



**KULTUSMINISTER
KONFERENZ**

German vocational training and education cooperation

Possibilities for transferring a successful
education and training principle



Foreword

Dear readers,

“The transition from school to working life is remarkably smooth in Germany. An admirably developed vocational education and training system allows young people to enter the labour market well prepared to find jobs commensurate with their qualifications.”

Source: <http://www.oecd.org/berlin/presse/berufsbildung-deutschland.htm>; accessed on 19.10.2017

You can't describe vocational education and training in Germany, and specifically the dual system in Germany, more accurately than the OECD does. The strengths and achievements of vocational education and training speak for themselves: it guarantees companies highly-qualified young employees who make a major contribution to the productive capacity of our national economy through their vocational competence. A low level of unemployment among young people, the smooth transition from school to a qualified employment and the career opportunities offered by vocational further qualification offers are crucial factors for the success of our vocational education and training system.

But what is this success story based on? The basic principle of education and training in the dual system is the close affiliation between practical and school learning. Vocational learning focuses on real working and business processes. The curricula for the respective professions on which the education and training in the school is based are designed accordingly and coordinated by the Standing Conference of the Ministers of Education and Cultural Affairs. Particular features of these curricula are their structured system of recommended actions and the competence-oriented description of learning objectives. The acquisition of vocational skills thus becomes the decisive goal of vocational education and training.

In the international educational community we are perceiving an increased interest in vocational education and training in Germany. This is proven by the growing number of visits by delegations, and also by the similarly sharp rise in demand for the involvement of German partners in international vocational education and training projects.

We are pleased by this interest and the Länder are more than happy to satisfy this demand for cooperation. We consider it our responsibility to support this export of education and to strengthen it through a sustainable cooperation. For example, teachers have already been trained in partner countries to raise the quality of teaching with the aim of a hands-on learning approach. The Länder have developed programmes to help cooperation partners design and implement curricula. The aim of this transfer of knowledge is always to empower the local multipliers to develop their own concepts, which integrate economic, social and pedagogical prerequisites of the respective country.

Vocational education and training was one of the thematic focal points during my Presidency of the Standing Conference in 2017. We hope that this brochure will contribute to further clarify the structure and strengths of vocational education and training in Germany and promote international cooperation in this field. I am proud to be able to present five good practice examples of international cooperation in vocational education and training from various Federal States in this publication. Each of these projects pursues its own goals and approaches. But a common feature of all of these projects is that this concrete cooperation offers a great opportunity for the individual development of everyone involved, and has led to an understanding beyond the borders of their own cultural environment.



Dr. Susanne Eisenmann
President of the Standing Conference of the Ministers of Education and Cultural Affairs 2017, Minister of Education, Youth and Sport of the Land Baden-Württemberg

Greeting

International cooperation in vocational education and training from the point of view of vocational schools

Vocational schools face a particular challenge at a time when “Industry 4.0”, “Work 4.0” and “Economy 4.0” are becoming increasingly important. The highly complex processes and contexts require an extension of professional competences beyond the simple question of their utilisation.

Because digital education in vocational training is not reduced to the use of digital media, but rather, the digitised working and business processes also become the subject matter of lessons. Equivalent real tools (machines, software etc.) then become a medium of education. In this context, the main thing is to pass this knowledge and these experiences on to international vocational schools and to involve them in these developments by means of educational cooperation projects.

As the director of an industrial school centre, I believe that my colleagues and I have a responsibility of making our almost 2,500 pupils fit for the technologies of both today and tomorrow. In our school, technical trainees get a head start in the digital industrial age thanks to the Learning Factory 4.0 and the latest teaching concepts. These are networked systems in which highly flexible, digital production processes are mapped for training. They essentially consist of two large sub-areas: The basic research lab, in which trainees are given a didactic introduction to digitally controlled production, in other words the standard tasks in modern industrial manufacturing. On the other hand, the young people are given the opportunity to train intelligent production systems on the basis of real industrial standards in concatenated machine

systems and to control networked processes themselves. Our international partnerships profit from this too.

INTERNATIONALISATION AS A VOCATIONAL TRAINING TASK

Internationalisation is a vocational training task that we gladly address as part of our responsibility to qualify the next generation of skilled workers. Our industrial school centre can now look back on many years of close cooperation with, amongst others, the Vietnamese-German Technical College (VDIF) in Thai Nguyen in Vietnam. Both sides profit from the close cooperation and partner-like bond. Our cooperation school profits in particular from the practical training of skilled workers and junior employees. The orientation on competence in lessons at vocational schools and the resulting realistic contents and problems allow the trainees to quickly develop greater competence. Since 2006, reciprocal visits have taken place at regular intervals with workshops on the content of training courses in technical professions.

