



TANDEM



Introduction

The objective of the European Trainer Teacher Tandem project is an effective exchange of knowledge and improvements of teaching in the diverse vocational education and training systems in Europe. Within the framework of the European program Erasmus+, trainers and teachers of vocational education from Italy, Spain, Greece, Denmark, Austria and Germany were brought together in tandems in their real training environments. During six transnational meetings, several trainers and/or teachers from the European partner countries executed jointly selected parts of the practical training, either at an enterprise or in another practical learning environment, such as training centers or workshops at technical schools. This procedure of direct and one-on-one experience allowed the participants to get a deep insight in the different European VET systems on the one hand and to obtain and share (new) ideas regarding training contents, teaching methods, technical equipment and examination on the other hand. The European Trainer Teacher Tandem can therefore be seen as a successful way of networking on an international basis within the area of apprenticeship.

All tandems were carried out in the technical fields of electricity and mechanics, in order to have a better comparison and analysis. As specific tandem methods we identified the approaches of shadowing and joint teaching. The methodology of shadowing concentrates on observing a teaching situation. It allows the host teachers/trainers to watch a training session, to talk to the tandem teachers and the host teachers as well as getting in touch with the students of the host school or the apprentices of a company. Joint teaching, in comparison, foresees an active collaboration of both, host teachers and tandem partners within the same group of students in class. The idea is that one host trainer and one tandem partner hold a common lesson to a group of students of the hosting institution. Both tandem forms were interesting, exciting and effective.

This brochure gives an overview of our experience through the European tandems we organized. The following pages describe each partner country's VET system and show some good practice examples of the participating institutions. The booklet also contains a summary of each tandem and summarizes the statements of our teachers and trainers regarding the realized project-outputs.





Italy

- research and experimentation
- innovative teaching
- networking projects
- future tandems

The Italian VET System:

Although young people can choose from several vocational education forms within the upper secondary level, participation in apprenticeship programs is not very high in Italy and does not focus on initial training. Apprenticeship in Italy, as well as in other southern European countries, is not an essential part of the education and training system. Most of the young Italians either go for school-based education programs after having completed compulsory school. Nevertheless, the apprenticeship system has been reformed within the last years and introduced some new features in order to reorganize the legislation on the dual trainings. This reformed dual system addresses young people aged 15 to 25 and enables the apprentices to complete compulsory education or to acquire a professional qualification or diploma after three or four years of dual training. The training activities, which are provided both in and outside the enterprise, last a minimum of 400 hours per year. Further training at the enterprise can be agreed on thru collective bargaining.



Good Practice Examples at ITCG Deffenu:

The Istituto Tecnico Attilio Deffenu is a public vocational school in Olbia (Sardinia) and provides research and experimentation in education, aiming at innovative teaching and methodology. Its main areas are Building Environment and Territory, Information Technology and Telecommunication, Chemistry and Biotechnology, Transportation and Logistics, Management, Finance and Marketing. In the last 10 years it participated and promoted a number of national and European networking projects with other schools to experiment with teachers and students new models and methods of learning. As seat of an innovative resource center against school absenteeism it has provided also a significant contribution to the development for the recovery of youth problems and the promotion of academic success.

The school offers dual vocational training in 80 companies: private companies and public institutions. All the students of the third, fourth and fifth year go there for 400 hours each during the last three years. At the end of this path each student receives the Diploma and a certificate of the activities performed in the various companies.

The Organization of the future Tandems:

The Organization of the continuing tandems (in Denmark, Austria, Spain, Greece and Germany) was fixed as follows: One or more teachers/trainers from the participating partner countries are invited to execute jointly selected parts of a practical vocational training session, either at an enterprise or in another practical learning environment, such as schools or training centers, for a certain period of time. The tandem, which focuses on

the practical side of VET, will give the possibility to observe, to improve and integrate elements of best practice by learning and/or teaching together. The identified branch/department of the trainers/teachers who participate in the tandem exchange is electricity or mechanics. There are two possible forms of methodology: observing and joint teaching. In both cases, the participants have to focus on some criteria (hard and soft measurable facts) in order to compare the results.



