LEARNING BASED ON PROFESSIONAL TRAINING CHALLENGES IN THE BASQUE COUNTRY

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Abstract

After a brief contextualization of the Basque Country, this article describes the ETHAZI (High Performance Cycles in Basque) training model that is being developed by Tknika - Research and Innovation Centre Applied to Vocational Training - in order to respond to the new demands that arise in the workplace as a result of globalization and the exponential increase in technology.

Keywords: Vocational training. Educational innovation. Teaching training. Specific and transversal competences. Basque Country.

1. Introduction

The Basque Country is an Autonomous Community located in the North of Spain bordering the Southwest of the French state[1]. This Autonomous Community is directed by the Basque Government, which, in the context of the State of Autonomies, has its own competences (not all of them developed in their totality) as opposed to those of the State in different spheres, and, in particular, in both education and employment.

In relation to the subject matter of this article, some data and characteristics of the current Basque Country are as follows:

- Demographically, in a similar way to what happens in the most developed countries of Europe, it is a population that is progressively ageing, with a low birth rate that does not reach the replacement rate.

- The schooling rates are high (Figure 1) at the same time as the school dropout rate (Table 1) is not high.

- The educational level of the population has increased over the years, which translates into a better educated active population (Figure 2) with the passage of time, and in which people with low or no qualifications decrease significantly.

Figure 1 - Schooling rate by age
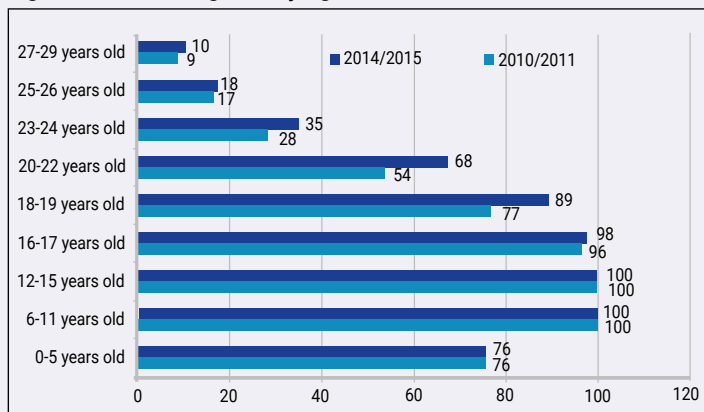
Source: Consejo Económico y Social Vasco (2018, p. 35).

Table 1 - Early school dropping rate

	2014		
	Amount	**Women**	**Men**
EU, 28	11,1	9,5	12,7
Sweden	6,7	6,0	7,3
A.C. of Euskadi	7,2	6,6	7,7
Denmark	7,7	6,0	9,3
France	8,5	7,4	9,5
Netherlands	8,6	6,8	10,3
Finland	9,5	7,2	11,9
Germany	9,5	8,9	10,0
United Kingdom	11,8	10,7	12,8
Spain	21,9	18,1	25,6

Source: Consejo Económico y Social Vasco (2018, p. 34).

Figure 2 - Active population by educational level
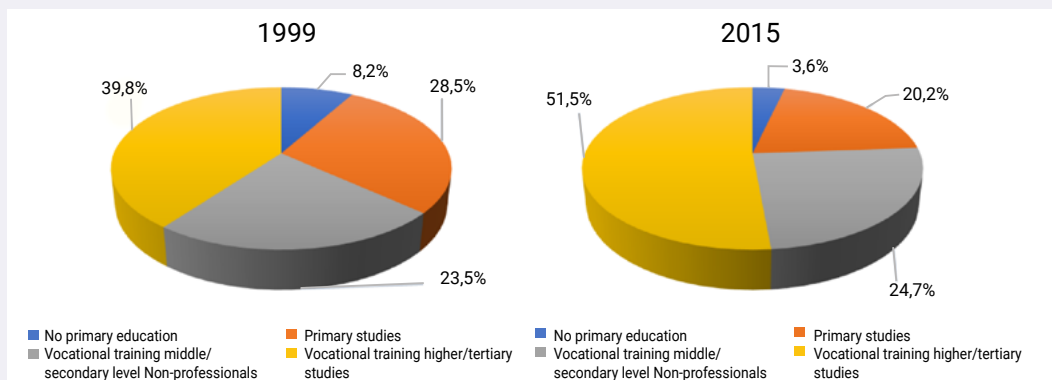
Source: Own depiction (ADEGI, 2016, p. 2).