This example should demonstrate that international cooperation in vocational education and training are not only helpful but also important for the international development of vocational schools. This kind of cooperation has to be expanded. German vocational schools are happy to help provided they are given adequate resources.



OStD Eugen Straubinger
School Director
Philipp-Matthäus-Hahn-Schule, Industrial School Centre
Balingen/Baden-Württemberg

Education and training in the dual system:

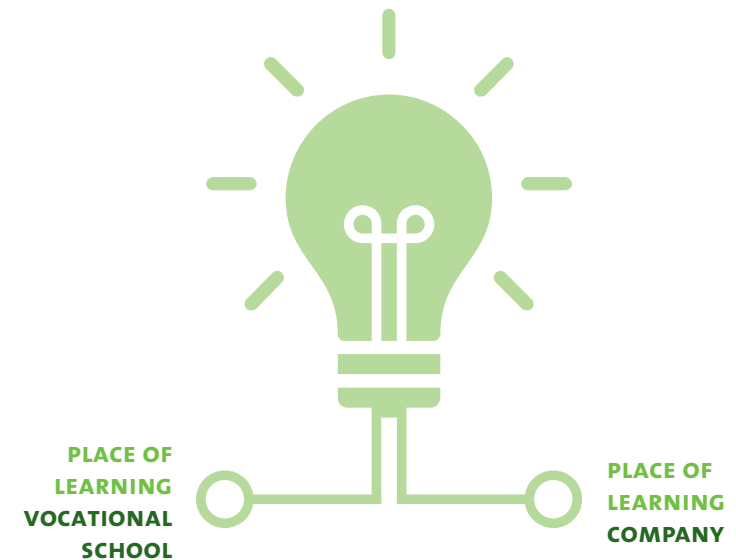
Two places of learning – one goal

The success and social acceptance of vocational education and training in Germany are primarily borne by the principle of education and training in the dual system. This traditionally evolved educational concept is based on a close cooperation between two separate places of learning so as to qualify youths and young adults for a professional activity: the company and the vocational school. Despite this institutional division, a common educational goal is pursued: the development of comprehensive vocational skills.

Companies and vocational schools work together closely to achieve this goal, ensuring that each partner can achieve their specific educational mandate. In the company, the trainees learn practical and application-oriented competences. And by attending the vocational school they acquire specialist competences and expand their general education.

Education and training in the dual system in Germany is characterised by its high integration and innovation capacity. The involvement of everyone concerned guarantees the willingness to assume responsibility for education and training. Apart from state institutions, the employer and employee organisations have an important and active role to play in designing the content and structure of professions. This creates the basis for the acceptance of and identification with education and training in the dual system as a recognised system for the qualification of skilled personnel.

The consistent orientation on working and business processes that are typical for the profession is a further fundamental key



feature of education and training in the dual system in Germany. They form the basis for the stipulations in the curricula of the companies and vocational schools. Consequently, not only are qualification needs of the economy portrayed accurately, this also guarantees the ability of the education and training system to adapt to changing requirements.

The Länder bear the responsibility for the vocational schools and lay down the requirements on teaching. A procedure has been developed to design the vocational curricula that has established itself as a general standard for structuring, illustrating and describing vocation-related learning processes and also has met with great interest within the scope of international cooperation in the field of vocational education and training.

The learning field concept of the Standing Conference of the Ministers of Education and Cultural Affairs:

A concentration on vocational competence

The framework curricula of the Standing Conference of the Ministers of Education and Cultural Affairs for vocation-related teaching in vocational schools are structured according to so-called learning fields. This teaching focuses on the encouragement and acquisition of extensive professional competence.

The starting point for learning field-oriented teaching – unlike traditional subject-oriented teaching – is no longer subject-related theory. Rather, contexts for action are developed from professional remits and dealt with didactically. The multidimensional nature of actions (e.g. economic, legal, mathematical, communicative, social aspects) calls for a wider approach than the perspective of an individual specialist discipline. This is why subject-related systematics are integrated in an overarching system of actions. The specialized knowledge needed to carry out professional activities is the result of the requirements of the mandate typical for the profession.

Reference to vocational courses of action and situations is needed for successful, lifelong learning. The learning field concept encourages the teaching of corresponding knowledge, system-oriented, networked thoughts and actions as well as the solution of complex and exemplary tasks. One indispensable task of the vocational school - in addition to vocational training – is also to

explain the corresponding working and business processes against the background of corresponding specialist sciences and to reflect on social developments.

