



Promotion and development of dual training in the Catalan University System

Second edition of the report



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Introduction

Based on surveys of the opinions of employers with regard to the training of graduates that have been conducted in recent years by the Catalan University Quality Assurance Agency (AQU Catalunya), the ability to solve problems and make decisions, as well as practical training, are areas that need to be improved on most university degree programmes.

In this regard, dual training, based on the principle of complementarity of learning in both an academic and a professional environment, can foster the right balance between the competencies and skills that young people acquire at university, and those required by society and the labour market. At the same time, it could be a useful tool to improve graduate employability. It may also be particularly relevant in the face of disruptive changes to the future of labour brought about by technological progress and in difficult times, such as the economic and financial crisis that began in 2008 and the socio-economic crisis caused by the outbreak of COVID-19.

This modality of education calls for major strengthening of the collaborative ties between the university and business worlds, which are both held responsible for the training, monitoring and evaluation of the learner. In addition, there is a need for the complicity of institutions, which are responsible for establishing the necessary legal framework through the promotion of specific contractual references, funding policies and official academic recognition of studies.

The publication you have in your hands is the second edition of the report on *Promotion and Development of Dual Training in the Catalan University System*. The first was presented by the Catalan Association of Public Universities (ACUP) in late 2014 in the framework of the Knowledge, Territory and Innovation Platform (*Plataforma Coneixement, Territori i Innovació*, CTI Platform), a programme that promotes social progress, economic competitiveness and cultural vitality in Catalonia through stable cooperation between universities, industry, public administrations and civil organisations (the so-called quadruple helix).

Directed and coordinated by Dr Ferran Badia, a professor at the University of Lleida (UdL), a pioneering institution in the implementation of dual training in higher education in Catalonia, this report includes new contents in response to the change of climate that has occurred since the presentation of the first edition. Indeed, in recent years there has been a highly significant upturn in terms of the degree of knowledge among society with regard to this modality of learning, the quality of programmes designed by universities, the willingness of companies and organisations to participate and, above all, the political will to foster it, both at a state and Catalan level.

In the full conviction that in order to set up its own model for dual university training, it is essential to involve and interrelate the many stakeholders in the region, and who are all driven by different motivations, ACUP has gathered different opinions in this report: on the one hand, those of its member universities, coordinated through an ad hoc working group that meets periodically; and on the other hand, those of non-university agents (governments, employers, chambers of commerce, unions, foundations and so on), as well as national and international experts that the association has interviewed over the last year in the framework of bilateral meetings.

In addition, the report compiles the main reflections and proposals extracted from the 7th Catalunya Futura Seminar that, under the title *Dual University Training for the Promotion of the Knowledge Society*, was held on 15 December 2020 by ACUP in association with the “la Caixa” Foundation and with the support of the Secretariat of Universities and Research of the Government of Catalonia.

The publication consists of three chapters. The first of these resumes and revises the work done for the first edition of the report, in which the term ‘*dual university training*’ was defined and the five basic principles or cornerstones were determined, as well as the main benefits.

The second chapter includes an analysis of experiences and good practices regarding dual training in higher education in other European countries, essentially in Germany and France, which, adapted to the particular educational, social and economic characteristics of our own country, can serve as a source of inspiration when it comes to promoting and developing our own model. The results of some European projects in this field are also evaluated; while emphasis is placed on the case of Spain, particularly to examine experiences and good training practices implemented in the Basque Country's university system and to predict how the ongoing modification of the current legal framework (Royal Decree 1393/2007, of 29 October, which establishes the organisation of official university education) could help to extend dual training around Spain.

The third chapter begins with an analysis of the status of dual training at Catalan public universities that have already launched pilot programmes on bachelor's and master's degrees. The best strategic, institutional and didactic-pedagogical conditions to promote and develop this modality of learning are then examined. This is all done in the current context, marked by the recent approval of the National Pact for the Knowledge Society (PN@SC) and taking as a reference the document *Guidelines for the*

Verification and Implementation of Dual Training on Official University Degrees, produced by AQU Catalunya. It also considers the achievements in the field of dual training in *Cicles Formatius de Grau Superior* (Higher Vocational Education and Training) in Catalonia and on the *Pla de Doctorats Industrials* (Industrial Doctorate Plan), while noting the lessons learned that could be useful to promote and develop a model for dual training in higher education. Finally, the section includes the views of chambers of commerce, employers and unions, the main socio-economic agents, and considers the opinions of the three actors who personify cooperation in dual university training: the apprentice/student (A), the academic or university tutor (UT) and the company/organisation tutor (CT).

To conclude, as the product of this extensive work of shared reflection, a series of political and institutional as well as organisational and pedagogical proposals are made that ACUP intends to pass on to all agents of society involved in the promotion and development of a dual university training model. It is now up to them to determine the scope and possibilities of the dual model as a means to improve the training of our young people, help companies and organisations to develop and innovate and, ultimately, promote the progress of Catalan society so it can be consolidated as a true knowledge society.



01

**Dual university training:
principles and benefits**

1.1. Relevance of dual university training in the face of disruptive changes in the modern world

The emergence of unprecedented economic, social and environmental challenges has had a direct impact on higher education systems, which have undergone evident transformation over the last two decades.

One of the factors that explain this evolution is, without a doubt, technological progress (digitisation, artificial intelligence, robotics, big data and so on) and the impact it has on the labour world. Indeed, these disruptive changes, which have happened in almost all sectors, highlight the need to develop new university teaching and learning models, as well as to forge new professional profiles that are adapted to the new markets, industries and jobs that will be created, while others will be transformed or disappear. The global economy and knowledge societies increasingly require highly skilled and qualified workers.

Various studies and surveys of companies and organisations emphasise the importance of training in the kind of transversal competencies and skills that universities must inevitably include in curricula as a complement to theoretical knowledge. An example of this is the different sectorial surveys carried out in recent years by the Catalan University Quality Assurance Agency (AQU Catalunya), which gather employers' opinions about graduate education. According to these surveys, the ability to solve problems and make decisions, as well as practical training, are the main competencies that need to be improved on most university degrees. In order to make up for these detected deficits, it is proposed that compulsory internships in companies or organisations should be included in curricula and courses should be made more practical and labour market-oriented.

In this regard, dual training, based on the principle of complementarity of learning in both an academic and a professional environment, can foster the right balance between the competencies and skills that young people acquire at university and those required by society and the labour market.

At the same time, this modality of education can be an appropriate tool to improve the employability of graduates, an area where Spain has much lower levels than those of other countries around it. According to Eurostat data, in May 2021 the youth unemployment rate was 17.3% in the European Union and 17.5% in the euro zone¹; figures that, it should be noted, were significantly worse than the previous year due to the outbreak of COVID-19. In Spain, as we said, the figures are much higher, around 36.9%, and only below Greece with 38.2%.

Many programmes have been launched by the European Commission to address this situation while contributing, thanks to the potential of young people, to the promotion of the necessary digital and green transitions². Today, the Commission is urging the Member States to intensify support for youth employment by making use of the significant funding available through the Next Generation EU programme and the EU's long-term budget. It has been established that at least 22,000 million euros should be spent on support for youth employment.

1. Eurostat: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Unemployment_statistics#Youth_unemployment

2. Youth employment support:
<https://ec.europa.eu/social/main.jsp?catId=1036>

Dual university training must adapt to the evolution of new technologies in order to consolidate the digital competencies of young people and adults, without forgetting non-automatable human competencies (e.g. learning to deal with problems from different perspectives, fostering and exploiting creativity, participating in complex communication, promoting critical thinking and so on).

In this scenario of an instable and complex professional and labour environment, people need to be adaptable and mobility-inclined. This change in the way work is organised has given rise to the concept of competency as a training goal. In addition to the specific competencies of each degree, the competency-based approach requires vocational actions that involve finding answers in new or changing situations and that deal with constant evolutionary developments.

In addition to all this, we now have the impact generated by the COVID-19 pandemic, which has required unprecedented individual and collective reorganisation of the entire university community. As a result of this situation, an unheard-of and palpable process of transformation has arisen that has required and stimulated creativity and innovation at all universities which, with the support of their structures, has vastly enhanced the existing actions and resources for online education, while also very clearly identifying certain future challenges. It is essential for dual training to provide a response to the objectives both in terms of qualifications and professionalization, and for it to be a coherent form of pedagogy that connects two places of learning as part of the same training project, while being unaffected by the reduction in face-to-face teaching as a result of movement restrictions and lockdown measures being enforced in order to prevent the pandemic from spreading.

1.2. Scope of the term *dual university training*

As noted at the beginning of this report, dual training is based on the principle of complementarity of learning in an academic and a professional environment, and turns the student into an apprentice who is studying. The university and company/organisation are both responsible for the apprentice's training, assessment and monitoring, and work closely together to offer and develop a training project that guarantees the achievement of the required competencies.

Dual training is a complex form of training that requires the right organisation and structure to ensure that a learning process that alternates between two environments remains coherent.

Dual training and learning are two inseparable and intrinsically related concepts. This modality of education offers the conditions to facilitate and give meaning to learning, and requires a pedagogy that is learned through practice and highly flexible programmes, teachers and institutions.

The interest of dual training lies in the fact that the company/organisation is not merely a place where theoretical knowledge is consolidated, but is also one that offers experimental situations that will foster the acquisition of competencies. This kind of system must consider the full variety of stakeholders both inside and outside the company/organisation (institutional, pedagogical, financial, etc.) and promote joint work. Dual training enables preparation for a degree while at the same time acquiring solid professional experience of benefit to both learning environments.

Dual training is perceived as another way of learning, as it offers the opportunity to begin an education process in which experience is also acquired in complementary areas of training.

Dual training experienced in contiguity does not in itself foster “cognitive pairing” between formal knowledge and practical knowledge, for coherent strategies need to be “invented” or modelled in order for such training to be done at universities.

In dual training, the apprentice integrates the knowledge acquired in an academic situation with that learned in a professional situation. It needs to be constructed in such a way that the two training periods are coherent with each other, while attention must also be paid to pedagogical engineering, which is the key element that relates the three main actors in the process: the apprentice/student (A), the academic or university tutor (UT) and company/organisation tutor (CT).

1.3. Fundamental principles of dual training

This section continues with a revised identification of the five fundamental principles of a dual, or vocational-oriented, training system, as were already defined in the first edition of this report.

- 1. Recognition of a unique training period** that refers to two types of sequence, which must be coordinated and must be complementary and interactive: one in an academic environment and another in a professional one. This training period must be devised and constructed by both the university and the company/organisation. Thus, the company/organisation becomes a real place for training

and the acquisition of knowledge, competencies and experience, rather than simply a place to put the learning acquired in the academic environment into practice. This means that the company/organisation is co-responsible with the university for training and for the assessment of the activities carried out by students.

- 2. General piloting of the dual training** process that is structured and organised and that associates the elements that are juxtaposed between the university and the company/organisation in such a way that the training is shaped into a coherent system. This organisational process must bear in mind all of the agents involved so that they can participate actively throughout its entirety.

- 3. Guidance through a system of recognised tutorials that are not limited to mere transmission of knowledge.** Guidance and double tutoring are key elements of dual training. Each apprentice must have a company/organisation tutor and an academic tutor, who will accompany him/her throughout the training process to ensure that he/she acquires progressive autonomy and develops thinking skills and both professional and academic competencies. The tutors are also responsible for establishing the necessary cooperation between the university and the company/organisation in order to monitor the process and ensure the proper integration of different learning.

4. Labour contract for the apprentice from the beginning of the training.

The company/organisation and the apprentice establish a contractual relationship in the form of a specific dual training employment contract. This contract grants the apprentice employee status. During the training period, each apprentice is given a position of professional responsibility in a work community.

This employment contract means that the apprentice and the company/organisation assume the equivalent responsibilities, rights and duties, as they would with regard to any other worker, while recognising the educational dimension of the contract, and the apprentice receives payment corresponding to his/her work. Current labour regulations do not detail any specific contract for dual training, hence the need to resort to other kinds of contract or other legal relationships to cover the student's activity in the company/organisation. In whatever case, the student must receive payment for this relationship. Exceptional situations may arise in which it is not legally possible to hire a student in such a manner, such as when the organisation or company is part of Public Administration, or in cases of global or sector economic crises. In these exceptional situations, forms of relationship other than an employment contract may be admitted, provided that they guarantee that the apprentice will undertake a complete training programme alternating between the company/organisation and the university.

5. Formal recognition that regulates the apprentice's full set of professional competencies

and not only their technical capacities, with explicit recognition of this in the official degree certificate. This certificate should include recognition of the type of training programme taken as a supplement to the degree or by means of a dual seal, and should accredit the competencies obtained on the degree programme, in exactly the same way as if the student had not taken a dual programme.

1.4. Benefits of dual university training

Adapting training to the needs of business and society improves the employability of university graduates. This is not easy to achieve in a society that is increasingly based on knowledge and innovation. The rapid and constant changes we are experiencing today require a major capacity to adapt training programmes, especially those that are more oriented towards professional practice. Educational methodologies based on the concepts of experiential learning and learning-by-doing enable immediate adaptation of what is learned to what needs to be learned, as well as the acquisition of the competencies required by the professional environment.

Dual training makes it possible to put these two concepts into practice and at the same time guarantee mutually complementary academic and vocational training by benefiting from the knowledge and experiences lived in both environments. Aside from directly boosting graduate employability, dual training provides benefits to all stakeholders.

The following is a description of some of the benefits and qualitative improvements provided by dual university training:

- **Professionalization.** An apprentice's vocational potential can be identified before he/she has acquired the specific competencies for the profession. Likewise, it offers the opportunity for theoretical and practical knowledge to interact. Through this incipient practice or experience, the apprentice acquires commitment, responsibility, professional ethics and autonomy, and their professional identity is shaped.

- **Motivation of the actors involved.** This modality of education involves greater motivation towards the profession not only among apprentices, but also the university, faculty, and the participating companies/organisations and their tutors, given that it is focused on the professional field and on the reality of the company/organisation, together with social recognition of this new form of teaching/learning based on professional practice.
- **Emergence of new professional roles.** The company/organisation tutor is a professional and at the same time is a teacher who shares the educational responsibility with the university tutor. In turn, the student is also an apprentice who learns in both training contexts. This requires the establishment of continuous and permanent training and retraining processes for all three actors.

These benefits affect all of the three actors involved in dual training (the apprentice/student, the academic/university tutor and company/organisation tutor), as shown in Chapter 3.