Name Trainer

Statement on the Tandem



Salvatrice Enrica Scuderi
(ITCG Deffenu)

The ETT-Tandem Project will be a very interesting experience for our school, and it could be a good guide for teachers who can work with trainers, and for students who can learn in a more practical way.



Charlotte Lundius
(TEC)

The project supports our continuous focus on teacher/trainer competence building in companies and institutions. We are excited to take part of developing a European model for teacher/trainer tandems.



Antonio Mir Montes
(XABEC)

The ETT-Tandem Project will be very good for the teachers of my school: they can learn their role, working together with the trainer, and comparing what is happening in other countries, knowing the pros and cons.



Juan Manuel Mompó
(XABEC)

One of the most important things, from my personal view, was to reflect on how we can implement the Tandem Model at XABEC and the consequences it could have on the way we are implementing the dual training system.

Name Trainer

Statement on the Tandem



Jürgen Wolf
(BFI OÖ)

With the European Teacher Trainer Tandem we are going to establish a model of how transnational tandems can be prepared, set up, carried out and analyzed. A further goal is facilitating to build up future networks.



Svenja Prinz
(ZWH)

In Italy, all partners of the ETT Tandem project met for the first time to set the common basis for the project phase. Former experiences have been exchanged and first ideas of the processes and criteria for the tandem model have been discussed. It has been very important for ZWH as the coordinator to bring together all the different ideas and expectations and find ways to put up the model that are satisfying for all partners.



Giovanni Antonio Addis
(ITCG Deffenu)

The first meeting was very interesting because I could learn all about the partnership and also because we could all agree on the future path of the project. This is very important because the success of a project is largely in the planning and in the rules that are established.



Georgia Anousaki
(OAED)

Coming to the kick-off meeting, there were various opinions about the central outcome of the project and how to reach it. It was a productive meeting that brought everyone on track towards a common goal.



Denmark

- professional specialization
- globalization
- internationalization
- strong cooperation

The Danish VET System:

Overall, the level of education of the Danish people is one of the highest in the Europe Union. The aim of the government is that 95% of young people should finish the upper secondary education with a successful outcome and 50% should follow a course in a higher level. Therefore, the vocational secondary education and training (VET) is an important factor in this system. With a combination of teaching in vocational schools and an apprenticeship, the trainees have the chance to learn a trade in different professional guilds. The vocational education starts after the compulsory primary at the age of 15, 16 and takes 2 to 5 years. The main target of this education is to integrate the young people into the labor market and to qualify them for a specific job. Thus, the students can choose between 8 main groups of specific professions like building; crafts and technique or technology and communication.

Good Practice Examples at TEC Copenhagen:

As the second largest vocational training college in Denmark, TEC has a long history and experience in the area of vocational training for students. The collage has 5 different campuses with about 4.755 full time students in 2014 and more than 800 employees.

Today, the growing internationalization and globalization are essential elements in the labor market. Also, TEC has noticed that. Innovation, inter-cultural competencies and a high level of professional specialization are important skills for success in business. Therefore, the collage offers multicultural educational programs and courses. In addition, TEC has a strong cooperation with social partners, companies and institutions in Denmark and abroad. All these measures make sure, that the students from TEC are well prepared for the new needs of labor market.

The Tandem:

After an insight into the Technical Education Copenhagen, the main point of the Danish Tandem was to visit different family owned companies. Beside to gain an insight in the daily grind of the enterprises, the tandem teachers had the chance to observe, to talk and to discuss with the trainers of the apprentices. In addition, it was helpful to get information about the different costs for apprentices (company, school) and how the funding is regulated by law.