The individual learning fields of the framework curricula have been developed from fields of action of the respective profession and take their bearings from vocation-related remits within inter-related working and business processes. The didactic structuring of the learning fields beyond the course of the training allows the development of systematically structured and ampliative competence. The vocational competence acquired at the end of the learning process integrates specialist, social and self-competence and is formulated in the learning fields for the specific vocation.

The learning fields are implemented in action-oriented learning situations in class by the teams of teachers in the individual vocational schools. The learning situations hereby cover all of the competences that have to be taught in the learning field.

Coordination work of the Standing Conference of the Ministers of Education and Cultural Affairs:

Framework curricula as a binding basis for teaching in all vocational schools

Vocational education and training at the company-based places of learning is legally regulated by the federal government through training regulations. The Standing Conference of the Ministers of Education and Cultural Affairs has drawn up a framework curriculum for vocation-related teaching for the vocational school as a learning place. This framework curriculum can be adopted by the Länder as a curriculum for the respective Land according to the corresponding education act. What is crucial for successful cooperation between the learning places is the content-related and consecutive coordination of the training regulations and the framework curriculum.

To this end, the federal government and the Standing Conference of the Ministers of Education and Cultural Affairs agreed on a concrete procedure to coordinate training regulations and framework curricula in the field of vocational education and training in the dual system in 1972:

▸ **THE REASON FOR A REFORM** of an “Ausbildungsberuf” (recognised occupation requiring formal training) are the altered qualification needs of the economy. An initial application approach is made to the federal ministry responsible that defines the respective educational policy parameters for an “Ausbildungsberuf”. These include, amongst other things, details of the duration and structure of the vocational training, the nature of the final qualification with respect to its scope and specialisation as well as descriptions of the training content in the form of a catalogue



of the qualifications to be taught. In this preliminary phase, a leading Land monitors the content-related and structural design of these educational policy parameters with the Secretariat of the Standing Conference on behalf of the Committee for Vocational Education and Training of the Standing Conference of the Ministers of Education and Cultural Affairs. To this end, they attend the corresponding meetings of the specialist federal ministries with the social partners.

▶ **THE ELABORATION AND COORDINATION PHASE** begins with the consent of the Coordination Committee of the Federation and Länder “Training regulations and framework curricula” to the parameters agreed in the application approach. After this, the Länder establish a frame-work curriculum committee made up of experienced teachers from all 16 Länder for the specific “Ausbildungsberuf”. This committee prepares a draft of the frame-work curriculum for the Standing Conference of the Ministers of Education and Cultural Affairs under the coordination of the Secretariat of the Standing Conference of the Ministers of Education and Cultural Affairs. The federation constitutes a committee of experts made up of representatives of the employers to prepare a draft of the training regulation. The draft is prepared in joint and separate meetings. During the separate meetings, the other side is represented by an observer and the results of the meetings are shared between the parties. At least one final joint meeting is usually held to coordinate the content and timing of the drafts for the training regulation and framework curriculum. Both sides agree to clarify all questions related to the content by a consensus wherever possible throughout the overall procedure and to each submit a resolved draft.

▶ **IN THE ADOPTION PHASE**, the coordinated drafts of the training regulation, after a hearing in the main committee of the Federal Institute for Vocational Education and Training, and the framework curriculum, after its approval by the Committee for Vocational Education and Training of the Standing Conference of the Ministers of Education and Cultural Affairs, are submitted to the Coordination Committee of the Federation and Länder “Training regulations and framework curricula” for resolution. The training regulation is promulgated by the pertinent specialist federal ministry and announced in the German Federal Law Gazette. The framework curriculum is resolved by the Standing Conference of the Ministers of Education and Cultural Affairs and provided on the homepage of the Standing Conference of the Ministers of Education and Cultural Affairs at <http://www.kmk.org>. In addition, the training regulation and the framework curriculum are published jointly in the Federal Gazette and in the resolutions archive of the Standing Conference of the Ministers of Education and Cultural Affairs.

Practical examples

Pilot class project “Metal”

The pilot class project “Metal” began in October 2013 with the signing of the “Letter of Intent” between the Landesakademie für Fortbildung und Personalentwicklung an Schulen, Esslingen, and the Changzhou Sino-German Teaching Training Center, Jiangsu, China. One training class each from five vocational colleges, the so-called “pilot classes”, took part under the leadership of the Teacher Training Center.

