more barriers there are to systemic innovation. Opposing ideologies shared by the different stakeholders may also act as barriers to systemic innovation. In institutionalised VET systems where change is shaped through consensus-making mechanisms, there may be quite an openness to incremental innovations, because there often seems to be a shared, albeit often tacit understanding of the strengths and weaknesses of a particular system. A shared view on the needs for *systemic* innovation may, on the other hand, be difficult to evoke, because more structural and fundamental approaches to change are more exploratory by nature, and can lead to changing roles and responsibilities with less formal influence. Some of these concerns appeared to be of concern to the stakeholders we talked to during the German study visit.

VET systems in OECD countries are in a period of transition as they are searching for new equilibrium in an economic context where learning plays a growing role in economic performance, innovation capacity and social equity.

Research that has examined the conditions for adaptable innovation systems has identified three inter-related critical factors (see Lundvall and Borras, 1997):

1. stimulating learning institutions and economic actors- for example through increased autonomy, and through pilot funding mechanisms, which can in particular circumstances act as a laboratory of change;
2. developing integrated policy visions and instruments for enhancing innovation;
3. creating conditions for policy-making processes which are constantly adapting to new demands and conditions – the latter will call for new types of evaluations methods, new forms of research and new ways of designing dissemination processes.

As the country visits have shown so far the concept of systemic innovation seems rather new and at times not well understood phenomenon when applied to change in the VET system. The

processes of reform of VET often aim at finding a solution to a particular problem and, through negotiations within the governance framework, achieving a consensus about how that problem may be addressed. The limitation of such approaches is that they often do not take into account how that particular problem may be embedded in wider structural challenges. Such challenges therefore risk not being addressed and the reforms do not have the impact that was intended at the outset.

Yet there seems to be an increased interest by VET policy makers in finding new paradigms to address structural challenges in the VET systems, not least because VET systems across OECD countries are under pressure to deliver to different and at times conflicting reform agendas. These include in some of the countries visited (Australia, Denmark, Germany) the creation of an *ad-hoc* 'strategic communicative platform' that goes beyond the usual institutionalised governance structures. Reasons for doing so could be that the highly institutionalised governance mechanisms mostly deal with specific short term challenges, but may be less suited for exploratory strategic dialogues.

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ANNEX 1: LIST OF PARTICIPANTS

The following people met the expert team and discussed with them one or both of the case studies. They are listed here in alphabetical order.

Ms Maria Brosch	Division Vocational Training Policy and Strategy, Federal Ministry of Education and Research
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Ms Barbara Dorn	Director Education/VET, Confederation of German Employers' Association
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Mr Klaus Fahle	Director, National Agency 'Education for Europe', Federal Institute for VET (BIBB)
Ms Walburga Freitag	Higher Education Information System
Ms Kornelia Haugg	Head of Department, Vocational Training and Lifelong Learning, Federal Ministry of Education and Research
Mr Gernot Herrmann	Deputy Head Division of VET, Secretariat of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany
Mr Hohn	Headmaster, Friedrich-List-Berufskolleg der Bundesstadt Bonn
Ms Karin Küßner	Assistant Head of Division, Regulation of Vocational Training, Federal Ministry of Education and Research
Mr. Steffen Bayer	Head of VET Division, German Chambers of Trade and Industry

Ms Dagmar Ludzay	Deputy Managing Director, Employers' Coordination Body for Vocational and Further Training (KWB)
Mr Klaus Luther	Deputy Head of Directorate General, European and International Cooperation in Education and Research, Federal Ministry of Education and Research
Mr Hermann Nehls	Head of VET Unit, Confederation of German Trade Unions (DGB)
Mr Ulrich Nordhaus	Head of Adult Learning Unit, Confederation of German Trade Unions (DGB)
Mr Bent Paulsen	Head of Department, Promotion and Further Development of VET, Federal Institute for VET (BIBB)
Ms Stephanie Pudenz	Ministry of Education and Further Training, North Rhine Westphalia
Mr Thomas Rheinholz	Head of Department for International Contacts, Hessian
Ms Ingrid Sehrbrock	Vice Chair, Confederation of German Trade Unions (DGB)
Ms Beate Scheffler	Chairwoman of the <i>Bund-Länder</i> Coordinating Committee and the VET Committee of the Standing Conference of the Lander (KMK); Head of Department VET, Ministry of Education and Further Training, North Rhine Westphalia
Mr Peter Thiele	Head of Division Vocational Training Policy and Strategy, Federal Ministry of Education and Research

ANNEX 2:

TEN GUIDELINES FOR THE MODERNISATION AND STRUCTURAL IMPROVEMENT OF VOCATIONAL EDUCATION AND TRAINING

(Source: Federal Ministry of Education and Research, 2007b)

1. Encouraging completion of school education – improving training maturity
2. Optimising training preparation for the disadvantaged – reorganising funding structures
3. Optimising transfers – securing paths to company training
4. Strengthening the occupation principle – making vocational education and training more flexible
5. Broadening the training basis – making effective use of training
6. Enhancing transfer opportunities – securing the employability of vocational skills.
7. ‘Second chance’ education – promoting qualifications for young adults
8. Greater openness towards Europe – improving mobility and recognition
9. Strengthening dual training by European comparison – securing potential on the international education market
10. Providing a basis for future-oriented vocational training policy – strengthening co-operation between industry, science and politics.