03

Dual training in higher
education in Catalonia

2.1. Analysis of the experiences and good practices of dual university training in Europe

Some European countries have been running dual training programmes in higher education for some years now. ACUP therefore asked two experts from the European context, the head of the Department of Mechanical Engineering at Baden-Württemberg Cooperative State University (DHBW Mosbach) (Germany) and the director of Formasup NPC Hauts-de-France and president of the National Association for Higher Education (ANASUP) (France), to describe their experiences of the implementation of this modality of education and to showcase good practices that could be useful when promoting and developing a dual training model in the Catalan University System.



The case of Baden-Württemberg Cooperative State University (Germany)



Bernd Bachert, head of the Department of Mechanical Engineering at Baden-Württemberg Cooperative State University (DHBW Mosbach)

www.mosbach.dhbw.de

Baden-Württemberg State Cooperative University (DHBW) is the first higher education institution in Germany to combine on-the-job training with academic studies, thereby achieving perfect integration between theory and practice, the two components of cooperative education. With nearly 34,000 students enrolled, more than 10,000 partner companies and more than 145,000 graduates, the DHBW is one of the biggest higher education institutions in the *land* (German federal territorial unit) of Baden-Württemberg.

The university's official headquarters are in Stuttgart. Its organisational structure, based on the United States university system, is unique in Germany, because it includes both a central level (DHBW headquarters) and a local level (DHBW centres and campuses). With nine centres and three campuses, the university offers a wide range of undergraduate programmes in business, engineering and social work. Figure 1 presents a list of the programmes at Baden-Württemberg State Cooperative University (DHBW Mosbach).

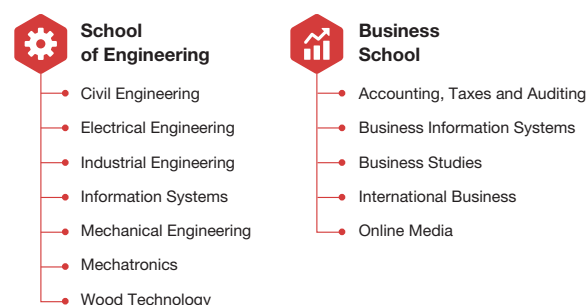


Figure 1. List of programmes at Baden-Württemberg State Cooperative University (DHBW Mosbach)

All degree programmes are intensive and nationally and internationally recognised, each one equivalent to 210 ECTS. The DHBW also offers postgraduate and master's programmes with integrated on-the-job training.

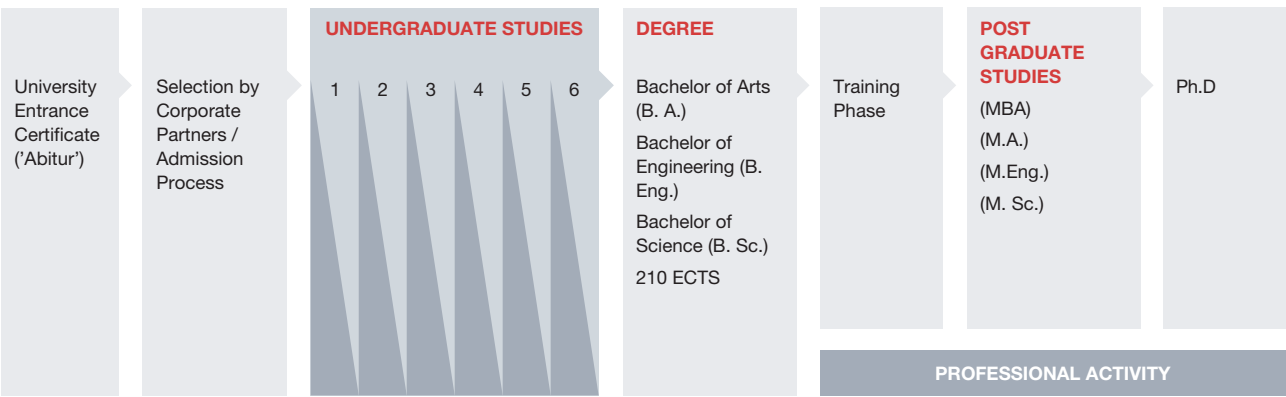


Figure 2. Organisation of the study process at the Baden-Württemberg State Cooperative University

The three-year programmes consist of 50% (one and a half years) theoretical knowledge at the university and 50% (one and a half years) of practical training at the dual/cooperative partner company. Each semester is divided into a theoretical part and a practical part. The whole process is organised as shown in Figure 2.

Dual partner companies (known as ‘cooperative partners’) assume full responsibility for the student selection and admission process, and once completed, the cooperative partner and the student sign a contract. The cooperative partner chooses a certain number of university students each year, and hires them over the course of three years, even when they are receiving theoretical education at the university. During the theoretical part of the courses, the students work in different departments of the associated company. They are assigned a company tutor, while at the university they have a *studiengangsleiter* (course director), who is responsible for student affairs.

The origins of the Baden-Württemberg State Cooperative University go back to the BA-BW Cooperative Education University (Berufsakademie Baden-Württemberg), founded in 1974. The university is still applying its renowned and highly successful model of dual education, which involves the integration of academic theory with practical in-company experience.

This model was started more than forty years ago with such prestigious companies as Robert Bosch, Daimler-Benz and SEL. Consequently, in 1974 the land of Baden-Württemberg, in cooperation with many prominent companies, developed a vocational education system for pre-university students (graduates from the Abitur university entrance exam) and partnered with institutions that have traditionally offered tertiary education.

In 2009, in consideration of its excellent performance over the previous decades, the land of Baden-Württemberg granted the *Baden-Württemberg Duale Hochschule* (Dual School) the legal status of a cooperative university, so it was authorised to award academic degrees. One of the main innovations of the programme is the ability to implement cooperative research projects in order to strengthen ties with companies and associated organisations and achieve a more up-to-date level of academic studies.

During the COVID-19 crisis, Baden-Württemberg State Cooperative University quickly made the transition to online classes. Some laboratory exercises were also converted to digital format. Since March 2020, the university has developed an excellent one hundred per cent online learning experience, as well as offering hybrid methods, in which some classes are given online and others are done in person.



The case of Formasup NPC Hauts-de-France (France)



Frédéric Sauvage, director of Formasup NPC Hauts-de-France and president of the National Association for Higher Education (ANASUP)

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www.anasup.com

Dual training programmes in French higher education have undergone intense and continued development in recent years, and currently have more than 210,000 students, up 10% on average each year (150,000 in 2015).

All areas of training are being transformed into dual programmes. The areas of management, trade, industry and engineering are being particularly developed, but numerous programmes have also been launched with great success in other sectors: digital technology, data analysis, art and culture, logistics and law. French companies welcome the students enthusiastically, and training combined with work is viewed as a human resource management tool.

Such is the case of Formasup NPC Hauts-de-France, a learning centre that has undergone major growth (7,500 students this year on 280 training programmes, compared with 4,100 students in 2015).

This development is based on the following three core areas:

1. **A specific legal and financial framework:** employment contract and paid internships; funding of the system through companies; basic rules regarding the duration of academic

training, and compulsory tutorial support from the company and the training centre.

2. **The training meets the company's needs.** Long-term internships are not considered, unless they are based on the company's needs: target profession, pace of work and study, quality of dialogue between company and school.

3. **A specific pedagogy** that makes the student a reflective professional and gives priority to the development of competencies in the training programme is of major relevance in higher education. Students often need to acquire transversal skills in fields such as design methodology, problem solving, and innovation.

However, the training scheme that combines academic studies with internships has undergone considerable transformation in recent years.

In September 2018, the French Government introduced the *Pour la Liberté de Choisir son Avenir Professionnel* (For the freedom to choose one's professional future) reform to stimulate the development of low-skilled internships. This reform implied major changes that impacted the entire educational model, which we describe below.

- **Liberalisation of internships** in order to allow programmes to be launched in all training organisations; companies can set up their own internship centres.
- **Regulation of the system**, from the regional to the national level, with the creation of a state regulatory body (France Compétences).
- **Guaranteed funding for each contract** according to the criteria of a professional association supervised by France Compétences. Funding comes from a contribution from companies.
- **Support for young people in their search for possible contractors.** When training begins they are guaranteed a specific status that they maintain until they enter the labour market.

- **Mandatory quality assurance system** for training organisations that carry out training and internship programmes.
- **Interns' salaries**, depending on the age when they work and the year of the education system, are revised upwards (up to a minimum wage). The maximum age is thirty, and there is no limit for people with disabilities.
- **Higher education institutions must adapt to the new situation.** They have long focused on democratising access to higher education and strengthening ties with companies. Competitive, financial and educational considerations are becoming an important factor.

Academic courses with internships have become a market. The issue of education remains a priority for training centres, but there are three other issues that are also relevant, which are the following:

1. **Improve value for money.** The government's goal is to take advantage of competition to reduce costs and support. There is a whole debate going on to reduce a priori the degrees of support for contracts since the reform came into full force in January 2020. The COVID-19 crisis has raised issues related to the sustainability of the system, while the number of students has risen considerably. Training centres should report their results to the general public. In this context, universities and colleges need to redefine their strategic goals quickly in order to continue to lead the way in quality training.
2. **Provide support services for training programmes**, such as assistance with the drafting of contracts, with the selection of staff in companies, training company tutors, etc.

3. **Personalise training courses** by taking advantage of the new range of legal and technological possibilities to create attractive programmes (for example, promoting international student mobility through online training).

2.2. Assessment of the results of European projects accomplished in the field of dual university training

In recent years, several European funded projects have been set up in the field of dual university training. Three of these are described below, two of which correspond to the Erasmus+ programme (*ApprEnt: Refining Higher Education Apprenticeships with Enterprises in Europe* and *CWIHE: European Network of Cooperative Work Integrated Higher Education*) and one to the POCTEFA 2014-2020 programme (*Life Long Learning Transversalis: Alternance et Vae dans l'Espace Transfrontalier Espagne-France-Andorre*), through their coordinators, who ACUP asked to emphasise any results that might be of interest for the promotion and development of its own dual university training model for Catalonia.



The AprEnt project: Refining Higher Education Apprenticeships with Enterprises in Europe



Carme Royo, executive director of the European University Continuing Education Network (EUCEN)

<http://apprent.eucen.eu>

www.eucen.eu

General description of the project

High youth unemployment rates and the imbalance between current qualification needs and existing academic programmes have led to the need, in Europe, to promote and extend dual training and work-based learning programmes. However, the reintegration and synchronisation of the labour and education worlds is a challenge on many levels, both for the formulation of public policies and for higher education and industry itself. Considering the socio-economic peculiarities of Europe today, the European University Continuing Education Network (EUCEN) decided to present a proposal in the framework of the Key Activity 3 funding programme, called “Collaboration between companies and vocational training centres for work-based learning” (Call EACEA-40-2016).

The proposal was conceived with the aim of including seven EU countries that represented different realities, with two types of participants from each of these seven countries: one university and one SME association or chamber of commerce. In addition to these fourteen organisations, the proposal also included two cross-cutting associations: one closely linked to the higher education sector (EUCEN) and

another that is more in touch with companies (Bosch i Gimpera Foundation). Each of these sixteen organisations formed the full consortium of members of AprEnt – Refining Higher Education Apprenticeships with Enterprises in Europe.

In the two years of the AprEnt project, it generated opportunities for partnership between the worlds of education and labour, which drove collaboration between industry and higher education institutions as providers of education and vocational training, and other stakeholders, such as public authorities, student representatives, mentors and academic supervisors, among others. The ultimate goal was to promote the establishment of work-based learning systems and, in particular, dual training.

The project’s approach is research-based, ranging from documentary research, discussion of results in different areas and cross-cutting analysis to, ultimately, the development of the project’s tools.

In higher education, learning programmes are the bridge between the knowledge generated at university and in companies. AprEnt has shown that closer collaboration and coordination between these two worlds can improve results in terms of employability and adapting qualifications and knowledge to the current needs of industry, which would contribute to a better cost/benefit ratio.

However, these programmes need more resources, as well as a greater degree of attention and preparation, from both universities and industry. It is therefore essential to build trust between all parties involved, provide them with specific tools to work better, and train the professionals who work with learners, without neglecting the need to create transversal standards that will foster student mobility and the recognition of these programmes, as these are also key points.

Results of the project that can contribute to the implementation of a dual university training model in Catalonia

Although the project has developed a series of materials that can help to understand dual training in higher education and its particularities (including a national report on Austria, Spain, Estonia, Finland, France, Italy and Portugal, a SWOT analysis, thirty-three case studies and transversal analyses thereof), there are four fundamental products that we would like to highlight and that might help interested institutions to promote programmes like these. These products could serve as a starting point for designing a model adapted to the needs of Catalonia, covering all the essential areas, such as regulation, promotion, education and management of dual training.

- **Training for mentors and supervisors of dual training programmes in higher education: generic structure of a continuous vocational course.**

The project has shown that mentoring in dual training in higher education has its peculiarities and that not all professionals who tutor or supervise students on these schemes are trained for the job. Training of these professionals is not only necessary, but also essential to help students.

- **Guide to setting up a partnership agreement for dual training in higher education: recommendations to make the agreement model appropriate for all actors.** This set of guidelines includes the key points for inclusion in a typical agreement in order to protect and improve the participation of the three actors (student, university and industry) in a higher education dual training programme.

- **Materials to promote dual training in higher education: learning to teach, teaching to learn.** This package of materials includes a general overview and five files, each aimed at a different target audience: political authorities,

higher education institutions, business and industry, students, and academic mentors and supervisors. While dual training in higher education is a powerful tool for offering learning-focused experiences in real workplaces, not everyone is aware of the potential and benefits of these schemes; that is why this package of materials can help to present these programmes and to serve as an ambassador for them.

- **Public policy recommendations to improve the European model for dual training in higher education.**

Political decisions are the only way to make dual training a reality in higher education: policymakers are decisive for regulating and implementing these programmes. These policy recommendations highlight the ten most important issues that policymakers need to consider in relation to dual training programmes in higher education. These ten key areas need to be harmonised in all countries of the European Union to foster mobility and recognition.

All the AprEnt products justify and emphasise the need to develop a dual model for higher education. Catalonia could design its own model based on the studies and analyses that have already been carried out, and thereby avoid needing to repeat this initial work phase.

These products are available in eight languages: German, Spanish, Estonian, Finnish, English, Italian and Portuguese. All AprEnt results are open source and can be viewed on the project website: <http://apprent.eucen.eu/tools>.