The goal of the project was to teach the pupils a higher vocational competence within the scope of school-based vocational education and training. Work assignments were handed out in all of the three years of the training and concrete results produced, for example a hand press. All of the

trainees produced the necessary components themselves, learning methods such as turning, drilling or milling and using the corresponding machinery in the workshop.

The centre of the cooperation was the Changzhou Science and Education Town. This vocational education and training centre provides its facilities and workshops for the majority of the continuing education events. Some courses were also held at the vocational colleges involved in Baden-Württemberg.

The state academy set up a permanent team of experts consisting of a total of twelve practical and scientific teachers from the state of Baden-Württemberg in the vocational field of metal technology for the project. The team of experts was

Two trainers from the team of experts (from the left: Marcin Pachol and Thilo Seltmann) answering the numerous questions posed by metal teachers during a training course in China.



Overview of the project

Partner organisations involved in the implementation:

Baden-Württemberg: Landesakademie für Fortbildung und Personalentwicklung an Schulen (state academy for vocational training and supplementary training as well as personnel development in schools), Esslingen

China: Changzhou Sino – German Teaching Training Center, Jiangsu, China

Goal of the project

The development of action-based and pupil-centred teaching in the professional field of metal technology

Period 2013 – 2016

Important milestones

- ▶ **October 2013:** Signing of the “Letter of intent”
- ▶ **February 2014:** Joint team building activities and kick-off event in Changzhou, China
- ▶ **March 2014 until summer 2016:** 18 continuing education events in China and Baden-Württemberg
- ▶ **summer 2016:** Final examination in the pilot classes

headed by an internationally experienced in-service trainer for metal technology and self-organised learning.

Within the scope of the teaching project, 18 continuing education events were held on lesson planning, whereby the experts from Baden-Württemberg cooperated closely with their Chinese colleagues from the vocational colleges involved. The jointly planned lessons were tried out in the pilot classes after each training session. The Chinese teachers reported to the in-service trainers on their experience implementing the lessons so that this could be taken into account when planning the next continuing education modules.

This was the first time that the project schools were able to develop and try out action-based and pupil-centred teaching with a team of German experts over such a long period of time. This led to a significant improvement in the quality of the cooperation. School education and training was supplemented by practical phases in cooperation with companies.

One key touchstone for the project was the success of the pupils in the final examination. The pupils’ performances showed that action-based, pupil-centred learning and the consistent integration of theory and practice was successful in the pilot classes involved.

Initial feedback from the companies in which the pupils completed their work experience show that the future experts are more motivated and autonomous and have a high

vocational competence. The budding young specialists are thus well prepared for the realities of working life.

A follow-up project has been running for the project schools since 2017 in which the activity orientation is broadened and consolidated.

Bavaria — Guangdong Province, China and Shanghai Municipal Province, China

Cooperation in the field of upgrade training for teachers

The project described below is currently being carried out at two locations in China. On the one hand, a partnership exists between the Bavarian Ministry of Culture and the Shanghai Educational Commission, and on the other with the Shenzhen Educational Commission. The cooperation with Shenzhen will be explained in more detail below by way of example; this began with the signing of a joint letter of intent in March 2017. The continuing education programme for Chinese teachers CLiB (“Chinesische Lehrer in Bayern” – Chinese teachers in Bavaria) is supported and monitored organisationally by the Hanns-Seidel Foundation. The State Vocational School I Kempten and the Johann-Bierwirth School Memmingen are responsible for implementing the programme.

The aim of the CLiB project is to acquaint Chinese teachers with the structure of the German vocational education and training system and to convey the German idea of education, which focuses on facilitating vocational competence. At the same time, the ability of the Chinese teachers to organise lessons professionally and with a focus on competence and activities will be extended.

The continuing education concept is divided up into the following sections:

PREPARATORY PHASE

During a course in August and October 2017, the 30 teachers involved in the project in China were introduced to the dual system of German vocational education and training and the concept of activity-based teaching by German teachers. The course participants developed their own teaching sequences under professional guidance.