- The unemployment rate (Table 2) has doubled in the last decade, and although in previous years it was above 16.5%, by 2016 it was above 12% and is expected to be around 10% by the end of this year. In general, young people have been the most affected by unemployment and, within them, initially women, although at the beginning of this decade the trends began to change.

Table 2 - Unemployment rates (total and young people by sex) in the CAPV

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total population	6,6	11,3	10,7	12,4	15,6	16,6	16,3	14,8	12,6
Young (16-34 years-old)	10,0	16,9	17,4	19,0	23,7	25,6	24,9	22,8	21,2
Men	9,5	17,7	17,1	18,6	24,9	26,6	25,7	23,9	20,6
Women	10,5	15,9	17,6	19,5	22,3	24,4	24,1	21,7	21,8

Fuente: Consejo Economico y Social Vasco (2018, p. 53).

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- From the point of view of labor activity, services are consolidating as the main source of employment (Figure 3), and although industry recedes in the 21st century, its weight continues to be greater in the CAPV than in the 28 countries of the European Union (EU28) as a whole, since the participation of industry in Gross Domestic Product (GDP) is 4.4 percentage points higher than in the EU28 (CONSEJO ECONOMICO Y SOCIAL VASCO, 2018, p. 83-84).

Figure 3 - Evolution of the working population by activity sectors (CAPV)
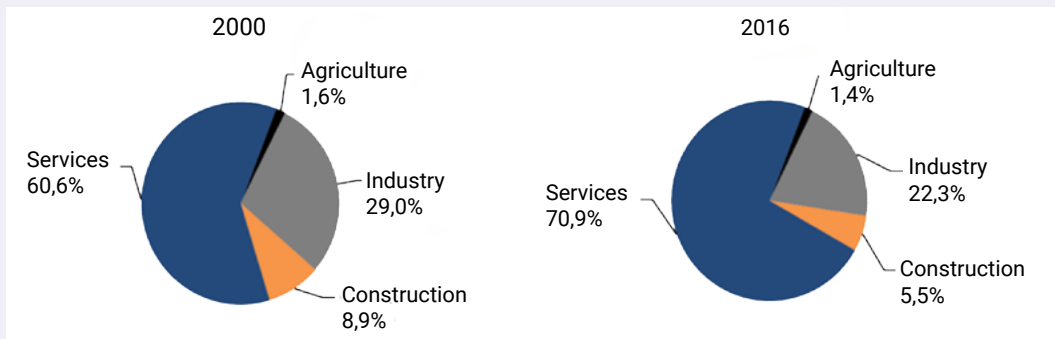
Source: Consejo Económico y Social Vasco (2018, p. 83) 34).

- Support for companies - particularly small and medium-sized enterprises (SMEs) - for the improvement of the productive fabric and competitiveness is based on support for Research, Development & Innovation (R&D&I), which allows the Basque Country to position itself in a good position in the European innovative sphere (Figure 4).

Figure 4 - European Innovation Index by Regions
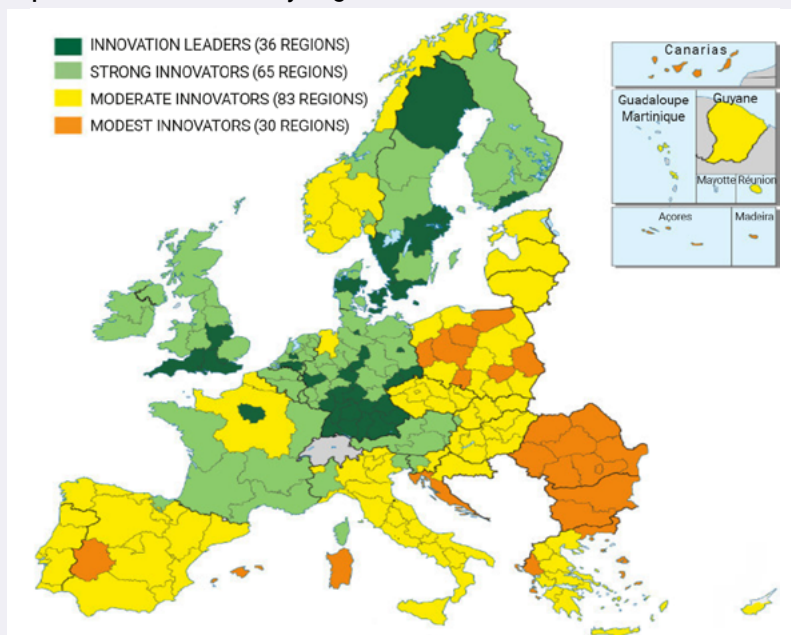
Source: European Commission (2016).