The CWIHE project: European Network of Cooperative Work Integrated Higher Education



Ixaka Egurbide, CEO of the Instituto de Máquina-Herramienta (IMH)

www.imh.eus

www.cwihe.com

General description of the project

In the conviction that dual university training can play a fundamental role in an innovative model to develop university degree courses, complementary to the common and integrative approach in relation with the professional environment, the Instituto de Máquina-Herramienta (IMH) is promoting through the CWIHE: European Network of Cooperative Work Integrated Higher Education project the creation of a European Network of “Dual” Universities and Higher Education Institutions.

The relevance and effectiveness of the model has been demonstrated in areas such as promoting the employability of young people, skills development and support for business competitiveness, with relevant European examples being promoted mainly in France and Germany. However, the model poses challenges and needs that need to be addressed.

In this context, the ultimate goal of the project is to establish a European network of dual higher education, with the aim of sharing the experiences, knowledge, reflections and so forth that have improved each participant, and of helping to jointly address the challenges posed by the model.

In this sense, the project aims to:

- Identify and overcome the challenges of dual university training through the exchange of best practices and knowledge;
- Launch and examine the operations and added value of a European network of dual higher education;
- Offer recommendations for the development of policies to support the model;
- Improve the international dimension of dual university training by designing an adapted mobility plan and establishing collaborative relationships between universities and companies within the framework of the network;
- Raise awareness of dual training in the European Higher Education Area as a valuable alternative to tackle such challenges as youth unemployment.

To achieve these objectives, work was mainly done in four core areas:

- 1. Pedagogy and learning:** the challenges and opportunities that dual training can create with regard to employability and the development of competencies. The pedagogy and didactics of dual training are addressed by debating and analysing different critical aspects thereof: the role of tutors, quality assurance in companies, the pedagogy of dual training and mobility.
- 2. Coordination of the Network:** the actual constitution and planning of the network's operations.
- 3. Joint mobility plan:** as a transversal activity, design of a mobility plan for the members of the consortium, seeking to share experiences with regard, for example, to pedagogy, relationships with students and companies, and the way the institution operates.

- 4. Communication and dissemination:** formalisation and promotion of the network in Europe. In addition to a launch event, the intention is to hold a closing conference to present the results of the project.

The members of the consortium are as follows:

- Instituto de Máquina-Herramienta (Spain)
- University of Lleida (Spain)
- Formasup Nord - Pas-de-Calais (France)
- Free University of Bozen-Bolzano (Italy)
- University West (Sweden)
- Baden-Württemberg - Mosbach Dual University (Germany)
- FH Joanneum (Austria)

Results of the project that could contribute to the development of a dual university training model in Catalonia

This link <https://cwihe.com/multimedia/documentation> provides all the documents prepared by the project. The main documents are a Handbook and a Policy Manual, which raise relevant issues for a dual training model in Catalonia. The following are some of the most important results of this project.

- **There is no single way to do dual training.** Based on certain objectives and bases, which are included in this document as the pillars of dual training, there is a need to take into account Catalonia's cultural, legislative, social and economic environment to source and reach agreements with the different stakeholders, and the specifics regarding the different dimensions involved.

- **Double tutoring is a key element of dual training.** There needs to be a fluid and constant relationship between the academic tutor and the company tutor. The latter's role is fundamental in the process of adapting the student to the company and this person must accompany the student throughout the training process.

- **Invite identified stakeholders to participate in the planning, implementation and assessment of higher education programmes (government, university and industry).** Universities and the government must not only take into account the current needs of industry, but also the future trends of the speciality in question in order to be able to design a programme that is adapted to these competencies, and through which it is possible to alternate university studies with learning and work in the company.

- **Adjustment of general, substantial and social skills/competencies between the university and the labour environment.** The academic environment has little to do with the workplace. The skills that need to be acquired in each setting can be very different. However, it is necessary to align the competencies that will be acquired in both in order for the student to be able to follow a coherent itinerary. It is desirable for students to perform clear, familiar tasks, as this will provide a logical and coherent perspective of the itinerary they must follow in order to achieve the general competencies required in each part of the programme.

- **Model for the design of long-term jobs (degree programme) where competencies related to research activities are covered.** Higher education courses are different from other studies due to the greater relevance of problem-solving and research skills. That is why, as in the academic space, content must also be developed in the workplace to provide the student with these problem-solving and research skills.

- **Promote mobility for dual training students.** Traditional models are limited to face-to-face classes at the university in the target country. However, a dual scheme also involves the participation of the company in addressing the competencies required of the student. It is therefore a good idea to create links between universities that can exchange students, taking advantage of the network of companies with which they are already collaborating through their own students.
- **Training of the company tutor.** Regardless of the tutors' ability to teach, it is advisable to provide them with brief training in the dual training method, the teaching-learning process, the skills to be acquired by the student and the proposed assessment system. In this regard, it is recommended to design a "company tutor hosting guide" that details all of these matters. In whatever case, this manual should not replace a brief face-to-face training session where the future tutor gets the chance to clear up specific questions and receive comments about their understanding of the concepts covered.



The LLL-TRANSVERSALIS project (Life Long Learning Transversalis): Alternance et Vae dans l'Espace Transfrontalier Espagne-France-Andorre



Sofia Isus, tenured professor at the University of Lleida

www.udl.cat

<https://etransversalis.univ-perp.fr/es/III-transversalis>

General description of the project

LLL-TRANSVERSALIS (Life Long Learning Transversalis: Alternance et Vae dans l'Espace Transfrontalier Espagne-France-Andorre) is a project developed within the framework of Interreg POCTEFA 2014-2020 (Spain - France - Andorra Territorial Cooperation Programme) thanks to the collaboration of nine partners, which form a cross-border network whose aim is to harmonise and strengthen lifelong learning practices in response to the needs of each of the territories represented by the following institutions:

- University of Perpignan Via Domitia (coordinator)
- University of Lleida
- Paul Sabatier University (University of Toulouse III)
- University of Toulouse - Jean Jaurès
- University of Zaragoza
- University of Girona
- University of Pau and Pays de l'Adour

- Instituto de Máquina-Herramienta
- University of Andorra

This project covers the France-Spain-Andorra cross-border space. Through previous cooperation (TRANSVERSALIS 2009-2013) between university institutions and following the strategies set by regional and national authorities, the project is based around three core areas:

- 1. Linking competencies and courses:** The creation of cross-border models is a tool for the global integration of education systems and promotes mobility.
- 2. To take into account developments in the production network to advance the different modalities of training:** Dual University Training (DUT) and recognition of the professional qualifications acquired during the vocational experience in the university setting (ACP-VAE).
- 3. Guide well to train well:** Application of the required orientation mechanisms to ensure the successful acquisition of competencies.

LLL-TRANSVERSALIS is based on the Europe 2020 Strategy as a fundamental framework for the development of economic and social policies, especially in terms of strategic objectives.

This project started in October 2017 and is scheduled to end in October 2021.

The main beneficiaries are the agents who are part of the productive fabric: business support organisations, regional and national public authorities, universities and research.

Project results that can contribute to the development of a dual university training model in Catalonia

The LLL-Transversalis project has sought to take advantage of the knowledge and experience on the French side to develop joint tools to improve dual university training throughout the region and create the necessary resources to develop the incipient dual university training in our country.

Of all the products and results generated, we would highlight those that can help institutions interested in promoting dual university training. These products could serve as a starting point for designing a model adjusted to Catalonia's needs, covering all the essential areas for the promotion, training and management of dual university training. They are as follows:

- **Identification of professional profiles (5) required for dual university training: coordinator, manager, university faculty, university academic tutor and professional company tutor.** The organisation of dual university training requires the collaboration of various professionals from both universities and industry. This study serves as a reference framework for the competencies and functions of each identified profile. The functions and tasks assigned to each role help to identify the training needs of these professionals that can be provided through continuing training.
- **Training programme (30 hours) for professionals (other than the two tutors) involved in dual university training.** A partially face-to-face training course is offered that is one hundred per cent adaptable to a virtual format. The course consists of a general module for all profiles and a specific module for each particular profile. It is based on methodologies aimed at acquiring professional competencies, with problem solving, challenges and case studies, and is designed both for working autonomously and in engagement with other users. In order to facilitate transfer to real work situations, throughout the course participants are accompanied by a tutor who guides them with their reflections and the transfer of knowledge to real-life practices. The course is available in Catalan, Spanish and French.
- **Creation of a virtual learning community for professionals involved in dual university training <http://www.unidual.net/>.** This virtual platform offers a space for meeting, communication, debate and exchange between professionals involved in cross-border dual university training (Spanish, French and Andorran participation). This community includes forums, news, resources and guides to good practices, among other possibilities. It is currently operative, and a new and more dynamic version is planned to be completed by October 2021.
- **Preparation of a methodological guide to the process for the accreditation of professional competencies at university level (ACP in Catalan/Spanish and VAE in French).** A study has been conducted to assess the current situation of the ACP-VAE in Europe. Based on this and the extensive French experience in this field, the first cross-border ACP-VAE juries have been held. At the end of the project (October 2021), a methodological guide will be presented to guarantee the quality of VAEs in terms of design and development.

Through the actions carried out on the project, other materials have also been developed that can complement dual university training and help to better understand it. These actions can support the design and development of the dual university training model in Catalonia.

All the products of the LLL-Transversalis project are available on its website at <https://etransversalis.univ-perp.fr/cat/III-transversalis>.

2.3. Analysis of the experience of dual university training in Spain

To date there has been no legal coverage of dual university training at the state level. Only in the case of the Basque Country has a protocol been set up to obtain a seal of recognition for this form of education from the Agency for the Quality of the Basque University System (UNIBASQ).

At the time of writing this report, the Ministry of Universities has just prepared a draft of the Royal Decree that will replace 1397/2007, which establishes the organisation of official university education and which, among other things, is committed to promoting dual university training.

In preparing this draft Royal Decree, the Ministry has been assisted by leading organisations, such as the Conference of Rectors of Spanish Universities (CRUE).

The draft Royal Decree establishing the organisation of university education and its quality assurance procedure, submitted for public scrutiny between May 19 and June 9, 2021, regulates dual university training in its Article 22, *Dual Mention in official university education*, of Chapter V, *Specific curricular structures in official university education*.

Since this is a text that has not yet been endorsed, it may be subject to modifications before its definitive approval and publication.

Article 22. Dual Mention in official university education.

1. *Official Bachelor's and Master's degrees may include the Dual Mention, which involves a common training project that is developed in a complementary manner at the university centre and at a collaborating entity, which may be a company, a social or trade union organisation, an institution or an administration, under the supervision and leadership of the university centre, and the aim of which is adequate training of students to improve their overall education and boost their employability.*
2. *In order to obtain the Dual Mention in an official degree, the following circumstances must be met:*
 - a) *The percentage of credits established in the curriculum and to be taken in the collaborating entity (company, organisation, institution or administration) shall amount to:*
 - *Between 20 and 40 per cent of the credits included in Bachelor's degrees.*
 - *Between 25 and 50 per cent of the credits in University Master's degrees.*

These percentages must include the degree final project or Master's thesis.
 - b) *The dual training activity done in a collaborating entity will be specified in the execution of an employment contract with the student, for a duration equal to that of the academic credits required to obtain the Dual Mention and as established in the curriculum.*

- c) *The main purpose of the employment contract will be the student's training, with the basic competencies and knowledge that should be achieved having defined beforehand in a coordinated and complementary manner with the competencies worked on during the student's academic periods at the university centre. This must always bear in mind the uniqueness of the curriculum and the training project for the Bachelor's or Master's degree in question. The possibility of combining training activity at the university centre and in the collaborating entity (company, organisation, institution or administration) must be ensured at all times. This contract will follow the criteria established for this purpose by the corresponding administrations responsible for labour matters.*
3. *The university and the collaborating entity in which the student does part of his/her training through an employment contract must have previously signed a Framework Agreement for Educational Collaboration, which covers the specific agreement to be signed between the parties pursuant to Act 40/2015, of 1 October, on the Legal Regime of the Public Sector. This agreement will specify the training project, and will state the obligations of the signee parties, the tutoring and supervision mechanisms, the assessment systems, and all other conditions that are considered necessary for the proper undertaking of the dual training project. In this regard, the student will have a tutor appointed by the university and a tutor appointed by the entity, company, organisation, institution or administration, who must jointly supervise the development of the training project, under the leadership of the university tutor. The universities will guarantee the adequacy of the conditions for carrying out the activities framed within the contract and which govern the development of training at the agreed entity.*
4. *The universities will be able to adapt the curricula followed by official university Bachelor's or Master's certificates to the stipulations of this article, by means of the foreseen procedures for verification or modification. Likewise, the corresponding report by the competent external evaluation board must certify that the dual mention can be granted to those degrees for which the circumstances established in sections 1 and 2 concur. Under no circumstances may this modification to curricula involve an increase in the number of places as initially verified by the competent administration, for which the corresponding modification must be made to the degree report before the Council of Universities followed by subsequent determination of the number of courses and places thereon by the General Conference on University Policy.*
5. *Any student who has chosen to take the Dual Mention on a Bachelor's or Master's Degree course, may, if he/she deems it appropriate, leave it and return to the general itinerary as long as he/she has not passed half of the credits defined as required to obtain the Dual Mention in the respective curriculum.*

2.4. Analysis of the dual university training model established in the Basque Country

The most significant experience of dual university training in Spain is that of the Basque Country, which in recent years has developed its own model thanks to the joint efforts of several key agents: the Basque Government, the Agency for the Quality of the Basque University System (UNIBASQ), the Basque Business Confederation (Confebask) and the Basque University System (SUB). All of these, as explained below, have contributed to its design and development.

Basque Government

Represented by the Vice-Ministry of Universities and Research.



Agency for the Quality of the Basque University System (UNIBASQ)

Public body governed by private law attached to the ministry of the Basque Government responsible for universities, which assesses, accredits and certifies quality in the Basque University System in accordance with Spanish and international frameworks.



Basque Business Confederation (Confebask)

Confederation that represents and defends the general and common interests of Basque business owners through three regional organisations: the Business Association of Gipuzkoa (ADEGI), the Bizkaia Business Confederation (CEBEK) and SEA Empresarios Alaveses (SEA).



Basque University System (SUB)

Made up of the University of the Basque Country / Euskal Herriko Unibertsitatea (UPV/EHU), the University of Deusto (UD) and Mondragón University / Mondragón Unibertsitatea (MU).



