

Promotion and development of dual education in the Catalan university system

Report

ACUP ASSOCIACIÓ CATALANA D'UNIVERSITATS PÚBLIQUES



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Introduction

The current social environment and high youth unemployment afflicting Europe, and Spain in particular, has led European policy to favour education seeking to promote the employability of young people. The crisis and the effect it has on the high unemployment rates, especially among the youth, has led some countries to give great importance to dual education at all educational levels and to speed up policies and reforms for the development of this system of education.

According to the report produced by the Catalan Youth Observatory (2014), during the first quarter of that year the unemployment rate in Catalonia among the youth, aged between 16 and 29, stood at 37.5%; that is to say, 247,600 young people out of work. In addition, it is also observed that since the beginning of the crisis, unemployment has had a greater effect on unqualified youngsters, 52.2% unemployment, than on young people who have completed higher education, 28.2% unemployment. Education, therefore, is a key factor for the incorporation of young people into the labour market, which means a lower risk of unemployment in this population segment.

The Declaration of Poblet¹ (2014) assumes that an economy based on knowledge and innovation should be supported by a close relationship of collaboration between business, universities, research and technology centres, administrations and the society to which they belong, and establishes a commitment to actively promote a strategy of competitiveness and social and economic progress that creates jobs in Catalonia. This leads us to state emphatically that the Catalan society must base its dynamism, its cohesion, its progress and its competitiveness on human capital, on a productive sector that generates skilled jobs. In this sense, we must focus on the growth, internationalization and innovation of existing companies and on encouraging new companies interested in innovation.

The recent changes undergone by the Spanish university system and its convergence towards the European Higher Education Area (EHEA) point to an increase in the importance of the relations between the university and enterprise and their and society's changing needs. A fluid relationship between university and enterprise/institution, right from the earliest stages of university education, is essential for the acquisition of adequate professional skills and to facilitate the transition of university graduates into the professional world.

The tendency to offer university studies that are more oriented towards professionalization has contributed to the development and growth of work integrated learning in other countries. Dual education is a strategy of training and professionalization that must be taken into account for young people, for the not so young, for companies and for society.

The particularity of dual education is that it places the issue of employability at the core of education.

Dual education, or work integrated education, optimizes professionalization for direct access to employment. It is designed for more professionalizing qualifications, such as engineering, education, law, business management and administration, and audiovisual communication, among others. Our conviction leads us to propose high

¹ <http://plataformacti.cat/sites/default/files/pagina/16/documents/declaracio-de-poblet.pdf>

quality dual education based primarily on dynamic cooperation and co-responsibility between the academic and the professional world.

Dual education in the Catalan university system is regarded as another training pathway, for both face-to-face and virtual systems, to improve individual employability and development, increase suitability and continuity between the demands of the professional world and the initial training of university students, and achieve greater economic efficiency and social integration.

In this document we present the necessary mechanisms to implement a system of dual education in the field of higher education in our country. In the first part we describe the concept of dual education or work integrated education, the basic principles and the benefits of this training system. Next, we present the vision of two European countries (Germany and France) that have vast experience in this type of training. Finally, we present the key elements that we believe should be taken into account when considering the creation and development of dual education in the Catalan university system.

Dual education

In the context of an unstable and complex professional and working environment there is a need for people who can adapt and who are predisposed to mobility. The change in work organization has given rise to the emergence of the concept of skill as the goal of training. In addition to the specific skills of each qualification, the skills-based approach requires professional actions that enable the invention of responses in new or changing situations and dealing with constant evolutionary situations.

Dual education enables responding to the goals of both qualification and of professionalization and constitutes a coherent pedagogy that relates two places of training within a single educational project.

> The concept of dual education

Dual education or work integrated education is based on the principle of the complementarity of learning in an academic environment and learning in a professional environment.

In dual education, the student becomes the apprentice who studies.

Dual education is a complex system of training that requires an organization and a structure to ensure and give coherence to the alternating learning process in the context of a training period experienced in two environments.