Overview of the project

Partner organisations involved in the implementation:

Bavaria: The Bavarian State Ministry for Education and Cultural Affairs, Science and Art (StMBW)

China: Shenzhen Educational Commission and Shanghai Educational Commission

Bavaria and China: Hanns-Seidel Foundation

Goal of the project

Continuing education programme for Chinese vocational school teachers

Period 2017–2020 (Shenzhen), since 2015 (Shanghai)

CORE PHASE

In November and December 2017, the Chinese teachers spent eight weeks in Germany. During this time they experienced a three-week, inter-company course programme on action-based teaching in practice. In the following three weeks they were introduced to various aspects of vocational education and training such as a hands-on learning approach, teamwork skills, self-directed learning for pupils as well as future orientated topics such as environmental pedagogy. Furthermore, the programme also included visits to companies and educational institutions. Over the last two weeks, the State Vocational School I Kempten, the State Vocational School Lauingen, the Johann-Bierwirth School Memmingen and the State Vocational School Centre Nördlingen each took charge of a group of Chinese teachers. They were given the opportunity to sit in on lessons and develop their own teaching sequences, which were then taught in the classes with the help of an interpreter. This sitting in on classes and the attempts at tea-

ching were accompanied by targeted briefing and debriefing sessions.

EVALUATION PHASE

The experience gained in Germany should qualify the teachers to plan their own lessons and implement these on site in China with their own pupils. Since the success of this continuing education programme can only be assessed on site in the lessons, the project will be evaluated in summer 2018 in Shenzhen. The Chinese teachers will hereby be visited by Bavarian teachers in class to give them feedback on their progress and the skills they have acquired in action-based and pupil-centred teaching.

The CLiB model should not only serve the acquisition of knowledge and to enhance the competence of the teachers involved but also contribute to a deepening of the cooperation between Bavaria and the Chinese partner province Guangdong.



Chinese vocational school teachers develop a learning situation in a preparatory course under the guidance of German experts (photo shows Georg Stadler, Hanns-Bierwirth School Memmingen).

Berlin — Ethiopia, Benin, Ghana, Cameroon as well as other developing and emerging countries

Development cooperation in countries of the global south

The Regional Office for the Promotion of Industrial Occupations in Developing Countries is a training establishment of the Berlin Senate Department for Education, Youth and Family at the Peter-Lenné School. Over 2,000 teachers and experts from more than 70 developing and emerging countries have undergone successful training here in more than 50 years. Training has focussed on the environmentally relevant fields of „Regenerative energies and water management“ since 2007. The idea of sustainable development plays a major role in vocational education and training. At the same time, this facilitates an intense exchange between cultures through the international dimension of participants.

The courses have a modular structure and are offered in cooperation with the Knobelsdorf-School, the advanced level instruction centre for structural engineering. The theoretical knowledge acquired on regenerative energies (biomass, photovoltaic, solar thermal energy and wind power) and water management (water production, water storage, water output and water purification) is put to hands-on, practical use in projects. The teaching of didactic and methodological skills rounds off the training programme, the ability to transfer what has been learned to the home country is examined. These sustainable and local concepts of power generation and water management have been implemented

Fitting a model house with solar energy in Weira (Ethiopia)



over the past few years exemplarily in various African countries together with local protagonists and non-governmental organisations (NGO).

A centre for environmental education and sustainability is planned in Cameroon where pupils from the Bassossa region (West Cameroon) will receive vocational training in the fields of renewable energies and water management.

Since 2014, the “German Solar Academy” in Douala and Yaounde has been offering courses in the professions of the future in the solar energy sector in cooperation with the Regional Office and SRH Hochschule.

A model house was equipped with elements of regenerative energies and water management in Ethiopia in 2014 in cooperation with a local NGO and a school: this is now being used for training courses in the aforementioned topics.

Courses in the field of solar energy have been offered for experts from the region since 2014 in Ghana in cooperation with the SRH Hochschule and the Kikam Technical Institute.

Courses on solar energy are also being offered in a small education centre in Tema (Greater Accra Region); the programme will be extended to include water management in 2018.

In Benin, the Regional Office has been helping the Ministry of Secondary Education, Vocational Training & Technical Training to improve vocational education and training since 2017. There are plans to implement the dual system of vocational education and training.

Further smaller projects are receiving successful support in cooperation with former participants, e.g. the installation of a photovoltaic system for a primary school in Nigeria (2015), the recultivation and reforestation of fallow land in Mongolia (2015) and the installation of “low cost” irrigation systems in cooperation with the SLE in Kenya (2016).

The courses offered by the Regional Office will be expanded in the long term in cooperation with other advanced level instruction centres in Berlin for the commercial-technical field to include environmentally relevant and future-orientated thematic fields (biotechnology, environmental and process engineering) so as to create an extended, attractive offer for experts and executives from developing and emerging countries in cooperation with subordinate authorities involved in economic cooperation. Training in Berlin can be supplemented by posting experts from the vocational schools to the partner countries so that their knowledge in professional fields can be put to practical use to improve the local living conditions and to combat the causes of flight.