Institution Participants	Target Group	Methodology	Area	Level of Students	Participants
Roder & Mortensen	Management Group Trainers/Teachers	Shadowing Observing Interviewing	Electrical Engineering Management of Apprenticeship	1st and 2nd and 3rd year of apprenticeship	9
Fugmann Trainers/Teachers	Management Group	Shadowing Observing Interviewing	Electrical Engineering Management of Apprenticeship	1st and 2nd and 3rd year of apprenticeship	9
Training Center TEC	Management Group Trainers/Teachers	Shadowing Observing Interviewing	Electrical Engineering Management of Apprenticeship	1st, 2nd, 3rd, 4th year of apprenticeship	18

Country	Institution	Teachers	Area	Tandem Area
Italy	ITCG	Giovanni Antonio Addis	Electricity	electric training at company site
Greece	OAED	Dimitris Kampakis	Electricity	electric training at company site
Austria	BFI OÖ	Edda Holzbauer	Electricity	electric training at company site
Spain	XABEC	Vicente Belenguer	Electricity	electric training at company site
		Serafín Fernández	Electricity	electric training at company site
		Javier Lázaro	Electricity	electric training at company site
Spain	TEC	Bent Kimer	Electricity	Tandem Coordination
		Kim Enggard	Electricity	

Name Trainer



Javier Lázaro
(XABEC)



Giovanni Antonio Addis
(ITCG Deffenu)



Edda Holzbauer
(BFI OÖ)



Vicente Belenguer
(XABEC)



Serafín Fernández
(XABEC)

Statement on the Tandem

We were able to observe the students doing their work directly. What attracted my attention was the autonomy and responsibility of the students we visited. We had several working meetings where we analyzed the relationships between companies and the school of each of the participants. We draw practical conclusions on how to improve them.

Being a teacher who belongs to a school system where the VET system is in the process of structuring, attending a consolidated experience in a system that has long time invested in the dual system, was certainly an important experience from a professional point of view.

I was struck by the autonomy of the students in performing their tasks as if they were real workers.

I was surprised to see apprentices on such a high level educated, working on their own in all areas of building site. Also there is a high English-language level spoken by all apprentices. Another gratifying point is that it's very common for adults to become an electrician after finishing the university.

The most important of the experience was to see how DTS is managed in other European countries and I was impressed by the positive assessment of the three parties involved: student, training centre and company.

At the professional level, I would like to highlight the opportunity to follow up on a real day in the life of a Danish dual training system. From this observation, we have been able to extract many positive experiences that can be translated into the dual training model of our school in Spain.

On the personal level, sharing a few days with people from other countries with the same professional concerns is always very gratifying, and a reflection point to set new goals of personal growth.



Austria

- different target groups
- different approaches
- apprentices with special needs
- second chance

The Austrian VET System:

The Dual Education System is strongly established in Austria. Apprenticeships are a combination of practice-oriented training at companies (80%) with the teaching of subject-related theoretical know-how and key skills at part-time vocational schools (20%). The apprentice has a contract with the training company and gets a salary during the apprenticeship. For each profession there is an Austria-wide training regulation. An apprenticeship lasts between two and four years and ends with a final examination at the Chamber of Commerce. For those young people who cannot find an apprenticeship in the labor market, a vocational dual/trial training at VET-institutions (such as BFI OÖ) is provided. These programs also intend to get more girls into technical professions.

Good Practice Examples at BFI OÖ:

Funded by the Austrian Public Employment Service and partly by the State of Upper Austria, BFI OÖ offers projects to disadvantaged young people, dropouts and NEETs who are willing to start/continue a vocational education through (external) apprenticeships. Apart from the theoretical and practical vocational training, there is a strong focus on orientation and stabilization, special tuition and social skills. In these programs the trainer has to wear many hats. He/she is a supervising foreperson, an individual coach, a special tutor and a social worker.

Within external apprenticeships there is a close connection between training companies, training centers, part-time vocational schools, the Chamber of Commerce and the Public Employment Service. Whereas bigger companies and VET-providers run an own training center, smaller companies which are not able to fulfil the whole apprenticeship curriculum can send their apprentices to a training alliance in order to get them fully trained. In all cases the trainers have to undergo a pedagogical train-the-trainer-program in order to take over the (social) responsibility for their students.