Through its Vice-Ministry of Universities and Research, the First Basque University-Business Strategy 2022, which recognised the Basque University System as a dynamic and transformative agent of the Basque Country, was approved in June 2017 and set two main goals:

1. Create and transfer knowledge related to scientific excellence and its application to the business field.
2. Train human capital with excellent capacities and with a component that is applied and adapted to the needs of industry.

In line with this strategy, on 12 March 2019, the Basque Government approved the 2019-2022 Plan for the Basque University System defined by the Ministry of Education, and which revolves around the following five core areas:

- Research excellence
- University-industry
- Training and innovative teaching methodologies
- Internationalisation
- University community

The university-industry area established that, in order to achieve the second objective of the Strategy, universities had to implement a dual training model based on closer cooperation with economic and social agents.

This type of university training, as well as industry-university classes, building bridges between vocational and university training and the clustering of faculties, were a series of highly relevant innovations with respect to the previous model.

One of the key elements for ensuring both the credibility and sustainability of a dual training model was the involvement in the recognition process of an external agent specialising in the subject. Hence, UNIBASQ, which took charge of the assessment process, approved in late 2017 a protocol that defines the requirements for obtaining the

dual mention (Dual University Training Quality Seal) for official university bachelor's and master's degrees, and thus became the first such body in Spain to offer this service. Since then, the protocol has undergone successive updates, following the recommendations of the Advisory Committee, the last of which was on 20 October 2020.

This dual recognition shows that an important part of the student's training has been linked to industry and the reality of the profession, which will allow him/her to fit better into the labour world and offer greater guarantees.

Dual training generates a close relationship between the professional productive environment and academic training, through partnerships with the companies and organisations that participate in the preparation of curricula and in the tutoring of interns, as well as the funding of students through employment contracts. Dual training therefore implies a simultaneous learning process both at university and in companies. A significant percentage of the total credits for the course are taught in the company, thus making it an active agent in the degree course and in teaching-learning activities. Assessment systems are also shared, pursuant to the learning goals that students are expected to achieve.

Although in 2017 there were only five degrees with the dual mention, at the beginning of the 2020-2021 academic year, this figure had increased to 41 degrees, 27 of which were bachelor's and 14 were master's degrees.

For Basque universities, dual training represents an excellent opportunity to forge closer relations with its local economic and social system, as well as to have better and broader knowledge of the opportunities for partnership as tends to arise from the mutual trust that is fostered by such programmes. For its part, Confebask considers it essential for the designed model to count on both the educational and financial support of the contracting agent.

The origin of the programme can be traced to the School of Engineering at the Instituto de Máquina-Herramienta (IMH) attached to the University of the Basque Country (UPV/EHU), which has been promoting dual training in higher education for more than twenty-five years, and offers a degree in engineering using this modality of education. The IMH first ran its Degree in Engineering in Process and Product Innovation as a dual training programme in the 2012-2013 academic year, with the authorisation of the Governments of the Basque Country and Spain and the recognition of the National Agency for the Assessment of the Quality and Accreditation (ANECA), making it the first fully verified dual degree anywhere in Spain.

In order to take stock of the implementation of the Basque dual university training model, ACUP contacted the different key agents: the IMH, the Government, the UPV/EHU and UNIBASQ. It also asked them for their views on the future of this modality of education and the effects that COVID-19 could have on its sustainability.



The experience of the Instituto de Máquina-Herramienta (IMH)



Ixaka Egurbide, CEO of the Instituto de Máquina-Herramienta (IMH)

www.imh.eus

The first steps with this experience date back to 1994, when the Instituto Máquina-Herramienta (IMH) undertook a major change of strategy that gave rise to the Strategic Plan approved by its Board of Trustees in April 1995. In the final document presenting this forward-looking exercise, the following strategic line is defined: “Offer engineering courses in higher education that are adapted to companies’ needs.” The process began with a study and a feasibility plan accompanied by a prospective analysis. This was used to formulate and materialise a different, innovative proposal to complement the existing options in the traditional market and that was able to respond to the need expressed by the agents and companies that had participated in the design of the new strategy. This idea was motivated by the decided intention to foster innovation within the framework of the European higher education context.

The absence of a dual training model in higher education in Spain meant the need to seek solutions abroad, thus leading to collaboration with CESI Réseau de campus d'enseignement supérieur et de formation professionnelle (another pioneer in the development of the model in France). The first agreement between the IMH and the CESI was signed in 1996, and thus the IMH University School of Dual Engineering was created, the first in Spain to offer this type of training, with the particularity that the French Engineering Degree Commission (CTI) accredited and awarded the General Engineering certificate through a dual training programme with the Elgóibar IMH.

After 16 years teaching a French diploma at a centre attached to the CESI School of Engineering, in 2011 it was ascribed to the University of the Basque Country, thereby creating the first official degree in Spain itself.

In essence, the IMH believes in dual training as its model, in which two learning spaces are recognised, the academic (centre/university) and the professional (industry), which work together to develop competencies among their students. It hence

- involves a single timeframe, a single training project divided into two coordinated, complementary and interactive learning environments;
- requires the development of the right relationships between the university and industry;
- involves general piloting of the process in a structured and organised manner; and
- involves competent and evaluated tutoring (company tutoring and university tutoring).

This ensures student engagement, making them responsible for their work, giving meaning to their learning and fostering their autonomy, as well as involving the university in teaching-learning methodologies and assessment systems.

The future outlook for dual university training in the Basque Country is clearly positive, since it is part of the government strategy, and is also supported by the three universities in the system and by business agents.

As for the impact of COVID 19 on its sustainability, the pandemic clearly makes the process difficult, and also hinders practicum and industrial theses, among other bridges for university-business partnership. But in no way should this justify any slowing down or cancellation of the process. The situation needs to be analysed in terms of an opportunity, rather than focusing on the difficulty or the problem, whereupon the opposite can be affirmed: the situation requires bridges to be built to ensure the transition to working life, which must be fostered and supported by public, corporate and university institutions: it is a shared responsibility. In this sense, France could be a good example.



Implication of the Basque Government



Adolfo Morais, deputy minister of Universities and Research and **Miren Artaraz**, director of University Policy and Coordination at the Department of Education of the Basque Government

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The implementation of the dual university training model has been highly positive. The Basque Country has set new standards at the state level in terms of dual training in the university environment, having offered the Dual Degree in Process and Product Innovation Engineering at the IMH University School of Engineering (centre attached to the UPV/EHU) since the 2012/2013 academic year.

As a result of the ongoing efforts within the working group of the Basque University Council in association with UNIBASQ, the Basque Country currently has a total of 41 university degrees with dual mentions: 27 bachelor's degrees and 14 master's degrees in various fields, such as Engineering, Industrial Electronics, Business Administration and Management, Labour Relations, Journalism, Tourism and Teacher Training, among others.

It should be noted that at the state level there was no specific regulation either with regard to training or employment. However, the Spanish Government has recently approved an amendment by the EAJ/PNV party to the General State Budget Project according to which the contract for dual university training is to be included in the Law on the Workers' Statute.

This new regulation will help to lay the foundations for a new framework: a solid and consolidated model that will grow as we become more able to respond to the needs of industry, universities and students.

As for the impact of the health, economic and social crisis caused by the COVID-19 pandemic, the Department of Education is concerned about the difficulties that companies could have in the future to guarantee their commitments to universities regarding on-site face-to-face training. These difficulties could imply the temporary suspension of internships or, in the most extreme cases, the cancellation of the dual training agreement.

Therefore, the application of the recently approved regulations must be a guarantee of the sustainability of dual training in the Basque Country.



The experience of the University of the Basque Country / Euskal Herriko Unibertsitatea (UPV/EHU)



Agustín Erkizia, vice-rector of the Gipuzkoa Campus at the University of the Basque Country

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Although the UPV/EHU had already developed the dual model at one of its affiliated centres (the IMH University School of Dual Engineering), it was not until late 2016 that the rector Nekane Balluerka honoured her electoral commitment to implement it on two degree programmes:

- on the existing degree in Business Administration and Management of the Faculty of Economics and Business in Donostia-San Sebastián
- and on a newly created dual degree, Automotive Engineering at the Vitoria-Gasteiz School of Engineering.

Later on, given that this model's implementation process requires a period of prior reflection, a number of work sessions (including an international congress) were held to promote the dual culture, aimed at the deans and directors of all the centres belonging to the UPV/EHU.

In the 2020/2021 academic year, the UPV/EHU has 14 degree programmes (11 bachelor's and 3 master's) with the dual seal, concentrated in two branches of knowledge: Social and Legal Sciences, and Engineering and Architecture.

There is a certain consensus that dual university training in the Basque Country was unthinkable just three years ago. It is fair to recognise the combined efforts of the many agents and people who have worked with such a huge sense of responsibility to implement such a complex project. However, this period has brought the need to overcome, as best as possible, the many obstacles posed by a training model of this nature. In order for dual training to be consolidated in university education, certain key challenges need to be addressed immediately, such as:

- Approval of a common legal framework for dual university training.
- Recognition of dual training on official university degrees by independent and public evaluation agencies.
- Creation of a specific type of contract for dual university training.
- Development of a system to accredit both external and internal staff who serve as tutors with regard to internships and dual training institutions.
- Research on the pedagogy and didactics of dual training in the university setting.



The involvement of the Quality Agency for the Basque University System (UNIBASQ)



Iñaki Heras, director of the Agency for the Quality of the Basque University System (UNIBASQ)

www.unibasq.eus

Recognition of dual university training by UNIBASQ has been very well received. This recognition can be extended to a complete degree or to an itinerary thereof. The main requirements to obtain such recognition are the following:

- **Have a dual university training project aimed at the development of integrated learning in the academic and professional environment;** between the university, the company/organisation and the students in the design and development of university training; adequate training of the student to ensure a comprehensive university education, as well as their qualified employability and their capacity for entrepreneurship, creativity and innovation.
- **For said project to compulsorily include one or more training periods within the organisation** sometimes called In-Company Stays, in which the shared mentoring by the university and the company plays a central role towards the dual Degree Final Project (TFG) or Masters Degree Final Project (TFM). Optionally, it is possible to have dual subjects in which professionals participate and other similar academic activities are carried out.
- **For the project to feature dual training activities** that as a whole involve: between 25 and 50% of the credits on undergraduate degrees of at least 240 credits, or at least 40% of the credits in the case of master's degrees. The given percentages must include the Degree Final Project (TFG) or Master's Degree Final Project (TFM) done in collaboration with companies or organisations.
- **For each student to have, both at the university and in the company or organisation, a person responsible with the adequate training to act as their mentor**, in order to guarantee the full development of the training required for the project.
- **Guarantee that the organisation or company is an active agent in the degree and in the teaching-learning activities.** Ultimately, it must be demonstrated that there is agreement and a joint effort between both institutions with regard to the co-development of the project, and to define the functions and roles assumed in each area.

- **As an essential condition, for there to be, between each student and the organisation(s) with which the training activity is to be carried out, a legally regulated relationship that implies payment for the said student**, since this is considered an indicator of the joint responsibility of the parties with regard to the project. This relationship will be covered by the specifically regulated dual university training employment contract. Should no such contract be defined, any legally regulated relationship that implies payment shall be considered valid, which shall be calculated, at least, on the basis of the Minimum Inter-Professional Wage (SMI) and must also include social security comparable to that of the other workers in the company.

The Agency's assessment is positive. Universities in the Basque University System (SUB) and other stakeholders, such as the companies and other entities, have gone to great lengths to promote dual university training.

It should be noted that the fourth call for the Agency's Dual Quality Seals has recently been approved and that as of today (December 2020), 27 bachelor's degrees and 14 master's degrees in the SUB have the UNIBASQ Dual Quality Seal.

As for the future of dual training in the Basque Country, we must persevere in the joint effort that has begun in the SUB to foster the collaboration and active participation of the different stakeholders. Among other key issues, in addition to those mentioned by the other agents participating in this report, we highlight the need to:

- Intensify the development of the unique factors of dual university training projects.
- Develop a characterisation of the role and profile of the people who act as mentors both at universities and in organisations or companies.

As for the impact of COVID-19, at the Agency we are concerned about the effect that the economic and social crisis caused by the pandemic may have on dual university training, due to the difficulties that it implies for the integration of students in companies or organisations.



02

Dual training in higher
education in Europe

3.1. Status of dual training at member universities of ACUP and the CTI Platform

In addition to the numerous experiences in the framework of both curricular or extracurricular internships and the Industrial Doctorate Plan promoted by the Government of Catalonia, Catalan public universities are already offering some dual training programmes in bachelor's and master's degrees. However, they only cover a limited number of itineraries and only benefit a small number of students.

There is no doubt that the university that has most developed this pedagogical model is the University of Lleida (UdL). Since 2012 when, motivated by the advantages of integrating labour and training, as exposed in the doctoral thesis defended by Jorgina Roure-Niubó (2009-2011), the university included dual training in its Primary Education Bachelor's Degree for the first time, the range of dual options has been growing constantly, and is currently well on the way towards consolidation. In 2014, the Master's in Operations and Distribution Management was launched; in 2015, the Master's in Computer Engineering and the Master's in Human Resource Management and Competencies Development; in 2016, the Master's in Industrial Engineering, and finally, in 2020, the Bachelor's Degree in Digital Interaction and Computing Techniques. From 2016 through to the present day, some 280 students and about fifty companies and organisations have participated in the dual training offered by the UdL, which is now the benchmark in this field within the Catalan public university system.

Prior to the outbreak of COVID-19, six centres at Rovira i Virgili University (URV) were working on implementing dual training on bachelor's and most especially master's degrees in various fields with a view to the current academic year (2020-2021). However, the difficulties caused by the pandemic have delayed the schedule and so this pedagogical model is only being applied, for now, on some pilot subjects. Similarly, the Open University of Catalonia

(UOC) plans to design its first programme or itinerary for this coming academic year.

Some universities have training programmes whose characteristics are comparable to those of the dual programmes. This is the case, for example, of the EUS programme, offered for the degrees in Economics and Business Administration and Management (ADE) at the University of Barcelona (UB). This category would also include the alternating vocational programmes being proposed by the Universitat Autònoma de Barcelona (UAB), which would cover various modalities of education: the higher vocational certificate in International Trade at the UAB Foundation Vocational Training Centre; UAB's own so-called dual undergraduate degrees (*pregraus duals*); the Cooperació Educativa University-Industry programme (PUE), which includes internships on Economics and Business Management and Administration degrees; the CITIUS programme for in-company vocational insertion, which includes curricular internships for postgraduate and master's students, as well as its own corporate dual master's degrees in Chemistry, which are designed, coordinated and taught in association with companies in the sector.