Dual education and learning are two inseparable, intrinsically related concepts. Dual education provides the conditions that facilitate and give meaning to learning. However, dual education **requires pedagogy learned from practice and highly flexible training programmes, educators and institutions.**

Interest in dual education lies in the fact that the company is not limited to being merely the place where theoretical knowledge is consolidated, rather it provides experimental situations that foster the acquisition of skills.

It is a system that must consider the multiple stakeholders in the company and the multiple stakeholders outside the company: institutional, educational, financial, etc.

Dual education allows working towards a qualification at the same time as acquiring solid professional experience that benefits from the two learning environments.

Dual education is perceived as another way of learning as it offers the possibility of starting a training process that concerns experience in complementary training areas. In this regard, dual education transforms the traditional view of knowledge-based training, as it is grounded on the principle of the complementarity of the knowledge that students acquire in an academic environment and that they acquire in a professional environment, not only to build and produce skills but also to acquire and develop work experience while gaining formal knowledge. Dual education experienced in contiguity does not in itself favour the “cognitive matching” between formal knowledge and practical knowledge, but coherence should be given and strategies “invented” or modelled to develop dual education at the university.

Learning in dual education means that the learner integrates the knowledge learned in the academic situation and in the professional situation. The construction of “two channel” training requires consistency between the two periods of training as well as pedagogical engineering that will be the key factor that will bring the three educational stakeholders together: trainee, university and company/institution.

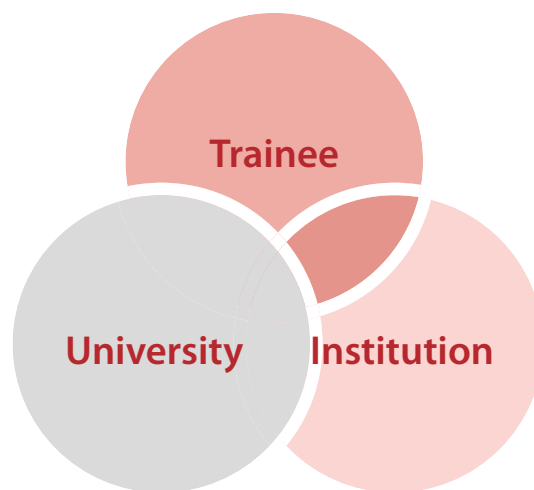


Figure 1: Stakeholders in dual education
Compiled by authors

Basic principles of dual education

Dual education is a training system aimed at professionalization and is based on respect for the fundamental principles:

1. Acknowledging a unique training period that refers to two types of phases that must be coordinated and must be complementary and interactive: one in an academic environment and the other in a professional environment. This training period should be designed and built between the university and the company/institution. This means that the company will be responsible jointly with the university for the training and evaluation of the activities undertaken by the trainees in the company.

2. A general pilotage of the process of dual education that is structured, organized and that associates the elements that are juxtaposed between the university and the company/institution so that training can take shape in a coherent system.

3. Support through a system of recognized tutorials that is not limited to transmitting knowledge. Support and double tutoring are crucial elements of dual education. Each trainee must have a company tutor and an academic

tutor. The tutors' aim is to support trainees throughout the training process so that they may become progressively independent and develop the ability to reflect as well as both professional and academic skills.

4. Contract of employment for trainees from the start of their training. The company and the trainee establish a contractual relationship by means of a specific employment contract for dual education. This contract grants the trainee worker status. During the training period, each trainee performs the tasks of a responsible professional position in a working environment.

5. Formal recognition that sanctions their whole set of professional skills, not just their technical abilities, with explicit recognition in the official qualification.

Benefits of dual education

The benefits and qualitative improvements provided by dual education in higher education are:

Professionalization. This enables identifying trainees' degree of professional vocation when they have still not acquired the specific skills of the profession; however, it offers them the opportunity to get theoretical and practical knowledge to interact. Through this incipient praxis or experience, trainees acquire commitment, responsibility, professional ethics and independence and shape their professional identity.