One of the main ideas is to have a close integration of working and learning places. At part-time vocational schools students are supposed to do the same exercises like they have to do in companies. For this reason theory and practice are taught in the same classroom/lab. The trainers inspire the apprentices by setting a good example and stay with the apprentices the whole time.

The Tandem:

The main focus of the Austrian Tandem was set on observing and shadowing. According to this methodology the tandem teachers had the chance to talk to the trainers of BFI, the trainers of the company and the apprentices. Divided into small groups of two or three, the tandem teachers shadowed and interviewed the staff of the milling/turning department, the CNC programming department, the welding department and the electric lab. On the following day the teachers group continued with the trainer/teacher shadowing and with interviewing/shadowing the apprentices.

Institution Participants	Target Group	Methodology	Area	Level of Students	Participants
Part-time VET School	Management Group	Shadowing Observing Interviewing	Electrical Engineering Electronic Technology Mechatronics	1st, 2nd, 3rd, 4th year of apprenticeship	8
Production School	Management Group	Shadowing Observing Interviewing	Bicycle Repair Wood Processing Storage/Logistics Retail Trade Service Catering Industry Office/Computing	Pre-vocational	8
Training Center RIC (BRP Rotax)	Teachers/Trainers	Shadowing Observing Interviewing	Mechatronics Production Technology Machining Technology Metal Technology Aircraft Technology Automotive Technology	1st, 2nd, 3rd, 4th year of apprenticeship	11

Country	Institution	Teachers	Area	Tandem Area
Greece	EPAS	Dimitris Kompakis	Electricity	electric lab, electric seminarroom, apprentice shop for metalwork and machining, training room
Spain	XABEC	Miguel Angel Puchades	Electricity	electric lab, electric seminarroom, apprentice shop for metalwork and machining, training room
		Ricardo Lloret Ignacio Ferrer	Mechanics Mechanics	apprentice shop für metalwork amd machining, training room apprentice shop für metalwork amd machining, training room
Denmark	TEC	Charlotte Lundius Bent Kimer	Management Electricity	apprentice shop für metalwork amd machining, training room electric lab, electric seminarroom, apprentice shop for metalwork and machining, welding workshop, training room
		Allan Dahl Petersen	Mechatronics	electric lab, electric seminarroom, apprentice shop for metalwork and machining, welding workshop, training room
Italy	ITCG	Giovanni Antonio Addis	Electricity	electric lab, electric seminarroom, apprentice shop for metalwork and machining, training room
Germany	ZWH	Josef Dahl	Electricity	electric lab, electric seminarroom, apprentice shop for metalwork and machining, welding workshop, training room
		Mirko Marhauer	Mechanics	welding workshop, apprentice shop for metalwork and machining, training room
Austria	BFI OÖ	Edda Holzbauer Siegfried Hattinger	Mechatronics Mechanics	Tandem Coordination

Name Trainer



Bent Kimer
(TEC)



Ricardo Lloret
(XABEC)



Miguel Ángel
Puchades (XABEC)



Ignacio Ferrer
(XABEC)



Giovanni Antonio
Addis (ITCG Deffenu)

Statement on the Tandem

Learning in practice shows that we achieve experience and an understanding of the context, when an apprentice, who also is a student, work part.

It is very important that the teachers know well the companies where the students will go to work and the different process inside the organization. In Linz we could see a training school inside the factory, where the students make the same pieces that they will make in the future in the company.

The meeting had a big impact in XABEC as it was a starting point for rethinking our methods and helped us (in particular myself) to improve the relationships between the school and the companies involved in the dual training system.

It was very interesting to know the relationship between companies and Vocational Training Centres in the Austrian educational system. I would like to emphasize that the main difference between the Austrian and the Spanish educational system is that the first is a company-based system, while the second is totally school-based.

It was also interesting to know the courses that a company delivers for adult people: not only for the company staff, but also for unemployed people who look for a chance in a different professional sector.

The meeting in Linz was very helpful for my personal and professional path, because I have been able to verify the relationship between companies and vocational training centres in the Austrian school system.