Meanwhile, Tecnocampus, a centre attached to Pompeu Fabra University (UPF), is preparing a modification of the certificate to include the dual mention in its Degree in Business Administration and Innovation Management.

Others, such as the Polytechnic University of Catalonia (UPC) and the University of Girona (UdG), do not currently have dual training programmes, although both have expressed much interest in developing them in the near future.

Aside from public universities, the University of Vic - Central University of Catalonia (UVic-UCC), has some degrees, such the one in Automotive Engineering, that have been fully designed pursuant to the dual pedagogical model, while the Degrees in Infant and Primary Education (master's degrees) only include it in certain subjects rather than fully deploying it. Again, the COVID-19 situation means that it

has not been possible for Business Administration courses to be adapted to the dual model, as was the plan for the current academic year. This university is also part of the Knowledge, Territory and Innovation Platform, in the context of which this report has been prepared.

3.2. Favourable conditions for promoting and developing a dual university training model

What follows is a list of favourable conditions required to promote and develop a dual training model in the Catalan University System, originally included in the first edition of this report, published in 2014.

In line with what was already stated at the time, although the analysis of the experiences and good practices of dual training in higher education in other European countries that is presented in the second chapter can serve as a source of inspiration, a foreign model cannot be imported directly and will instead inevitably need to be adapted to the educational, social and economic characteristics of our country.

Strategic conditions

- Analyse priority objectives, institutional, cultural and curricular conditions and pedagogical requirements.
- Determine strategic targets.
- Involve stakeholders, get all relevant actors to participate and agree on forms of collaboration.
- Plan implementation and action.
- Cooperate with other countries that have a long history of implementing the training model.

Institutional conditions

- Design a joint projection strategy: university and company/organisation.

- Consider the company/organisation as a training place adapted to students' own needs in order to foster pedagogical progress and, at the same time, (re)adapt the training offered to the needs of the professional setting.
- Establish the necessary legal framework: employment contracts for university students taking this modality of education, an assessment system and official recognition of these studies.
- Foresee and evaluate, from the university, how companies/organisations can adapt to the needs of the dual student. The pace of dual training must be negotiated between the partners (university-company/organisation) to ensure adequate pedagogical progress in the student and prevent university dropout.
- Create spaces for regulation, which is indispensable in order to define the timeframe and trajectory (activities, core progress areas, assessment) and to ensure that partners know and recognise these in their training activity.

Conditions for the organisation of courses

- Adapt training programmes (curricula) in liaison with companies/organisations.
- Ensure consistency between the goals proposed by the company/organisation and the university's training requirements to obtain the certificate.
- Use pedagogies, through practice, that foster reflection with regard to experiences in a work situation in order for the student to be able to conceptualise the experience and ensure the acquisition of competencies.
- Create teaching teams to monitor activities in order to improve student learning processes.
- Provide the company/organisation with tools to assess and monitor the student's progress in the company/organisation and, at the same time, to serve as communication tools between the company/organisation tutor and the university tutor; the university and company/organisation share training and assessment duties.
- Assume and accept new kinds of training, assessment and stakeholders.

3.3. A new climate for dual university training in Catalonia

As noted in the introduction, there has been an extremely significant change of climate in Catalonia since the first edition of this report on dual university training was published.

The degree of knowledge among Catalan society about dual learning programmes is much higher than it was then; the quality of the programmes designed by universities has increased, and the willingness of companies and organisations to participate in them has too; but, above all, the political will to promote them has intensified.



How dual university training fits into the National Pact for the Knowledge Society (PN@SC) approved by the Government of Catalonia

On 9 June 2020, in the context of the socio-economic crisis caused by the outbreak of the COVID-19 pandemic, the Government of Catalonia approved the final document of the National Pact for the Knowledge Society (PN@SC). Led by the Ministry of Business and Knowledge, this agreement had already been unanimously approved the previous May by the 78 representatives of universities, research centres, students, unions, the business world, the region and of all the political groups with seats in the Parliament of Catalonia, gathered at a plenary assembly.

With the aim of becoming the central instrument for deploying the comprehensive strategy for research, development and innovation (R&D&I) in Catalonia that must guide future public policies in this area, the Pact aims to advance our country towards becoming a knowledge-based economy, on a par with the most competitive countries on a European scale.

The Pact includes a total of 84 major agreements. Of these, two make explicit reference to dual university training, a modality of education that may become especially relevant in Catalonia, given the way its university system is organised with a notable lack of applied science universities.

8th Agreement

Promote dual training on vocational university degrees (in accordance with the profiles and accreditation criteria for vocational and academic education), and to do so by forging a closer relationship between university and industry, and other organisations, in order to improve the competencies of university-educated students.

9th Agreement

Develop and implement policies for higher level dual training based on the specific context (production sector priorities), and to do so through the application of regulations recommended by the EU, such as the training of "mentors", mobility of faculty and non-teaching staff, quality control measures, tax rebates for companies that share the responsibility for dual training and quality assessment. Flexible measures should be applied to fit the specific needs of the production sectors. The relationship between the sector councils created by Act 10/2015 and universities, most specifically between those that offer vocational degrees, should be given exposure.

Apart from these agreements, the Pact includes a series of indicators related mainly to R&D&I spending expressed in terms of GDP and to the basic funding of the university system.

Below, the Government of Catalonia's director general of Universities sets out, at the request of ACUP, the actions performed by the Government in order to promote and develop, via a working group set up within the framework of the Catalan Inter-University Council (CIC) in November 2020, dual training in the Catalan University System (SUC) as a whole, in order to implement the aforesaid PN@SC agreements.

The members of this same work group subsequently complement this contribution.



Victòria Girona, Government of Catalonia's director general of Universities

<https://universitatsirecerca.gencat.cat>

One of the Government of Catalonia's strategic lines is to build a future based on the knowledge society. To achieve this goal, it formalised the National Pact on the Knowledge Society (PN@SC), through which universities are called upon to develop strategies and actions that promote collaboration between the higher education and business systems. More specifically, the Pact proposes the strategy of developing specific programmes that link university education with vocational training.

With this in mind, the General Directorate of Universities promoted the creation of a working group, within the framework of the Interuniversity Council of Catalonia (CIC), in which all Catalan universities participate for the promotion and development of dual training in the university system, with the aim of implementing the actions proposed in the PN@SC.

The main objective of the working group will be to produce and agree on proposals for actions to develop dual training within the framework of the Catalan University System (SUC) and continue working to provide this system with mechanisms to facilitate its implementation, both face-to-face and virtually, as an innovative training option to boost employability and individual student development, and to achieve greater efficiency in the use of financial resources and foster social integration by increasing the synergies between the professional and academic fields in which students will be working in combination.

The main aspects that these actions will need to cover are the following:

- Agree on a frame of reference that puts dual training in its rightful place in relation to other modalities of training.
- Establish a framework of relationships between the main actors: students, university and company/organisation.
- Promote policies to assist and support universities, companies/organisations.
- Define the necessary quality assurance procedures.
- Provide support tools for the development of dual training pedagogical engineering.
- Propose improvements to the planning of undergraduate and university master's degrees that support the programming of dual training.

The working group, made up of representatives of the General Directorate of Universities and the universities themselves, through the appropriate reflection and analysis procedures regarding aspects related to each of the aforesaid work areas, will have to define operational proposals in this regard.

The conclusions reached by the working group shall be shaped into a series of measures that will be submitted for the consideration and approval of the Academic Programming and Planning Commission, which may subsequently submit these proposals to the Board of the CIC, if applicable, for its corresponding final approval.



Generalitat de Catalunya
**Consell Interuniversitari
de Catalunya**

**Working Group for the Promotion and Development
of Dual Training in the University System of Catalonia,**
Interuniversity Council of Catalonia (CIC)

<https://universitatsirecerca.gencat.cat>

In order to consolidate a model for dual training at Catalan universities, the Academic Programming and Planning Commission of the Interuniversity Council of Catalonia (CIC) considered it pertinent to create a working group. The main objective of the group is to draw up and agree on proposals for actions to develop dual training in the Catalan University System (SUC). With this purpose in mind, the aim is to provide the system with mechanisms to facilitate its implementation, both face-to-face and virtually, as well as to consolidate the possibility of innovative training to boost the employability and individual development of the student, through an increase in fit and continuity between the professional world and academic training. This can help to achieve more efficient use of economic resources and better social integration.

The main aspects that these actions will need to cover are the following:

- Agree on a frame of reference that puts dual training in its rightful place in relation to other modalities of training.
- Establish a framework for relationships between the main actors: students, university and company/organisation.
- Promote policies to assist and support universities and companies/organisations.
- Define the necessary quality assurance procedures.
- Provide support tools for the development of dual training pedagogical engineering.
- Propose improvements to the planning of undergraduate and university master's degrees that support the programming the scheduling of dual training.

The agents involved in this working group are the following:

- A representative of each university in the SUC.
- Representatives of the General Directorate of Universities and the General Secretariat of the CIC, of the Ministry of Business and Knowledge.
- The head coordinator of the Working Group for the Promotion and Development of Dual Training in the SUC: Margarita Moltó Aribau, professor in the Business Organisation Department at the University of Lleida.

The conclusions highlighted within the framework of the working group will be specified as a series of measures that will be submitted to the consideration and approval of the Academic Programming and Planning Commission, which may subsequently submit them to the CIC Board.

Likewise, a representative of the Catalan University Student Council (CEUCAT), the main body representing all Catalan students in the institutions, comments, after being consulted by ACUP, on the will of the Government of Catalonia to promote and develop a dual university training model.



Albert Moragas, student and president of Students of Rovira i Virgili University (URV) and member of the Catalan University Student Council (CEUCAT)

<http://www.ceucat.cat>

The main motivations for students to participate in dual training programmes are mainly economic, because university students foresee a very dark future due to the two global crises that we have experienced in the last thirteen years.

Also, if things get done and get done right, I think, if well thought through, dual training could be a good motivator in terms of learning the knowledge that is required on a university degree or in postgraduate studies, by dividing lecture time with hours spent in the workplace.

Regarding the basic elements on which a dual training model should be grounded in higher education, of particular importance are the protection of students against discrimination and corporate abuse and the real situation whereby university credits are acquired.

It is essential for students, as the most interested party in this business and academic agreement, to be able to choose their destinations and schedules depending on what is on offer.

Finally, it is essential for everyone be able to access this method, and for it to be a learning opportunity rather than an obligation.



Approval by AQU Catalunya of the document *Guidelines for the Verification and Implementation of Dual Training on Official University Degrees*

The Catalan University Quality Assurance Agency (AQU Catalunya) needs to play a preponderant role in the promotion and development of dual university training in our region.

The path on which the Basque University System has already set out, whereby the UNIBASQ Agency certifies and accredits quality with its seal or dual distinction of universities or itineraries of official university undergraduate degrees and master's degrees that may receive this mention (see Chapter 2) is, without a doubt, a path that the Catalan University System should explore as a basic element for the recognition of dual education.

Below, the director of AQU Catalunya describes, at the request of ACUP, the objectives of the document *Guidelines for the Verification and Implementation of Dual Training on Official University Degrees*, produced by the Catalan agency taking the Basque protocol as a reference, and approved in February 2020. The document is subject to changes brought about by a modification to the state's legal framework and a clear political will of the Government of Catalonia to be able to implement these effectively.



Martí Casadesús, director of the Catalan University Quality Assurance Agency (AQU Catalunya)

www.aqu.cat

On 28 February 2020, the AQU Catalunya Institutional and Programme Review Commission approved the document *Guidelines for the Verification and Implementation of Dual Training on Official Degree Programmes*, which was subsequently presented to the AQU Catalunya Committee of Vice-Rectors for Quality Assurance on March 30.

This is a document that guides the design of these degrees, or part of them (in the design of itineraries), in order to foster the implantation of dual training systems that combine learning both in a company and at a university centre; i.e. it establishes certain indications, fulfilment of which is currently voluntary, with regard to the programmes for which it has already been decided that lectures at the education centre shall be combined with other periods of in-company training, in such a manner that these degrees or itineraries can be considered “dual”.

Hence, the document approved by AQU Catalunya establishes what matters need be considered in the design phase of these studies or itineraries and, therefore, in each of the nine sections that form part of the verification process: degree description, justification, competencies, student access and admission, curricula, faculty, material resources and services, expected results, quality assurance system and schedule. All of this, bearing in mind the non-legally binding aspects of “training quality” that must be taken into account by education centres, faculty and the tutors at the partner organisations.

In awareness that the Spanish government, which is the competent body in this area, has no regulation on such university programmes, as it would seem that Royal Decree 1393 should include, AQU Catalunya has gone ahead and proposed guidelines that, for the time being, are just that, guidelines, i.e. right now they can be used as a guide, but not to regulate.

However, this is an important first step by the Agency, as no previous directives have been set for this modality of programme. So, these guidelines (always in consultation with the universities in the Catalan University System) could be part of mandatory directives for the implantation and accreditation of dual degrees and itineraries in the framework of accreditation processes or specific seals that endow them with the required exposure.

There is no doubt that dual training is a challenge for the Catalan University System right now, and AQU Catalunya, as part of the system, must focus its efforts on driving it forward and ensuring its quality.

3.4. References for the promotion and development of a dual university training model

In order to promote and develop a model for dual university training in Catalonia, it has been considered appropriate to analyse the success of its application both to higher VET and the Industrial Doctorate Plan promoted by the Government of Catalonia, and what has been learned from such experiences. Mention is also made of the proposal for new university degrees, called “2+2”, presented by the Laude Collective Association.



Fabian Mohedano, secretary of the Governing Commission of the Vocational Training and Qualification System of Catalonia (FPCAT) and president of the Catalan Council of Vocational Training

<http://consellfp.gencat.cat>

Shortly before the pandemic crisis, dual vocational training in the Catalan education system reached its target of 20%, a relevant figure given that the European average is 30% and that of the leading country, Germany, is 40%. The definition and implementation of dual vocational training should be based on agreement between the most representative business and trade union organisations in Catalonia and the Administration. Most particularly, this agreement needs to be on matters that affect the relationship between the apprentice and the company, through the Inter-Professional Agreement of Catalonia and the mechanisms established for collective bargaining, to provide legal security to both apprentices and companies.