Motivation by the stakeholders involved. The implementation of this modality entails greater motivation towards the profession by the trainees, the university, the university lecturers, the companies/institutions and the tutors of the participating companies, since there is a rapprochement to the professional field and to the reality of the company/institution and social recognition of this new model of teaching/learning learned through professional praxis.

Emergence of new professional roles. On the one hand, the company tutor is a professional and at the same time a trainer who shares the responsibility of training with the university tutor. And, on the other hand, the trainee combines the role of student and of apprentice in the two training contexts. This forces establishing continuous and permanent training processes (recycling of the three stakeholders).

These benefits return to the three stakeholders involved in dual education, the trainees, the university tutors and the company tutors, in three main areas: professionalization, motivation and university-company/institution relations.

Benefits / Stakeholders		Trainees	University tutors	Company tutors
Professionalization	Professional vocation	●		
	Acquisition of professional skills	●		
	Mastery of the praxis: procedural skills	●		
	Motivation towards the profession	●	●	●
	Developing entrepreneurship: knowledge and know-how	●		
Motivation	Process of teaching and learning from the praxis	●	●	●
	New professional roles	●	●	●
	Knowledge of the reality of the company/ institution	●	●	●
	Adapted rhythm that enables establishing permanent bi-univocal support between the company and the trainee.	●		●
University - Enterprise relationship	Saving on the employee's initial training cost, the trial period and the selection process.			●
	The trainee's professional experience acquired during the initial training process who gets to know and becomes integrated in the climate and culture of the organization and increases the chances of getting employment within the organization	●		●
	Provision of dialogue and the incorporation of changes to the academic curricula.		●	
	Bringing the trainee to the labour market gradually favouring transition processes at work.	●		●
	Promotion of collaboration in the areas of research and knowledge transfer		●	●

Table 1. Benefits for the three stakeholders of dual education
Compiled by authors

Dual education in Spain and in other European countries: the cases of Germany and France

Dual education or work integrated education in higher education has been implemented in many European countries for some years. Two countries have prioritized this training system: Germany (dual) and France (alternance).

The current situation of dual education in Spain

Although this training is not yet significantly developed in Spain – unlike other European countries which have known about and developed this type of training for some years–, some dual education experiences do exist. The most relevant is that of the engineering school of the Instituto Máquina Herramienta (IMH) attached to the University of the Basque Country (UPV). This is the only institution that has implemented a dual education strategy in higher education since twenty years ago. For the 2012-2013 academic year, the IMH began the Engineering Degree in Innovation of Processes and Products, in dual education, with the authorization of the Government of the Basque Country and of the Spanish State. It is the only dual-mode degree recognized by the Spanish Quality Assurance Agency ANECA (2012). In Catalonia there is a unique experience at the University of Lleida on the bachelor's degree in Primary Education as well as the Master in Operations Management and Distribution and the Master in Computer Engineering.

> The model of dual education in Germany

In the **German dual system**, the vocational training part is the equivalent to 1 or 2 days per week depending on the regions (Länder), and the major part of the training takes place in-company or at the company's own training centre.

The organization of dual education issues from the federal law of 14 August 1969 on professional training, extensively revised in 2005, which provides that training must contribute the skills, knowledge and abilities necessary in order to exercise a qualified professional activity in the evolving working world. This law provides that the regulations on in-company training are national and according to trades (365 trades are registered in the catalogue and there are more than 15,000 specialities).

These regulations, or codes of training, are drafted among the social stakeholders (the chambers of commerce, professional associations,...) and the Federal training institute (BIBB, in coordination with the KMK, Conference of Regions responsible for the theoretical part of the trainings). The regulations establish the programmes, the duration of training, the methodical progression of the training phases, the aptitudes of the trainers and the transversal and specific skills the students must acquire.

The Chambers of Commerce (ICC) are responsible for advising and monitoring the training companies in terms of the application and compliance of these regulations (verifying and qualifying the trainers) and setting interim and final examinations.