The Austrian system is very different from the Italian one, because in Austria we found a great integration with the productive world, that in some cases, (as in the case of the Rotax company which we visited), provides laboratories and contributes financially.



Spain

- high quality
- real workplace
- close relationship
- project x

The Spanish VET System:

In Spain young people can choose between school-based vocational training or the dual track training which is rather new and was introduced in 2012. School-based VET programs last one to two years and end with a certificate for intermediate or higher level. 25% of its contents are considered practical, work-based trainings whereas the main part of 75% is organized in school-based learning. On the other hand, dual track structures have been established to support young people in transition to the labor market. The autonomous regions are responsible for the dual VET programs. In those regions where this new program has been introduced already, participants are not only considered students but employees covered by labor contracts. Salary claims for training and learning are not guaranteed by law. It is up to the company that provides work-based training to decide whether to pay a wage to the apprentice or not.

Good Practice Examples at XABEC:

XABEC, a vocational training center for technical professions, offers both, school-based education and the dual track system. Within the dual training, 50% of the curricula are taught at school and 50% are acquired while working as an apprentice in a company. In this case the student gets an apprenticeship contract as a worker of the company. He or she receives a salary or perceives financial honoraria.

At XABEC, the relationship between the college and the companies is very well organized because teachers and trainers are strongly connected. Both, teachers and trainers play the role of a mentor, more than an authority. At school theory and practice are well integrated because the classroom is the workshop and the teacher teaches both, practice and theory. The use of high quality teaching material is another key for success.

As a result of pedagogical innovation, XABEC invented the Project X philosophy. The Project X is a pedagogical methodology that brings closer schools and companies and boosts the mobility of teachers, trainers and students. It is a methodological guide, developed on the basis of learning outcomes for the student to carry out a concrete activity in which theory and practice are both perfectly integrated, which is related to a real workplace in a company.

The Tandem:

The aim of the Spanish Tandem was teaching together within a technical workshop. For this purpose 5 Projects X were implemented during the meeting in Valencia. In advance, teachers from XABEC had prepared those projects X together with their tandem partners via mail and skype contact. All tandem partners had to fill in a questionnaire for the Spanish organization team in order to give as many details as possible about the planned activities in the workshops. In addition, the Spanish teachers prepared all materials and coordinated the lessons. On the first day of the meeting the teachers and trainers from Spain as well as the teachers/trainers from the partner countries got to know each other personally and fixed the final details for the project X. On the following day, the joint teachings were realized in mechanical and electrical workshops.

Institution	Target Group	Methodology	Area	Level of Students	Participants
Mecanizados S.A.	Management Group	Shadowing Observing Interviewing	Mechanics Electricity Automation	1st and 2nd year of	12
Vocational School (XABEC)	Management Group Teachers/Trainers	Shadowing Observing Interviewing	Mechanics Electricity Automation	1st and 2nd year of apprenticeship	25
Vocational School (XABEC)	Teachers/Trainers	Project X	Electricity Mechanics	1st and 2nd year of apprenticeship	11

Country	Institution	Teachers	Area	Tandem Area
Greece	EPAS	Dimitris Kompakis	Electricity program	Simple lightning circuit with 4/5 outputs. Loading the to the PLC to be ready for application
Denmark	TEC	Kim Enggaard Laila Jensen	Electricity	Safety measures in Denmark
Germany	ZWH	Mirko Marhauer	Mechanics	How to handle milling machines, drill metal and cutting by threads by hand into metal
Austria	BFI OÖ	Edda Holzbauer Siegfried Hattinger	Electricity Mechanics	Soldering: how to handle a soldering station Conventional turning (lathering): how to handle a turning machine
Spain	XABEC	Javier Pérez Victor Novoa Abel Claro Pablo Giner Juan Manuel Mompó	Electrical Mechanics Automation Electrical Mechanics	Tandem Coordination Implementation of ProjectX

Name Trainer



René Kjaergaard
Frost (TEC)



Siegfried Hattinger
(BFI OÖ)



Mirko Marhauer
(HWK/ZWH)



Javier Lázaro
(XABEC)



Dimitris Kompakis
(OAED)

Statement on the Tandem

I asked myself - Why do I send my teachers to Spain? I did so because it gives my teachers an opportunity to gather pedagogical and personal experience from other teachers and the environment they act in.