The agreement between the most representative business and trade union organisations and the Government of Catalonia gave rise to the *Basic Document on the Catalan Model of Dual Vocational Training*. This document sets out the general framework for the gradual promotion of dual training throughout the country, in order to protect and enhance the role of the apprentice, define the parties involved, and establish the training model and ensure its effectiveness through indicators, evaluation and continuous improvement. This definitive drive towards dual vocational training must reflect the promotional effort, pedagogical initiatives and work done by the professionals at the training centres in recent years. Having now defined the system for exploring educational needs, we must ensure that we not only meet the demands of people and industry, but also adapt to the needs of the different sectors and regions.



Dual vocational training

Dual vocational training also has a long and consolidated history in the Catalan education system.

Given the number of joint efforts and agreements among the agents involved (public administration, employers and unions), reflected, among others, in the *Basic Document on the Catalan Model of Dual Vocational Training*, it is felt appropriate to take the said model as a reference when promoting and developing a dual training model in higher education.

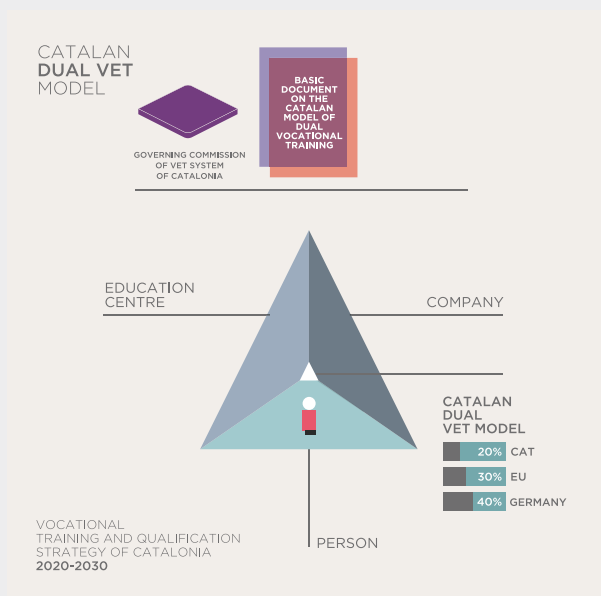
With this in mind, ACUP asked for a contribution from the secretary of the Governing Commission of the Vocational Training and Qualification System of Catalonia (FPCAT) and president of the Catalan Council of Vocational Training.

Another relevant point with regard to this agreement is that it covers both the training done on vocational courses and that done towards professional certificates, as well as vocational training for unregulated employment, which also combines learning at training centres with in-company apprenticeships.

These basic agreements are also the fundamental framework for coordinating the regulation of dual vocational training, on the basis of which the departments responsible for vocational training must adapt their own regulations.

Dual vocational training must be deployed in conditions that foster the initiative and implication of training centres, people and industry, with sufficient human and economic resources and with recognition of their roles and responsibilities in pedagogical terms: there needs to be a specific budgetary allocation to adapt delimitations to the environment or sector to which the training is addressed.

In short, dual vocational training as a model that helps to make enterprises more competitive by improving their people management implies that they shall be endowed with human capital that has the necessary professional skills to join the company. That is why it is important for the parties involved in collective bargaining to play a part in the conceptualisation, promotion, follow-up and evaluation of this type of training.



There are some basic requirements that are common to dual university and vocational training. Of particular note are the need to involve the strategic level (i.e. management) of both the participating company/organisation and the university or vocational training centre; the need for the student/apprentice to receive payment during his/her time in the company/organisation as a motivating element for both parties so that the young person learns as much as possible in the shortest possible time, and, finally, the need to train academic and company/organisation tutors, which must be coordinated throughout the teaching and learning process.

Having detected these shared elements, ACUP asked the director of the Bertelsmann Foundation and the managing director of the BCN Formació Professional Foundation (BCN Vocational Training Foundation) to identify the lessons learned in the field of dual vocational training that could be transported to the university environment.

The Bertelsmann Foundation and the *Careers Guidance and Alliance for Dual Vocational Training* projects

Since 2014, the Bertelsmann Foundation has been running two complementary projects designed to bring the education and professional worlds closer together and facilitate the transition between the two, with the aim of helping to generate quality professional opportunities for young people.

The coordinated *Careers Guidance* project helps schools better prepare students for the academic and vocational decision-making process. The Bertelsmann Foundation is committed to early, continuous and quality careers guidance, offering students opportunities to participate in experiences in real work environments as part of their education. That is why it is promoting the *Xcelence model*, a reference framework that helps centres to improve their guidance systems.

Through its *Alianza* project, the Bertelsmann Foundation hopes to contribute to the development and promotion of quality dual vocational training in Spain. Since this concept is new and little-known in the country, the so-called *Alianza para la FP Dual* (Alliance for Dual VET) has been created, with more than 1,400 members, and which works in a collaborative manner to improve and disseminate quality dual vocational training. *Alianza* advises companies and sectors on their first dual vocational training projects through a team of specialist advisers. It also holds outreach events, information campaigns, an annual forum and awards to recognise best practices, and publishes support materials. Through the *SomosFPDual* (We are Dual VET) programme, so-called ‘young ambassadors’, apprentices and former learners, disseminate dual VET by describing their experiences. Finally, the Bertelsmann Foundation is helping to expand the dual VET model by devising practical solutions for the problems that arise, testing them in pilot trials and supporting their corresponding replication by third parties.



Clara Bassols, director of the Bertelsmann Foundation

www.fundacionbertelsmann.org

www.xcelence.es

www.alianzafpdual.es

Much of what is experienced and learned in dual VET is applicable to dual university training, as both systems have a common denominator, namely the duality of training.

The same idea of a network like *Alianza para la FP Dual* to develop and disseminate the dual model could be replicated at the university level. A network of young ambassadors of dual university training could also be promoted to disseminate dual training through their own experiences.

In 2015, the Bertelsmann Foundation set up a network of prospectors to support and advise companies on their first dual VET projects in Catalonia, Madrid and Andalusia. This programme was so successful that there are now networks of dual VET prospectors in nine autonomous communities. A network of dual university training prospectors would be a great driver for the participation of companies in dual university projects. In dual VET, projects led by sector associations and intermediate organisations are especially successful, as they encourage participation of SMEs and achieve training that is highly adapted to the needs of the sector. At the university level, similar sector projects to those of dual VET could also be promoted.

Many of the materials available on the *Alianza* platform, from a handbook for the training of company tutors to a publication on cooperative projects and a tool with quality indicators for dual VET, could be used, with minimal adaptations, in dual university training. There are also pilot experiences, such as that of the joint tutor who supports a group of micro-SMEs, which would be perfectly applicable to the university setting.



The BCN Formació Professional Foundation

The BCN Formació Professional Foundation was created in 2006 as a consolidation of Barcelona City Council's commitment to vocational training (VET) in the city. Since January 2018, its sphere of activity has been extended to the entire Barcelona Metropolitan Area (AMB).

The Foundation's mission is to establish links and act as a bridge between VET and the economic and social environment, and also to help to internationalise VET, both in terms of mobility projects for students and teachers and for others that generate knowledge in the sector. In short, to help foster the future employment of people studying VET and to support the development of the metropolitan context.

2018-2019 data shows that it covers 96 VET centres in Barcelona and 172 in the AMB, as well as 36,143 students in Barcelona and 57,876 in the AMB.

The activities are structured around the following core areas:

1. Thinking, knowledge and foresight: To be a laboratory of ideas and an observatory of VET to detect the needs of the production system and influence the world of education.
2. Innovation: Generate a two-way relationship between VET and industry through a networked structure with the entire VET ecosystem.
3. Barcelona and the AMB as the international gateway to VET.
4. Promotion of dual VET in Barcelona and its metropolitan area.

Neus Pons, managing director of the BCN Formació Professional Foundation

www.fundaciobcnfp.cat

Dual VET, which has been implemented in Catalonia since the 2012-2013 academic year, involves learning that alternates between that in a company/institution, and at the training centre. The part that takes place in the workplace is academically recognised. It is therefore assessable and recognised, and the relationship with the learners is regulated by a scholarship or employment contract. In Catalonia, both options are paid.

It is an educational period of shared responsibility between schools and organisations. Co-responsibility, trust and complicity are the cornerstones on which the model is built, as in the case of industrial doctorates at university.

As for employment, data from 2018-2019 shows a figure of 68.5% (for non-dual training it is 56%), mainly in the company where the training was done.

Students, who will live and work in a changing world, are given the opportunity to acquire transversal skills. An understanding of disruptive environments, teamwork, creativity, flexibility and so on, is much easier in a format where people experience the day-to-day running of a company together.

In terms of how the emphasis is on the outcome (employment) and not on the whole process, it is difficult for the public sector to get involved in dual VET, although it is increasingly doing so. Since 2014, Barcelona City Council itself has had more than 1,600 students in all of its areas and different bodies.

All of this knowledge is the scope of duality in the university world, which, to begin with, needs a regulatory framework and, as with VET, joint efforts by all the agents involved (unions, employers, etc.).

With regard to the tracking of competencies between vocational training and the university, from carrying out training foresight work in close liaison with the production fabric, one can identify, on the one hand, specific training needs linked to a task or function and, on the other hand, professional profiles with a set of related competencies. These competencies and profiles can be incorporated into training programmes of different levels and durations.

This exercise is basic in order to be able to update and modify the training programmes on offer and enhance their adaptation to the talent required by the production fabric and to support their innovation and competitiveness processes through the provision of the right talent. Having the tools and the ability to define a professional profile and link it to competencies is therefore the basis of such tracking. The Basque Country already has many examples in which the synergistic work shared between VET and universities can visualise competency itineraries. In Catalonia we have such examples as Bioinformatics Barcelona, which also created a university degree and collaborated with the definition of VET degrees.

That would endow us with a complete training itinerary through to doctorate level. Education must be viewed as a lifelong learning journey.



The Government of Catalonia's Industrial Doctorate Plan

In Catalonia, another key reference for promoting and developing a dual university training model is the Industrial Doctorate Plan promoted by the Government of Catalonia. This plan can be used to develop research projects within a company or organisation where the doctoral student is doing his or her research training in collaboration with a university or research centre.

Industrial doctorates constitute a form of dual training due to the level of training of doctoral students. From its launch in 2012 through to 2019, the programme has produced highly commendable results: a total of 602 projects have been conducted with the participation of 11 universities and 402 different companies/organisations.

Below, the academic director of the Industrial Doctorate Plan answers a question posed by ACUP about the elements of the plan that could be replicated in a dual university training model for undergraduate and master's degrees.



Albert Sangrà, academic director of the Government of Catalonia's Industrial Doctorate Plan

<http://doctoratsindustrials.gencat.cat>

The Industrial Doctorate Plan is closely related to doctoral training, knowledge transfer and collaborative research, development and innovation (R&D&I) projects.

As knowledge is becoming increasingly more important and there is a clear transition towards the knowledge economy, the role of doctorate staff is also becoming more relevant due to the added value they bring to companies, as follows:

1. **They have advanced knowledge and expertise in a specific field**, which is permanently refreshed thanks to the network of professional and academic contacts accumulated during the training process.
2. **They have a critical view of this new knowledge** that can be used to analyse its applicability in order to respond to current corporate, institutional and social challenges.
3. **They have the ability to plan, develop and evaluate** innovative projects to solve complex problems.
4. **They know how to work autonomously and as a team**, in international and interdisciplinary contexts.
5. **They not only have specific competencies, but also transversal skills**, such as project management, time management, sourcing of funds, protection of research results, etc.

The inherent characteristics of the call for the Industrial Doctorate Plan and that define it as dual training are as follows:

- **Existence of double tutoring:** each setting has a defined person who oversees the proper functioning of the project.
- **Collaboration agreement:** definition of the tasks to be performed by each party, the distribution of the student's time and the industrial property generated by his/her work, among other matters.
- **Fair payment of the doctoral student:** a minimum average of 22,000 euros gross per year is required.
- **Rigorous monitoring and final assessment:** in the case of doctorates, there is a system for monitoring by the doctoral school and a defence of the final thesis.

The Industrial Doctorate Plan also encourages master's degree students who have been able to do a Master's Final Project at a company to be able to promote their own industrial doctorate. This is why it is important for them to see that research carried out previously has easily been integrated into the company's methods, that the company has an interest in continuing to develop it and that this could lead to a doctoral thesis. In these cases, the Industrial Doctorate Plan team advises them on the procedures to be performed and actively collaborates therewith.



The 2+2 proposal of the Laude Collective Association

In 2019, the Laude Collective Association (*Associació Col·lectiu Laude*), which groups most of the former rectors of Catalan universities in order to contribute analysis and proposals that can help to improve the university and research system, presented its proposal for new university degrees called "2+2", designed to enhance vocational training and equate it with other forms of higher education. This proposal consists of strengthening the bonds between higher vocational education and training (*cicles formatius de grau superior*) and university degrees by creating new four-year degrees, in which the first two years are taken at a high school and the next two at a university.

According to this proposal, and as reported in the *Diari de l'Educació* interview with the former rector of the UPC and president of the association of ex-rectors, the transition from high school to university would be direct, without gateways, and the student would obtain a higher vocational training certificate after passing the second year, and a university degree after passing the fourth. These could be taken in successive years or with a certain break in between should the student decide to chance their luck in the labour world, but without shutting the door to the possibility of returning to education at a later date. The degrees would be of "an eminently vocational character, aimed towards occupational needs", they would pay special attention "to the attainment of competencies" and would put special emphasis "on the dual methodology, work experience, learning through projects..." The curricula and competencies for each degree would be designed by mixed teams (VET-university), and also the teaching staff "would also be of a similarly mixed nature."

3.5. The perspective of socio-economic agents on dual university training: employers, chambers of commerce and unions

In dual training, the company is co-responsible alongside the university for the training, assessment and monitoring of the apprentice. Its involvement and commitment is far more intense than in the case of curricular or extracurricular internships agreed with the university.

Indeed, in the framework of the dual training, the company provides the student with a whole range of personal and material resources that suppose a real investment in terms of time and money, which is especially so in the case of micro-enterprises and small and medium-sized enterprises, which have less capacity and fewer resources, and happen to precisely be the most prevalent type in the Catalan business fabric.

There are a number of things that encourage companies to promote and participate in dual training programmes, although there are also others that make it difficult for them. Below, and at the request of ACUP, representatives of three Catalan employer associations (*Petita i Mitjana Empresa de Catalunya* (PIMEC), *Foment del Treball* and the *Fundació Privada d'Empresaris* (FemCAT) and the General Council of Chambers of Catalonia (CGCC) describe these elements.

They are also invited to consider, from the point of view of their member companies, the fundamental aspects that need to be taken into account when promoting and developing a dual university training scheme in Catalonia (the establishment of a specific type of employment contract that links the student to the company; the range of training offered; provision of additional resources, tools and media, and so on), and to put them in writing.