Overview of the project

Partner organisations involved in the implementation:

SRH Hochschule, Berlin
Centre for Rural Development, HU Berlin
various NROs

Goal of the project

The implementation of courses in the field of renewable energies and water management to improve local living conditions

Period since 2007

Hamburg — Tirana, Albania

Implementation of practically-oriented dual vocational education and training in the hotel and catering trade

Within the scope of the European alliance to create qualified apprenticeships and reduce youth unemployment in Europe, the EU supports the implementation of dual structures based on the German system of practically-oriented dual vocational education and training. In the autumn of 2014, the HIBB was awarded the Erasmus+ project to implement dual vocational education and training in the hotel and catering sector in Albania by the EU. At the beginning of 2015, HIBB started its work with the local project partners, the Ministry of

Social Affairs and Youth and the National Agency of Vocational Education and Qualifications (NAVETQ).

Over the two-and-a-half year period, executives and teachers as well as pupils were qualified in training courses focussing on the professions of cook and receptionist through 12 training units of the HIBB team of experts in Tirana. The goal was to make it easier for the course graduates to find a job on both the Albanian and European labour markets through reformed curricula and a higher share of practical work in the apprenticeship. Also,

Overview of the project

Partner organisations involved in the implementation

Hamburg: Hamburg Institute for Vocational Education and Training (HIBB)

Albania: Ministry of Social Affairs and Youth and the National Agency of Vocational Education and Qualifications (NAVETQ)

Period 2015–2017

Goal of the project

- ▶ Know-how transfer and counselling aimed at supporting the reform efforts in vocational education and training
- ▶ Qualification of executives and teachers
- ▶ Qualification of pupils in accordance with the dual education and training system in the hotel and catering sector
- ▶ Reduction of youth unemployment

company, through visits to the State Vocational School for Catering and Food, to various hotels and to the Chamber of Commerce.

The training in Hamburg concentrated on the application of teaching methods and the combination of theoretical knowledge with practical experience. The hotel managers gained a profound insight into the practical part of the training as well as the certification of hotels as training establishments through their visits to hotels in Hamburg.

At the end of the training in Hamburg the participants agreed that this had given them a much better understanding of the dual system of vocational education and training based on the German model. The visit had been a real eye-opener for them.

During the project period, 85 cooks and 21 receptionists successfully completed their dual apprenticeship up to the middle of 2017. Both the schools in Tirana and Kamsa that were involved in the project as well as the restaurants and the trainees were delighted by the training with its practical share of over 60%.

Albania is planning to implement dual structures in other training courses in the medium to long term.

the project was to intensify the cooperation between vocational schools and the hotel and catering sector.

In addition to the theoretical and methodological knowledge, school directors and hotel managers took part in a one-week training course in Hamburg in November 2015. During this period they got a very good impression of the necessity of a close cooperation between the two places of learning, the school and the



Buffet in Tirana

North Rhine-Westphalia — Finland, Italy, Lithuania,
Netherlands, Poland, Sweden, Spain

VET 4.0 – Vocational education and training in the working world 4.0

The changes in the working world that are commonly referred to as “Industry 4.0” and the “Internet of things” also pose new challenges for initial and continuing vocational education and training. In order to achieve a competitive and innovative economy it is important that education and training be adjusted in due time and that a broad consensus and close cooperation be encouraged between teachers, pupils, education and training providers, companies, social partners and chambers.

At the same time, aspects such as networking and globalisation also have to be taken into account. This is why a European consortium with educational experts from eight countries are working together in an Erasmus+ project supported with EU funds to develop exemplary, future-orientated “VET 4.0” learning units for trainees in the fields of electrical engineering and mechatronics as well as for vocational school teachers and the trainers in companies.

The first step was to identify the needs in the various partner countries. The future requirements on vocational education and training

Overview of the project

Partner organisations involved in the implementation

DE: EU-Administrative Office for Economic and Vocational Education and Training of the Cologne Regional Office of the Land Government

FI: Kouvola Region Vocational College

IT: Area Formazione Fondazione CPV, Vicenza; IFOA, Reggio Emilia

LT: Vytautas Magnus University, Kaunas

NL: ROC Leeuwenborgh, Maastricht

PL: Central European Chamber of Commerce, Wrocław

SE: Förvaltningen för Gymnasie & Vuxenutbildning, Kungsbacka

ES: IES Campanillas, Malaga

Goal of the project

Identify the future qualification needs in vocational education and training against the background of the so-called Industry 4.0, development of exemplary learning modules for trainees and continuing education modules for educational staff in the field of electrical engineering and mechatronic

Period 2016–2018

in the aforementioned fields were determined with the help of literature studies and a qualitative survey so as to be able to draw up a profile of the competences that will be needed for the working world 4.0.