It was very interesting to see how Xabec had organized the co-operation between Xabec and companies, as well as the personal relationship between the company, student and teacher.

I think it was a good idea that Xabec is placed in an old cinema - "Where there's a will, there's a way." And it was very important that the apprentice spoke English so well for granting that very good connection between Austrian trainers and the apprentices.

In Valencia I made a fantastic experience, teaching together with the highly motivated and fantastic teachers of XABEC. I would love to come again and also exchange some of our students!

We had the opportunity to host two activities: a round table with schools and a debate between stakeholders (Trade Unions, Chamber of Commerce and the Regional Ministry of Education) that let us view our educational system from different points of view.

Excellent collaboration. XABEC is a good practice example how a VET school can operate based on moderate means. Their operation as private institute, offers great deal of flexibility in programmes, relations with companies, selection of teaching staff, etc. Their equipment offered equal opportunities for high level technical training, to those even offered at ROTAX training centre.



Greece

- high motivation
- strong involvement
- good commitment
- great efforts

The Greek VET System:

The Education System in Greece has consequently set a strong focus on general education during the last decades. For many years vocational education has been the second choice among pupils and their parents. Less than 30% of the Greek students in the last decade chose vocational education trainings whereas a majority of students completed general education schools in order to continue studying at universities. Nevertheless, there are two options for vocational education. One is the three years lasting Vocational Lyceum (EPAL), a mainly school-based vocational program which contains both occupational and general knowledge. The other option is the Institute for Vocational Education Training (EPAS) which offers a two year lasting apprenticeship program in cooperation with private and public companies. As a result of the high unemployment rate, especially among young people, and due to the lack of skilled workers at the same time, (dual) vocational training starts playing a more and more important role for the Greek labor market.

Good Practice Examples at EPAS/OAED:

OAED, the Greek Public Employment Service, offers dual vocational training in 35 approved fields of study thru-out their 51 apprenticeship schools (EPAS) all over the country. Students attend school classes once per week in the morning and four times per week in the afternoon. At the same time, four days per week they practice in activities associated with their specialty at companies.

At EPAS there is a close relationship between the teachers of the VET school and their students. As practical training is not regulated by law in Greece, teachers act as mentors and supervisors in all stages of vocational education. Teachers are strongly involved in practical training and finding companies and apprenticeships for their students.

Although the standard of the technical equipment at VET schools is not as high as in other European countries, both, teachers and students are highly motivated and try to make the most out of it. Both groups concentrate on the main aspects of learning and teaching in a good way and show great efforts and a strong will in order to succeed in dual vocational training.



The Tandem:

The focus of the Greek Tandem was set on three areas: Automotive Technology, Metal Construction and Electric Technology. During the Tandem, the host teachers observed the training activities which were conducted by the training staff of EPAS. Furthermore the host teachers had the chance to bring in their personal and professional experience. A special work plan for each lesson had been prepared and sent to the host teachers by EPAS in advance. It contained theoretical knowledge and practical working assignment as well as the learning outcomes each student should have reached at the end of the lesson. Finally, at a round table, the (host) teachers and the students had the opportunity to discuss the different VET-Systems and the impressions of the tandem.