Financially, there is no general rule of contribution or duty on the part of the companies for the development of dual education. However, there are collective agreements that set the salaries of the trainees (between €600 and €1,500 depending on the professional branch), and, they sometimes provide for a reduction of the costs of intercompany training centres of the professional branch.

The absence of legal obligations for companies is compensated by the strong sense of responsibility and commitment of the social stakeholders when it comes to analysing the evolution of professions and in order to provide opportunities for training and future employment of professional branches.

> The model of dual education in France

The model of dual education in France, known as “formation en alternance” or alternance training, was progressively opened to higher education studies on the basis of the law of 1987.

The two peculiarities of the French model of alternance are **pedagogical support and a specific employment contract**: a traineeship contract, for students in initial training, and a professionalization contract, for those over 26 years of age and/or the unemployed.

Pedagogical support means that throughout the training period, the trainee is supported by the company tutor and by the university tutor.

The employment contract is governed by the legal regulation of workers' rights. The trainee has a specific contract for alternance training from the beginning of their training and becomes a student worker.

Financially, alternance training constitutes a system that is the subject of regular adjustments and developments. There are two sources of funding for alternance training: on the one hand, the State via the Regions and, on the other hand, companies through the tax on training via the agencies that collect it.

Some notable data concerning alternance training in France:

- In 2008 around 300,000 traineeship contracts were signed in the private sector and about 7,000 contracts in the public sector at all levels of training. Currently, there are some 450,000 trainees and the figure is expected to reach 500,000 in 2017.
- 59% of companies that hire trainees have less than 10 workers.
- More and more companies with over 250 workers are signing traineeship contracts.
- In 2008, 12% of new contracts were signed compared to the 3% that were signed in 1992.
- In higher education, there are currently about 80,000 trainees, 17,000 companies and 13,000 higher qualifications.

Conditions favouring the development of dual education

The dual education experience in other countries, such as Germany or France, can serve as a model, but not as a template when it comes to devising the dual education system in higher education that we want and/or need in our country.

It is not a matter of transferring either of the two briefly presented models. We must take into consideration the general conditions at play and steer dual education in accordance with the country's special educational, social and economic characteristics.

However, we propose a number of conditions that we believe necessary and that may help in the construction and development of this other way of training in our university system.

1. Strategic conditions

- Analyse existing conditions: the priority objectives, the institutional, cultural and curricular conditions and the pedagogical requirements.
- Determine the strategic objectives.
- Involve the interested parties, the participation of all of the interested stakeholders, and arrange the means of collaboration.
- Plan implementation and action.
- Cooperate with other countries that have a long track record with regard to the implementation of the training model.

2. Institutional conditions

- Use dual education to become a joint outreach strategy of university and company/institution.
- Consider the company as a place for training adapted to its needs to construct the pedagogical progress and, at the same time, (re)adapt the proposed training to the requirements of the professional environment.
- Dual education requires a legal framework: employment contracts for university students of this type of training, an evaluation system and official recognition of these studies.
- At the beginning, the university must identify and validate companies that can adapt to the needs of the dual student. The rhythm of dual education must be negotiated between the partners (university-enterprise/institution) to ensure the student's adequate pedagogical progress and prevent dropping out from university studies.
- Regulatory areas are essential to define the time aspect and the trajectory (activities, axes of progression, evaluation) and so that the partners can know them and recognize them in the training activity.

3. Organizational conditions of the teachings

- Adapt the training programmes (curricula) jointly with the companies/institutions.
- Ensure consistency between the mission proposed in the company and the goals of the training at the university to obtain the diploma.
- Use pedagogies, from the praxis, that facilitate reflection on the experiences in a work situation so that the student is able to conceptualize the experience and guarantee the acquisition of skills.
- Create educational teams to monitor the activities in order to improve the student's learning processes.
- Provide the company with the instruments for assessment and follow-up that represent the student's progression in the company and, at the same time, serve as communication tools between the company tutor and the university tutor; university and enterprise share training and assessment.
- Assume and accept new forms and stakeholders of training and assessment.