Exemplary modules were developed on this basis for trainees that prepare them to cope with the new, complex professional challenges. The focus here is on networked, practically-orientated learning and teaching because these are the key features of Industry 4.0. Initial trials began in the middle of November 2017 for the four modules that had been developed up to then.

A close, Europe-wide cooperation between companies and schools is helpful here. Companies who already have experience with Industry 4.0 take part in the trials and evaluation so that practically-orientated and practicable results can be achieved.

Continuing education modules for teachers and instructors in schools and companies that relate to the learning modules for the pupils are also developed on the basis of

initial study. The altered teaching and learning requirements in a highly digitized working world are the main issues here. Apart from the changing role of the teacher, special attention will also be paid to interdisciplinary competences to allow an adjustment for other professional fields too. These modules are currently in the development phase and are scheduled for initial trials in the spring of 2018. The results will be used in the further development of curricula.

All of the modules will be developed and tested in cooperation with the European project partners involved. They will be published on an Open Source platform where they can be used and further developed in future.

More information about the project and its results can be found on our website <http://www.vet-4-0.eu/>

Impression of the kick-off event



Rhineland-Palatinate — Tianjin Municipal Province, China

Internationalisation in the specialist field of logistics management

The project was launched in March 2013 with the signing of the “Letter of Intent” between the Vocational School for Economics I in Ludwigshafen and the Sino-German Vocational Technical College in Tianjin, China. The project’s initial term of three years implies its automatic extension unless terminated by one of the two parties.

The goal of the project is to support the Chinese partner in the development of action-based and pupil-centred teaching in the professional field of logistics management and also to extend the professional and intercultural competences of pupils at BBS I by completing a vocational internship in a company in Tianjin.

The first has been achieved to date

- through visits by two teachers from the field of logistics from the college in Tianjin to our school (2015 and 2017) for two weeks, through participation in several seminars, including at the FH Ludwigshafen, by sitting in on specialised classes at the BBS I and through visits to training establishments. In final talks at the FH and the BBS, the Chinese teachers



Calligraphy course at the college

once again discussed their new knowledge with the specialist lecturers and teachers and together they reflected on how this could be adapted to fit the Chinese system. The Chinese teachers also reported on those new features that had already been implemented in classes and solutions were sought together for difficulties that had arisen.

- Visits by two teachers – mainly from the field of logistics at the BBS I to the college in Tianjin – who lived in the college as attendants during the pupils’ first weeks of vocational internship and held lectures for Chinese teachers on topics related to action-based and pupil-centred teaching. They also help them design the classes and provide teaching and assessment materials in the field of logistics management.

The latter has been achieved to date

- through the completion of a 4-week vocational internship by 7 to 9 pupils of the BBS I (up to now annually since 2014) in four different companies in Tianjin, whereby the pupils attend classes in college in the morning and spend the remainder of the working day in companies. The Chinese partner organises the board and lodging as well as a cultural programme for the pupils. Every year, the debriefing sessions and documentation prepared by the pupils about the vocational internship, life and classes in the college as well as the personal contacts they made in China confirm just how important this programme is for the pupils, not just from a professional

Overview of the project

Partner organisations involved in the implementation

Rhineland-Palatinate: Vocational School for Economics I (BBS I), Ludwigshafen

China: Tianjin Sino-German Vocational Technical College

Goal of the project

- The development of action-based and pupil-centred teaching in the professional field of logistics management
- Encourage the professional and intercultural competences of pupils in the field of office management and logistics

Period 2013–open

point of view but also with regard to the development of their personality.

A two-week visit by Chinese pupils from the college in Tianjin is planned to the logistics department of the BBS I for 2018. The primary goal here will be to encourage the pupils’ intercultural competences. The BBS I will organise the board and lodgings as well as a cultural programme for the Chinese pupils.