Institution	Target Group	Methodology	Area	Level of Students	Participants
MAXX MOTORS A.E.B.E	Management Group Engineering	Shadowing Observing Interviewing	Motor Vehicle Office Assistant	1st and 2nd year of apprenticeship	12
Power Plant Agios Dimitrios	Management Group Trainers/Teachers	Shadowing Observing Interviewing	Office Assistant Auto Body Technician Auto Electrician	1st and 2nd year of apprenticeship	20
Apprenticeship School (EPAS Kozani)	Teachers/Trainers	Shadowing Observing Interviewing Active Participation	Automotive Technology Electrical Technology Metal Construction Hairdressing General Nursing Assistant Pharmacy Assistant Auto Body Technician Office Assistant Plumping and Thermal Fixtures Technician Computer Support Systems Technician Auto Electrician	1st and 2nd year of apprenticeship	11

Country	Institution	Teachers	Area	Tandem Area
Denmark	TEC	Gräs Jasper	Mechanics	vehicle technology, engines and systems: breaking systems, examples electrical technology: indoor electrical installation with automatic switchgear for staircase
		Christian Thousig	Electricity	
Italy	ITCG	Giovanni Antonio Addis	Mechanics	mechanical design and construction: welding, symbols for welding, examples
Germany	ZWH	Mirko Marhauer	Mechanics	mechanical design and construction: welding, symbols for welding, examples
Austria	BFI OÖ	Edda Holzbauer	Electricity	electrical technology: indoor electrical installation with automatic switchgear for staircase vehicle technology, engines and systems: breaking systems, examples mechanical design and construction: welding, symbols for welding, examples
		Siegfried Hattinger	Mechanics	
Greece	EPAS	Fotis Vlamis Sannas Ioannis Zambakas Parmenion	Mechanics Electricity Auto Mechanics	Tandem Coordination

Name Trainer



Christian Thousig
(TEC)



Dimitris Vlamis
(EPAS)



Edda Holzbauer
(BFI OÖ)



Giannis Sannas
(EPAS)



Parmenion Zampakas
(EPAS)

Statement on the Tandem

Interacting with representatives from 5 different countries has given me a broader view of the education system that I operate in on a daily basis. In particular my focus has been on the educational use of IT in my teaching. However, the experiences in Kozani reminded me that there are other ways to educational development besides the implementation of new technology. This is important to remember.

I had the opportunity to learn about teaching methods in other countries and to try new approaches to teaching that were also welcomed by the students. I wish there are more such opportunities.

The conditions of teaching and learning in Kozani are quite different from ours in Austria. The teachers are working indescribably hard to make a change. There is a close relation and close collaboration between teachers and apprentices in OAE.

Personally, this experience had its challenges but also proved to be very interesting. I feel that this transnational collaboration added to my skills as a teacher. Above all, the students found it very interesting.

The Tandem was a challenging experience. Thinking about the whole preparation and realization afterwards, I feel very satisfied that we did something meaningful for us as teachers and for our students.



Germany

- extensive experience
- professional support
- modern services
- broad spectrum

The German VET System:

According to the German Vocational Education System, pupils may enter into vocational training in full-time schools or within the framework of the dual system, after having completed compulsory education. Similar to other countries which have a strongly established apprenticeship structure, the students conclude a contract with their training company where the practical training takes place 3-4 days a week. Companies also pay their apprentices a salary as regulated by collective agreement. Besides, the trainees attend part-time vocational school on one or two days weekly, where they are mainly taught theoretical and practical knowledge related to their occupation. In order to provide a high quality education there is a strong cooperation between all the stakeholders involved. Besides training companies and part-time vocational schools, also training centers and the Chambers are playing a very important role in Germany's VET system, as they have been assigned public tasks in dual training.

Good Practice Examples at ZWH/HWK:

Offering wide-ranged and modern educational services for the skilled crafts, ZWH provides a broad spectrum of educational services and cooperates with a wide range of national and international partners. It has successfully completed more than 70 publicly funded national and international VET projects and has extensive experience in the organization and implementation of vocational training policy funding programs, projects and activities.

In this sense, ZWH cooperates, among others, with HWK Hildesheim, a regional Chamber of Handicrafts, which runs its own training center for handicraft professions. The training center offers special training courses about those contents which are not taught in company or at part-time vocational schools. Furthermore, HWK supports young people in the search for the right apprenticeship profession and in finding an adequate training company.

The involvement of training centers allows apprentices from different (sized) companies to learn together, which is desirable for all participants. In this way the students do the same exercises like they have to do in companies but within a spatial combination of classroom and working station. The holistic approach of teaching and learning requires the students to combine all subjects and to operate in a reflecting, problem-solving manner.