Sílvia Miró, director of Employment and Training Policies at Petita i Mitjana Empresa de Catalunya (Small and Medium-sized Enterprises of Catalonia – PIMEC)

www.pimec.org

The limited training culture, the views of most of our business fabric (99.9% of which are small and medium-sized enterprises) and the lack of recognition of the role of companies in training mean that the current motivations to participate in dual training programmes are still heavily limited by the need to hire/recruit workers. This causes a lack of stability in terms of the participation of companies, especially small and micro enterprises, in these programmes.

The size of a company conditions its participation in dual training and learning projects. Given that the Catalan business fabric is highly atomised (95% of it being micro and small enterprises that generate almost 70% of employment and 65% of our country's GDP), we must focus on those kinds of companies if we are to aspire to a viable, affordable model that is adapted to reality.

In order to foster SME participation, the model and methodology need to be different, with a new vision that incorporates the dual challenge of apprenticeship and innovation.

Only 1% of companies with salaried staff currently participate in dual vocational training in the education system, with a heavy concentration of medium and large companies (78%), i.e. the remaining 22% are small businesses and micro-enterprises.

It is especially hard for SMEs to implement dual training as they have more restrictions in terms of the available time, money and resources, while universities and companies will need to allocate adequate time and resources, foster the appointment and training of tutors, and ensure full recognition of their roles and competencies.

Instruments need be designed to facilitate the incorporation of SMEs, as well as to develop, monitor and evaluate the in-company training process.

The model must provide for these elements of flexibility to facilitate adaptation to the diversity and composition of the Catalan production fabric, and the participation of SMEs:

- **Coordination and support structures** for the functions involved in participation in dual training projects (for example, joint tutoring for groups of companies engaged in the same activity or located in the same region).
- **Measures to recognise the role in training of companies** (which invest in the process by making resources, experts, facilities, materials and so on available to the system), encouraging their commitment to higher degrees of sharing of training responsibilities, participating in apprentice selection, the design of learning activities and the assessment thereof, as well as other measures that need to be analysed, which are the following: tax deductions and Social Security benefits; benefits through grants and funding lines and social recognitions.

As this is a relationship of an educational rather than labour nature, we believe that the formalisation of the association between the company and the learner must have instruments that are adapted to this reality.



Iris Mª Molina, head of the Department of Knowledge and Vocational Training at Foment del Treball Nacional

www.foment.com

The main motivations that companies have to promote and participate in dual training programmes in higher education are:

- **They cannot find the qualified staff** that they need to hire.
- **They can have a person in the company for a much longer** time than with a regular internship, they are more implicated and they can see how they work. Companies greatly appreciate not only vocational training, but also certain attitudes among people, such as punctuality, teamwork, creativity, innovation, proactivity, etc.; attitudes that are easier to detect in the workplace than in a job interview. In other words, they also support human resources work done by companies to recruit staff and imply less investment in the process.
- **Some companies, by nature, have this corporate training culture** (they like to play a much more active role in apprenticeships).
- **They can train the person in their company culture** in their brand.

When we say dual, we mean an apprentice, someone who learns by working, and whose status is closer to that of a worker than to that of a student *stricto sensu*; therefore, it is essential for the model to be agreed with the most representative business and trade union associations as legal representatives of companies and workers. Hence, a model can be created that generates trust among both parties.

One of the most important issues that we have encountered in dual vocational education and training (VET) at the initial stages is the need for small and medium-sized enterprises to enter the model, as they are 99% of the production network; therefore, for us, one of the key issues is the need for support from intermediate entities, such as sector-level or regional business associations. The model also requires structural aid so as not to burden companies with matters that are not exclusively related to training (red tape, compensation for the cost of taking a person away from their regular duties to act as a company tutor, costs of needing to stop machines for the sake of learning, etc.)

Another issue that seems important to us is that the training provided needs to be what the company or sector needs. We find that companies tend to be advancing, in most cases, much faster than education and training centres are adapting to new processes and machinery, so recent graduates need specific updated training in the company's latest requirements.



Teresa Navarro, director general of the Fundació Privada d'Empresaris FemCAT (FemCAT Private Business Owners Foundation)

www.femcat.cat

For some years now, it has been observed that certain employee profiles, many of which are associated to university studies, are hard to find. The qualities and skills that are looked for in candidates are not necessarily technical or directly related only to very specific studies, but are a mix of professional aspects and personal attitudes and aptitudes, which can be acquired with a little effort and time. Companies have grown used to doing the work to complete the 'softer' part of their young workers' learning through the relationship established on regular university internships, and they respond to them in a very positive way. They therefore view dual training as an opportunity to forge a longer-term and more intense relationship with interns in order to offer all this training in parallel to academic studies and thus gain their loyalty and later hire them with all these skills and competencies already fully developed.

This does not mean that companies' interest in dual training is limited to 'uncommon' profiles, as having the company play an active role in a student's training heightens the benefits of being able to share a stage of their education that, in a dual system, not only fosters academic competence, but also a series of useful and necessary work skills.

Dual training makes the company an agent in a student's education. It is not merely a matter of guiding the student or getting them to practice the concepts learned in class; the company is also committed to getting them to acquire new concepts in the workplace. This requires effort and learning on the part of the company. At the same time, the university must understand what concepts the company values most in student training, how the workplace is

defined, what learning possibilities are available in that workplace and what the company is able to and not able to do. In this shared learning environment, the university and the company must be willing to listen to each other and learn from each other with regard to such matters as course content, the distribution of training goals between the university and the company, the most appropriate methodology for each item of content and the role of the tutor. Universities can train tutors and assist them, but they cannot turn them into teachers. In turn, the company must understand that university studies are not only intended to provide applicable knowledge, but must lay the conceptual foundations to prepare the student to continue learning throughout life.

If there is good listening and cooperation between the university and the company, formal factors become secondary, but both parties must be able to define, understand and respect the role of the other. Legal aspects and resources must be student-centred: if the company puts effort into training, it cannot also be expected to assume the full cost that would correspond to a trained worker, but at the same time it must be committed to the student; the right balance needs to be struck in this regard, providing the student with simple tools that do not increase the organisational workload for either the company or the university.



Jaume Fàbrega, president of the General Council of Chambers of Commerce of Catalonia

<https://www.cambrescat.org>

Companies participate in training projects for various reasons, such as the following:

- **To guarantee the availability of trained people** who have acquired the necessary skills for specific jobs. Some of these competencies are difficult to acquire without the collaboration of companies. (Sector need).
- **To ensure that the training that people receive can be adapted** to the specific needs of the company and foster transition through training in the company's particularities in order to save costs and reduce the time required for people trained in other settings to adapt. (Individual need).
- **To forge ties with innovative and research environments** using someone who is a worker, as a member of the company, and a student, as a member of a higher education institution. (Individual advantage).
- **To be able to recruit talent** that will make a contribution to the company during the candidate's training period. (Individual need).
- **To boost the relationship with the surrounding environment** through an exercise of social responsibility. (Social need).

All these motivations will incline the company towards collaboration. However, we must also be aware that participation in dual training programmes in higher education is not the only way to meet these needs and that there is a need for the right framework for relations, a sense of co-responsibility and the perception that the system is designed to respect these motivations and help to accomplish them.

The basic elements must guarantee that the training received in the company is of quality and is recognised, and can therefore be accredited; and that the contractual relationship with the student and the higher education institution is solid and effective in legal and labour terms, the achievement of which requires participation, counselling, monitoring and traceability.

There needs to be a similar mechanism to that used by chambers of commerce to manage what are normally about 100,000 agreements each year for different modalities of vocational training, including dual training, and which is as follows:

- **A mechanism for linking the company and the education centre** (registration of the agreement between the centre, company and the student, and which grants the parties access to management tools).
- **A system for accreditation and registration of suitable companies.**
- **A system to define training plans** based on companies' legal requirements and capabilities.
- **A system for monitoring the student's training activity** in the company involving the student, the company and the centre.
- **Validation and qualitative monitoring of training.**
- **A system for processing data** and monitoring the activity of the system as a whole.

All of this is complemented by corporate counselling, training for tutors and promotional actions in the form of fairs and other promotional events.

The system must be able to deal with individual situations, but also offer an overview for education centres, universities, regions and other agents that should be granted access.

The ability to implement such a system will have a major impact on society, streamline management and make the system as a whole more credible, as well as deterring views that could undermine its solvency.

As well as employers and chambers of commerce, an important role is also played by the unions, who are the legal representatives of the workers and also play an important role in the configuration and implementation of dual training in the Catalan University System.

ACUP, therefore, posed the same question to the General Union of Workers (UGT) and Workers' Commissions (CCOO) of Catalonia about the motivating and dissuasive elements with regard to dual training programmes and participation therein, and also regarding the fundamental aspects that must be taken into account when developing dual university training in Catalonia.



Jesús Martín, associate technical officer of the Secretariat for Equality and Training at the General Union of Workers of Catalonia

www.ugt.cat

Our organisation is clearly and resolutely committed to dual vocational training (VET), which serves to promote the training and qualification of working people, both in terms of initial vocational training and of lifelong learning. We also consider it a useful tool for boosting the professional competencies and skills that can be acquired through learning in the workplace and with an increase in internship hours in practice-based learning environments.

We consider VET to now begin with the LOMLOE (Organic Law Modifying the Organic Law on Education) in

compulsory secondary education with the implementation of the *Cicle Formatiu de Grau Bàsic* (Basic Vocational Education and Training), to continue in post-compulsory education with *Cicles Formatius de Grau Mitjà* (Intermediate Vocational Education and Training) and *Batxillerat* (Upper Secondary Education), before entering tertiary studies in *Cicles Formatius de Grau Superior* (Higher Vocational Education and Training). We would like to point out that we believe that universities currently undervalue credits from higher vocational education and training. In fact, curricula should be agreed with the Ministry of Education so as to reach 120 credits, in line with the 2+2 proposal made by the Laude Collective.

We view VET as a programme that promotes flexible education and training, whereby students are able to enter and leave the academic or training environment to hone competencies in a constantly changing world in which there is a need for continuing training. Lifelong learning is the concept of being able to boundlessly re-qualify oneself professionally; this is where public universities come in as open, academically flexible and at the same time professionalising institutions.

The role of the professionalising university: This is a matter of finding a balanced combination of theoretical knowledge and practical training integrated in a real work environment, the main characteristics of which should be, on the one hand, cooperation mainly with small and medium enterprises, which make up the majority of our business fabric, and publicly funded vocational university colleges, on the other. Students will receive financial compensation. At the UGT, this must be in the form of a contract.

We consider that the combination of the learning done in real environments (companies) offers added value while at the same time the student starts to be familiarised with the work environment, and this makes dual vocational training one of the most complete types of programme in terms of the transition between academia and employment.



Ricard Bellera, secretary of Labour and Training and **Àngel Garcia**, head of Education Policy at the Worker's Commission of Catalonia

www.ccoo.cat

The Worker's Commission of Catalonia is in favour of dual university training with rights that students can use in order to learn with practical training and to acquire transversal, complementary competencies in the company, while respecting the labour framework required for a relationship between a student and a company, and which must be formalised through a contract. A relevant distinction for us is that while dual training is justified on undergraduate programmes, it is not on master's degrees, where the person already has a qualification that must be respected.

As a motivation, we particularly note the social and labour contexts of young people, which have been impoverished by the great recession and have worsened further by the effects of COVID-19, leading to a need for qualitative changes. Today, only one in five young people under the age of 30 are able to support themselves alone, and the unemployment rate for people under the age of twenty-five is 42%. Given the need to adapt the production fabric to the asymmetric impact of the pandemic and the challenges of climate change and digital transition, practice-oriented training can foster the specialisation of both professionals and the production fabric.

Lifelong learning as a key factor for the permanent improvement of working conditions and the productivity of the production fabric involves permanent transition between training and work, which can be enriched with formulas and mechanisms for coexistence. These must ensure at all times that in-company training is not synonymous with instability or subject to discretion, but is a guarantee of personal and professional emancipation.

Finally, dual university training may offer the leverage to reverse the country's current gender gap and resolve the shortcoming of the overrepresentation of males in strategic sectors with more technological components.

In the construction of this model, participation of and consensus with the most representative social agents in Catalonia is a key factor due to the effect that dual training in higher education has on the production fabric and job quality. These should not be considered "external agents" at all.

Regarding the basic elements, the first is to ensure that the priority of dual university training is "education" and not business. The way both logics are integrated and combined needs to be addressed, and also how they are implicated in the definition and concretion of alternation. For us, training in the workplace should encourage the acquisition of transversal competencies and learning outcomes, and thus boost the company's specialisation process and improve its production, but not the other way around. The ultimate responsibility lies with the university and not the company, in terms of labour conditions, security, support, tutoring and qualifications. Under no circumstances should the university be placing knowledge at competitive prices, but should instead prioritise the acquisition of transversal competencies, learning outcomes and student well-being.

The relationship between the company and the student must be based on a contract and should respect current regulations on the minimum wage and the stipulations of collective bargaining agreements. The Inter-professional Agreement of Catalonia facilitates the possibility of boards that make such agreements by establishing specific accords in this line. Students over the age of twenty-five who are unable to benefit from training and employment contracts need to be hired in other ways until regulations are set on a state level.

Tutoring is a key aspect, and here the tutors who monitor the process must have a regular professional relationship with the university, which should also, if possible, participate in the training of tutors in the workplace. These should participate in a non-majority manner in the evaluation process.

The quality of the whole process must be guaranteed by the evaluation made not only of the students, but also of the companies. Another key aspect is face-to-face training, which should be the priority option. Any non-contact in-company activity must be justified and must be specifically supervised by the university to guarantee coherence with the pedagogical mission.



3.6. The voice of the main actors in dual university training: the student/apprentice and university and company/organisation tutors

Dual university training is characterised by a collaborative relationship between three parties: the student/apprentice, the academic or university tutor and the tutor at the company/organisation. This mechanism of pedagogical engineering between the three actors involved in training generates synergies that considerably enrich the teaching and learning process and provide benefits to all three parties.

In this second edition of the report, we sought the views of these three parties involved in dual university training in order to gain first-hand knowledge of what their experiences have been and what they feel about them. All of them are associated to the University of Lleida, a leading institution in the implementation of dual training in higher education in Catalonia.

Albert Castell, associate professor and deputy vice-rector for the Academic Planning and Quality of Academic Internships at the University of Lleida (UdL)

www.udl.es

What do you feel about your experience as an academic tutor on a dual university training programme?