Proposed dual education model in higher education in Catalonia

The importance of the coherence in each country between the main features of the education system, the ways of organizing work and the companies do not enable simply importing a foreign model. What is suitable in one country it is not so in another. The transferability of training models is feasible if you make adjustments with respect to each country's employment policies and if it is made easier for companies to interact with the structure of the education system.

In our case, if we want to implement dual education in the Catalan university system, there will be a need for certain coherence and to “invent” or model educational strategies for the development of this training. Hence, we propose dual education in the Catalan university system as an original professionalization structure so that the university students who are trained in this other training modality acquire and develop professional skills to ensure rapid adaptation to the working world.

This model is regarded as a network of partners at different levels -political and institutional, organizational and operational, and pedagogical and of the interrelation of stakeholders- where the emphasis focuses on the principle of shared responsibility in training matters. The model must, therefore, ensure the three levels of development of dual education: political-institutional, organizational, and pedagogic engineering.

The **political-institutional level** refers to the State, which should be involved through the competent governing bodies in the field of administrative (labour law) and educational (universities) regulation. It should also finance the companies that hire trainees- for example, through exemptions from social charges- and the universities.

The **organizational level** refers to the dual education management body, both in its structure and in the organization of training in the Catalan universities. It would also receive and manage State funding and administer it to the universities, in accordance with the established criteria.

The **pedagogical engineering level** refers to the pedagogical relationship with the company. It may be a new centre/service or a university service. The members represented would be professionals from both environments: the academic and the professional.

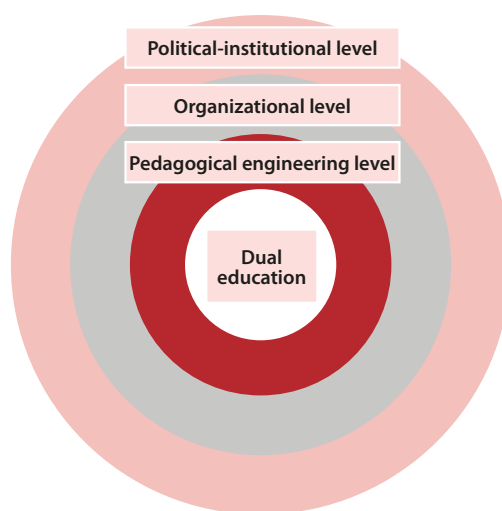


Figure 2: Proposed dual education system in Catalonia. Compiled by authors

What do we need in order to develop a dual education system in higher education?

Dimension	Items	Needs
Institutional	1. Partnership and shared responsibility for training	A closer relationship with the business sector Consider the company/institution as a training environment.
	2. Rhythm and type of dual education	To consider the training rhythm of the companies/institutions
	3. Institutional policies	Funding policies that promote this type of training Official academic recognition of qualifications
	4. Spaces for the regulation of dual education	To provide meeting spaces to organize dual education between university and company/institution
	5. Contractual references	To establish a specific legal contracting framework for dual education
Didactic	1. Didactic strategies	More flexible curricula adapted to the needs of the companies/institutions
	2. Evaluation system	To accept the power of the company/institution to train and evaluate
Pedagogical	1. The trainee	Students become trainees who study. Greater autonomy is required
	2. The university tutor	A change of role and responsibilities of the teaching staff: the lecturer becomes the reference person who supports trainees in the training process. Maintains permanent dialogue with the company/institution
	3. The company tutor	A new stakeholder appears in trainee training: the company tutor, a key piece in this training mechanism
	4. Support and double tutoring	Trainees enjoy double support: at the university and at the company/institution

Personal	1. Motivation, independence and responsibility	Trainees take responsibility for their dual task: as workers and students.
	2. Knowledge production and skills acquisition	Trainees share two training environments and acquire skills
	3. Personal and professional project	During their training they define their personal and professional project
	4. Professional placement	In the light of the facilities provided by the institutions that promote dual education, the trainee will quite likely be hired by the company at the end of training.

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