During the visit by the pupils from BBS I to the college in Tianjin in 2016, two short promotional films were shot by the IBS (The Information and Consultancy Unit for Vocational Education and Training for Germans Abroad) with pupils from the BBS as central figures that present the project very vividly: www.go-ibs.de

Contact points

BADEN- WÜRTTEMBERG

Matthias Kurrle

Ministerium für Kultus, Jugend und Sport Baden-Württemberg /
Referat 42 / Thouretstraße 6, 70173 Stuttgart
☎ +49 711 279 2856 ✉ matthias.kurrle@km.kv.bwl.de

BAVARIA

Christian Pownuk

Bayerisches Staatsministerium für Bildung und Kultus, Wissenschaft
und Kunst / Referat VI.1
Jungfernturmstraße 1, 80333 München
☎ +49 89 2186 2781 ✉ christian.pownuk@stmbw.bayern.de

BERLIN

Ulrich Schunder

Senatsverwaltung für Bildung, Jugend und Familie /
I E 2 – Schulaufsicht berufliche Schulen
Bernhard-Weiß-Straße 6, 10178 Berlin
☎ +49 30 9 0227 5445 ✉ ulrich.schunder@senbjf.berlin.de

BRANDENBURG

Sandra Engels

Ministerium für Bildung, Jugend und Sport des Landes Brandenburg /
Referat 34 – Berufliche Bildung
Heinrich-Mann-Allee 107, 14473 Potsdam
☎ +49 331 866 3846 ✉ sandra.engels@mbjs.brandenburg.de

BREMEN

Till Bellmann-Nitz

Freie Hansestadt Bremen
Die Senatorin für Kinder und Bildung / Referat 22 – Berufliche Bildung
Rembertiring 8-12, 28195 Bremen
☎ +49 421 361 2282 ✉ till.bellmann-Nitz@bildung.bremen.de

HAMBURG

Beate Gröblichhoff

Hamburger Institut für Berufliche Bildung
Hamburgerstr. 131, 22083 Hamburg
☎ +49 40 4 2863 2627 ✉ beate.groeblichhoff@hibb.hamburg.de

HESSE

Joseph Laudien

Hessisches Kultusministerium / Referat III.4
Luisenplatz 10, 65185 Wiesbaden
☎ +49 611 368 2322 ✉ joseph.laudien@kultus.hessen.de

MECKLENBURG- WEST POMERANIA

Martina Negnal

Ministerium für Bildung, Wissenschaft und Kultur
Mecklenburg-Vorpommern / 520-5 – Internationales und
EU-Beziehungen Beruflicher Schulen
Werderstraße 124, 19055 Schwerin
☎ +49 385 588 7610 ✉ martina.negnal@bm.mv-regierung.de

LOWER SAXONY

Christel Schröder

Niedersächsisches Kultusministerium /
Referat 44 – Europäische und internationale Angelegenheiten
Bertastraße 9/11, 30159 Hannover
☎ +49 511 120 7280 ✉ christel.schroeder@mk.niedersachsen.de

NORTH RHINE- WESTPHALIA

Stephanie Pudenz

Ministerium für Schule und Bildung des Landes Nordrhein-Westfalen
Völklinger Str. 49, 40221 Düsseldorf
☎ +49 211 5867 3280 ✉ stephanie.pudenz@msb.nrw.de

RHINELAND PALATINATE

Kerstin Belyea

Ministerium für Bildung
Mittlere Bleiche 61, 55116 Mainz
☎ +49 613 116 2942 ✉ kerstin.belyea@bm.rlp.de

SAARLAND

Jörg Steinhausen

Ministerium für Bildung und Kultur Saarland / Referat D 1 – Berufliche
Schulen, frühkindliche Bildung, Weiterbildung, Sport
Trierer Straße 33, 66111 Saarbrücken
☎ +49 681 501 7475 ✉ j.steinhausen@bildung.saarland.de

SAXONY

Matthias Böhme

Sächsisches Staatsministerium für Kultus / Referat 33 – Grundsätze,
Qualitätsentwicklung, Bildungsmonitoring, Internationales
Carolaplatz 1, 01097 Dresden
☎ +49 351 564 2830 ✉ matthias.boehme@smk.sachsen.de

SAXONY-ANHALT

Dr. Uwe Birkholz

Ministerium für Bildung des Landes Sachsen-Anhalt
Turmschanzenstraße 32, 39114 Magdeburg
☎ +49 391 567 3645 ✉ uwe.birkholz@min.mb.sachsen-anhalt.de

SCHLESWIG- HOLSTEIN

Margit Müller

Ministerium für Bildung, Wissenschaft und Kultur des Landes
Schleswig-Holstein
Jensendam 5, 24103 Kiel
☎ +49 431 988 2549 ✉ margit.mueller@bimi.landsh.de

THURINGIA

Hannelore Markert

Thüringer Ministerium für Bildung, Jugend und Sport
Werner-Seelenbinder- Str. 7, 99096 Erfurt
☎ +49 361 379 4504 ✉ hannelore.markert@tmbjs.thueringen.de

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