The Tandem:

The German Tandem mainly followed a shadowing methodology. All international tandem partners were invited to join different workshops in order to observe and compare training contents, training equipment, training methods as well as the level, age and behavior of the students. Both, tandem teachers and trainers could get good impressions of how German VET students are taught in technical areas. Furthermore, the local and the tandem teachers/trainers had the opportunity to exchange experiences regarding the different VET systems in Europe.

Institution	Target Group	Methodology	Area	Level of Students	Participants
Liedtke GmbH	Management Group	Shadowing Observing Interviewing	Sanitary, Heating and Cooling	1st and 2nd and 3rd year of apprenticeship	10
Otto Otto GmbH	Trainers/Teachers	Shadowing Observing Interviewing	Precision Mechanics Electricity	1st and 2nd and 3rd year of apprenticeship	12
Training Center BBZ Hildesheim	Teachers/Trainers	Shadowing Observing Interviewing	Precision Mechanics Metalworking Sanitary, Heating and Cooling Automotive Engineering Welding Woodworking	1st and 2nd and 3rd year of apprenticeship	12

Country	Institution	Teachers	Area	Tandem Area
Denmark	TEC	Gert Hansen Laila Jensen	Sanitary, Heating and Cooling Electricity	Sanitary, Heating and Cooling Sanitary, Heating and Cooling
Italy	ITCG	Giovanni Antonio Addis	Electricity	Sanitary, Heating and Cooling
Greece	OAED	Pavlov Votsis Antonios Zarouchas	Electricity Electricity	Automotive Engineering Automotive Engineering
Austria	BFI OÖ	Edda Holzbauer Siegfried Hattinger	Electricity Mechanics	Metalworking/CNC Metalworking/CNC
Spain	XABEC	Vicente Belenguer Eduardo Crespo Carlos Hoyos Juan Manuel Mompó Miguel Ángel Puchades	Electricity Electricity Electricity/Automation Mechanics Heating and Cooling	Precision Mechanics/CNC Precision Mechanics/CNC Automotive Engineering Automotive Engineering Precision Mechanics/CNC
Germany	HWK	Mirko Marhauer	Metalworking	Tandem Coordination

Name Trainer



Juan Manuel Mompó
(XABEC)

Statement on the Tandem

The German dual system is great in many ways. I could experience how the students are highly motivated when they go to the training center since they feel the necessity of the training in advance.

The role of ZWH talking to High school students one by one in order to help them finding the path for a future profession is the key and we have learned a lot on how to proceed in both a professional and attractive manner.



Carlos Hoyos
(XABEC)

I really like how the company is involved in the training of the student: he/she is part of the company.



Eduardo José Crespo
(XABEC)

Regarding the Dual Training System in Germany I like how the companies are involved in the training of the youth and how the student learn in an autonomous way.



Pavlos Votsis
(OAED)

The dual vocational training system of Greece and Germany is similar one to the other. In the European Union the exchanging of apprenticeship's best practices must be continued.



Siegfried Hattinger
(BFI OÖ)

The students seemed to be very concentrated. The workshops are on a high level and the trainers' way of teaching too. Generally it was a good atmosphere.

Conclusion

The internationalization and globalization of the labor markets can offer a lot of chances. Working abroad is one aspect, learning and teaching in an international ambience is another one.

According to our practical experiences within this Erasmus+ project, the European Trainer Teacher Tandem with its involved partner countries was a raving success. Based on this cooperation all partners had the chance to get new insights in teaching and working methods, technical equipment or about regulatory frameworks. The tandems allowed the participants to compare their own approaches with other possibilities and provided a great way for improvements and adjustments within the area of training and education. The learning effect was achieved thru the two main key points of observing/shadowing and active joint teaching within technical workshop sessions. Furthermore, the project gave us the opportunity to build up an international network of European VET-providers, such as technical schools, training centers, companies and chambers of handicraft.

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TANDEM



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