Dual training on the Master's Degree in Industrial Engineering began at the University of Lleida in the 2016-2017 academic year, with myself as the coordinator. Until 2019, I coordinated the Master's degree and the implementation of dual training on it, as well as acting as an academic tutor for different students on dual programmes. Since 2019, I have been Deputy Vice Rector for the Academic Planning and Quality of Academic Internships, the unit in charge of dual training at the University of Lleida.

For the last five years, I have been an academic tutor for fourteen students taking the Master's Degree in Industrial Engineering at the University of Lleida as a dual programme, and these students have done that dual training at a total of six different companies.

Can you identify the most positive elements of your involvement in this modality of education?

The most positive elements of dual university training have been observing the integration of the knowledge that students gain with their ability to put it into practice in real professional situations. Another very positive element is how the students' ability to take on new tasks and responsibilities has progressed, as well as their satisfaction and increased confidence when they see their projects up and running.

A further positive aspect is the much closer relationship between industry and university, which helps to identify new areas for collaboration, both in teaching and research.



University and company/organisation tutors

The dual model encourages the university to revitalise and adapt academic curricula to society and industry's requirements for new professional profiles. It also helps companies to regenerate their production systems early, quickly and efficiently, as they can hire the students/apprentices and thereby save on the costs of initial training, shorten trial periods and ensure a successful recruitment process. The dialogue established between the university and the company/organisation also boosts research, innovation and the transfer of knowledge and technology.

In order to run a training project properly, it is essential to guarantee not only permanent support for the student/apprentice by the university and company/organisation tutors, but also constant and fluid collaboration between both figures, as they are co-responsible for ensuring coordination and permeability between academic and vocational training.



And the aspects that require improvement in order to develop such a model?

The main improvement needed is to establish a specific regulatory and legal framework for dual university training that will produce a clearer and simpler definition and regulation of, among other things, contractual matters. This regulatory framework is especially important for cases where dual training is done in public institutions. There also needs to be a procedure for verifying and accrediting the certifications that include dual training programmes.

It would be a major improvement to offer joint training of academic tutors and company tutors to explain how competencies are assessed, for although this is common practice in the academic field, this is much less the case in the corporate environment.

What is your overall assessment of the experience?

I consider dual training to be excellent, as it allows students to acquire a range of knowledge and competencies for application to real cases, which otherwise would not be possible. This immersion means students are able to consolidate their knowledge in a manner that is more integrated in their field of study as a whole.

Gerard Ferrer, project director and head of Transference at Alier, S. A.

www.aliersa.com

What do you feel about your experience as an academic tutor on a dual university training programme?

The experience is very positive. In my particular case, I had already taught at the university, giving training of a markedly more theoretical nature. Dual training is clearly applied in nature, and this shows in the students' interest and motivation. I think, in the case of a master's degree, they enjoy it more.

As for tutoring itself, monitoring is relatively straightforward, and there have been no problems fulfilling the requirements for assessing dual training. However, it does mean that there is an extra amount of work to be done to plan the students' tasks due to the need to work specifically on each of the competencies to be assessed each semester.

Can you identify the most positive elements of your involvement in this modality of education?

The most positive thing is to continue to be associated to university training and to be able to offer a complementary, more industrial view to students that will help them in their transition to the labour/industrial world. At the same time, this contact with the university offers a chance to study synergies with the company and possible partnerships in other areas, such as, above all, R&D&I projects, as well as signing internship agreements. For the company, it is a very interesting situation in terms of recruiting talent and training potential future workers, and at the same time it is a quality support for its development.

And the aspects that require improvement in order to develop such a model?

A little more flexibility when it comes to choosing the subjects to be assessed in the company. Perhaps the number of specific technology subjects that can be picked as training activities in the company could be raised in order to be able to better adapt the assessment of the specific technology on the master's project to the reality of the company. This would avoid the need to do activities in the company specifically in order to assess a subject, and instead make all the activities of mutual interest, both for running the business and for dual assessment.

I also think some competencies could be unified and specified better by reducing their number and thus making it easier to programme the activities that the student has to do each semester.

What is your overall assessment of the experience?

My overall assessment is very positive. I think the students are developing very well, and their interest and willingness have always been excellent. Personally, I am very satisfied with the experience, especially because of the growth observed in the students, the quality of the work they are doing and the positive impact that their presence has had for the company, especially in terms of organisation and efficiency in the development of studies and projects.



The student/apprentice

As for the third actor, the student/apprentice, he or she benefits from dual university training in many ways.

First, this training gives them real and effective work experience during the training process, which helps them to integrate theory and practice, i.e. to assimilate knowledge and, at the same time, acquire professional and procedural competencies.

Secondly, it fosters progressive and uninterrupted insertion into the labour market, often by joining the same company/organisation where the programme was taken and whose climate and culture the graduate will already be familiar with.

Finally, it makes it easier for students to realise that they made the right choice of studies or, otherwise, to realise before it is too late that it is not their vocation in life.

However, it does require greater commitment and more time, although it also fosters a higher degree of maturity, as it requires students to perform the duties of both the professional and the academic environment. That is why the work is often paid.



Maria Carme Peguera, graduate in Primary Education, as a dual programme and specialising in Physical Education, at the University of Lleida (UdL) (2016) and currently taking a PhD at the same university

What do you feel about your participation in a dual university training programme?

As a dual college student, I was able to get to know the professional context from the very first moment and find out if it really was what I wanted to study and do in the future. I also accessed a wide range of references in the labour world. Also, being in four different types of centre and acquiring knowledge of the broader reality boosted my ability to adapt and be flexible, which otherwise I would not have had until I started working as a teacher.

However, dual training also requires the investment of more hours than on a non-dual degree in order to perform at your best in both contexts. In doing so, the sense of accomplishment is greater, as these two contexts are connected, and by improving in one area, such as in work experience, you will also be more motivated for the other: university.

What was your motivation for studying this way?

To get to know the professional reality from the outset and therefore be able to link theoretical and practical knowledge. Being in both contexts, university and school, promotes shared projects between university subjects and the labour context, as well as the wealth it represents for learning and professionalization.

Which of the skills and competencies that you have acquired do you think you have been able to consolidate best by taking a dual programme?

The ability to reflect on practices to innovate and improve classroom activity, as well as assuming a commitment to professional development both of myself and of the education community. Also getting to know how centres are organised and about the diversity of actions involved in their running (code of ethics, resolution of conflicts, etc.).

Can you describe your relationship with the academic and company tutors?

Without neglecting the roles of expert and apprentice, the degree of trust and empathy is very high, which fosters self-confidence and the development of professional competencies. The training-based link with the mentor encourages reflective communication and allows the learner/apprentice to be an active member of the school.

What advantages and disadvantages have you encountered in dual university training?

The advantages are socio-professional incorporation, training closer to the future profession with better coordination and links between training contexts (university-labour). The disadvantages are tension between the dual identity of being both a student and a teacher, and the need for support to make a connection between conceptual training logics and real action.

Please cite two or three reasons why you would recommend dual training to a colleague.

First, it allows you to learn more about workplaces of different types and in different realities. Second, you get support from tutors at centres and at university, and it is closer and more continuous. And third, it establishes a group/network of relationships with which you can share professional culture (belonging to a group, sharing experiences, reflexivity, motivation, etc.).



Vítor Luiz da Silva, master's in Computer Engineering, as a dual programme at the University of Lleida (UdL) (2017) and currently taking a PhD at the same university

What do you feel about your participation in a dual university training programme?

I am Brazilian and I was studying for a master's degree in Brazil when, with 8 years of work experience, I decided to take dual training to pay for university. It was not difficult for me to fit into the company, but it has been difficult getting people to appreciate that I am not a mere intern, but a master's student who knows how to get by in the labour world, as I demonstrated by developing a data structure in three months that solved an old problem at the company. The definition of the final project was a complex matter, but the project was hugely successful with its centralisation of Logs and Big Data. One of the company's current objectives is to become ISO 27001 compliant. I am still at the company as a student on the Government of Catalonia's Industrial Doctorate Plan.

What was your motivation for studying this way?

Financial support to carry out research on a specific topic is a real problem. Also, in the middle of a master's degree, I decided to study part-time while working. There is nothing better than working in what you study, and vice versa.

Which of the skills and competencies that you have acquired do you think you have been able to consolidate best by taking a dual programme?

The ability to understand the role of research and how it is put into practice in the company, which has led me to frequently change hub in order to contribute ideas in accordance with the latest technological advances, and also to apply the real-life parameters of a company to traditional academic research.

Can you describe your relationship with the academic and company tutors?

The academic tutors have been like godparents, because they have always been very approachable and have always been there to help solve any problems that have arisen. As for the company tutors, as I already had experience, I didn't depend on them so much to make progress. Their role has focused on bureaucratic matters and the company's internal procedures, rather than the technological aspect.

What advantages and disadvantages have you encountered in dual university training?

The main advantage is that being part of a company forces you to learn effectively and often in record time in order to solve day-to-day problems. It forces you to focus on the problem. The biggest disadvantage is that the company cannot offer comprehensive training on important topics because it naturally focuses on dealing with its daily problems. The student needs to be proactive and know how to look for what is missing from the training offered by the company.

Please cite two or three reasons why you would recommend dual training to a colleague.

First, it offers the necessary work experience for most recent graduates. Another motivator is that they will learn to work with the most advanced techniques but at the same time they will be subjected to the real restrictions of a company. And finally, there is a great chance of being hired by the company.

Conclusions and proposals for the promotion and development of a dual training model in the Catalan University System

Modern society is going through major changes, which are happening at an ever-faster pace, motivated to a large extent by technological developments. But it is also facing challenges (climate change, energy resources, water management, organisation of labour, democratisation and so on), which need to be tackled globally and through knowledge and innovation. Training is indeed a key element for progress, and it needs to be well-structured and oriented in order to adapt to society's needs and offer opportunities for the professional growth of young people.

In this context, university training must do its bit in response to these emerging challenges by devising different strategies grounded on a clear identification of needs and in agreement with society's different agents. In particular, dual training is presented as a form of vocationally-oriented education to foster the active participation of society and improve the relationship between universities and companies/organisations, while also being made more attractive to young people. The huge success with the implementation of this modality of education at European universities has showcased the many benefits it offers to the three actors involved in the training process: universities, companies/organisations and students/apprentices.

For all these reasons, the Catalan University System must include dual training in its courses and adapt the model to the particularities of the Catalan production fabric and society, proposing a framework and regulations that will foster its development and provide solid guarantees to all concerned.

As a result of the extensive work done to share ideas in this report, the Catalan Association of Public Universities (ACUP) has made a series of proposals aimed at all the social agents involved in the promotion and development

of dual university training. For purposes of clarity, the proposals are structured into two areas: political and institutional, and organisational and pedagogical. However, there is also a first recommendation that feels needs to be accomplished before any of these.

Based on the cornerstones of dual training, presented in Chapter 1, it is important to define its fundamental characteristics in order to clearly differentiate it from external, curricular or extracurricular internships, and to determine which training programmes correspond to this type, as well as those that do not. The most relevant aspects to consider here are the number of credits completed in the company/organisation, the way in which double tutoring is organised and how involved the company/organisation tutor is in assessment, and the type of legal tie between the student/apprentice and the company/organisation.

1. Political and institutional proposals

The political and institutional sphere refers to the different public administrations that have a say on this matter, through the competent governing bodies, in order to establish the necessary legal framework for dual university training and promote public policies to support its implementation. The proposals in this regard are as follows:

- **Create a specific employment contract** that fits the nature of the dual model and recognises the unique role of the student/apprentice as a worker in training and, at the same time, effectively regulates the framework for the relationship between the student and the company/organisation to ensure they receive the necessary legal security.
- **Make provisions for situations that do not exactly comply with the five basic principles** of dual training, for instance when the company/organisation cannot legally employ students/apprentices due to forming part of the Public Administration, to ensure that they still fit the model and can be duly recognised

- **Take into account the document *Guidelines for the Verification and Implementation of Dual Training on Official University Degrees***, drafted and approved by the Catalan University Quality Assurance Agency (AQU Catalunya) in February 2020, and the Protocol for recognition of dual training on official university degrees and master's degrees implemented in the Basque University System.
- **Promote support policies addressed at universities and companies/organisations** participating in dual training programmes to promote and foster their deployment (e.g. grants for tutor training, tax incentives, bonuses and so on), in consideration that the Catalan production fabric is mainly made up of micro-enterprises and small and medium-sized enterprises.
- **Devise a communication plan** to make society aware of the main advantages of dual training and foster a change of culture among universities and companies/organisations in support of this training.
- **Explore proposals that foster continuity** between higher VET and vocational university studies.
- **Take as a reference the experiences and good practices** in the field of dual university training elsewhere in Europe, in Spain (Basque Country) and in Catalan universities that are already implementing certain pilot programmes on undergraduate, masters and doctorate degrees (Industrial Doctorates).
- **Consider what has been learned** in the field of dual vocational training.
- **Allow for sufficient curricular flexibility** to fit training activities into syllabuses that are adapted to the wide diversity of students and companies/organisations that participate in the same training programme.
- **Offer a brief face-to-face training session** to tutors from the company/organisation on the dual training process, and the required follow-up and assessment of the competencies acquired by the student/apprentice. In this regard, it is a good idea to produce a guide for company tutors that covers all these aspects.
- **Guarantee that equivalent training is provided on both dual and non-dual programmes.**

2. Organisational and pedagogical proposals

The organisational and pedagogical field refers to all matters related to the nature of dual training, as well as the relationship between the three actors involved (student/apprentice, university and company/organisation). The proposals in this regard are as follows:

- **Promote links between universities in different countries** and foster international student mobility and exchange with regard to dual training, and make the respective networks of collaborating companies available to them.

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Other resources

- Thematic Studies by the BCN Formació Professional Foundation
Estudis Temàtics - Fundació BCN FP (fundaciobcnfp.cat).
- VET Observatory of the BCN Formació Professional Foundation
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- Seminar *La formació dual universitària per a la societat del coneixement*, Catalan Association of Public Universities (ACUP), 15 December 2020.
<http://plataformacti.cat/seminari/2020-la-formacio-dual-universitaria-per-a-la-societat-del-coneixement/>.
- Seminar *Incorporar les competències transversals a la universitat: preparant a les persones graduades per a l'ocupabilitat*. Catalan University Quality Assurance Agency (AQU Catalunya), 7, 8 and 9 October 2020.
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