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The current labor context, although defined and/or characterized by the so-called Fourth Industrial Revolution, is part of a broader and more complex dynamic that presents a new society based on information, big data, robotics and artificial intelligence, which leads us to glimpse that

> The 21st century is not a continuation of the 20th century, but a new and conceptually very different one. In this era, everything is connected with everything. This requires new strategies and ways of thinking to face the great problems and challenges of humanity (MENÉNDEZ VELÁZQUEZ, 2017, p. 268).

2. Tknika: Research and Innovation Centre Applied to Vocational Training in the Basque Country

Tknika is the Centre for Applied Research and Innovation in Vocational Training (VET) in the Basque Country, and was created by **Decree 39/2005**. Since then, and promoted by the Vice-Ministry of Vocational Training of the Department of Education of the Basque Government, its main vectors of action have been research and innovation applied to the world of VET.

The institution therefore becomes a dynamising element which, through vigilance and competitive intelligence, makes it possible to transfer innovative products and services of high added value to the vocational training centers of CAPV and, from there, to the business sector. To this end, it is currently organized into six major areas: Innovation applied in the field of VET; Continuous Improvement; Research on Learning Methods and Processes; Entrepreneurship and Change Management; Internationalization in the field of VET; Sustainability (last area incorporated).

Tknika develops its work in a network, with the involvement of the VET Centers and teachers of the Basque Country, taking the Autonomous Community itself as an initial scope of work, and opening up and collaborating with centers, organizations and institutions from all over the world, which has earned the title of **UNEVOC Centre** in the academic year 2016-17.

In this context, in the 2009-2010[3] academic year , and within the Area of **Research on Learning Methods and Processes**, work is beginning to take a new look at what is happening in the Vocational Training classrooms, taking into consideration what was happening at a social level, but mainly at a business level. In this sense, some keys that underlie this reflection are the following:

1. Companies are changing their ways of doing things, they are entering a new productive-labor paradigm, and they are going to require people with new skills and abilities, so it is necessary to make changes in the training proposals offered by the Centers.

2. The teacher can no longer work alone, it is increasingly necessary for teachers to work in teams. Educational change and improvement in the quality of education

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will only occur if the group of teachers in a Cycle[4] - and for many aspects, those of the Centre as a whole - work as a team.

3. Vocational Training has to develop the specific technical skills of the corresponding work environment, but, together with them, "soft" skills such as responsibility, teamwork and problem solving are increasingly demanded.

4. The integrated development of the competencies demanded requires overcoming the division between theory and practice, tackling real situations and problems from inter and transdisciplinary approaches.

5. It is necessary to move from models focused on teaching to models that emphasize learning; therefore, it is also necessary to change both the role of the student - more active and responsible for his own learning and that of the teacher - more oriented towards dynamizing and favoring learning rather than transmitting content.

6. In this context, students' learning, in addition to being active - in which they play a leading role - must also be collaborative/cooperative learning aimed at solving problems and situations similar to those found in the work environment for which they are preparing.

7. Today's world, and particularly the world in which life is going to develop, is going to be a digital world; therefore, it must be competent to function as a digital citizen applying ethical principles and values in relation to all of this.

8. In this context of progressive automation, aspects such as creativity and entrepreneurship will be those that make it possible to maintain the competitiveness of people and companies, thereby improving the quality of life of society.

9. All of the above requires new forms of organization of the Centers, of the hourly distributions, of the assignment of tasks, of the spaces.

10. At the same time that the different aspects mentioned are changing and/or refocusing, it is essential to rethink the evaluation as well, advancing towards a new approach of a more formative and evolutionary nature in which the student has a new protagonism.
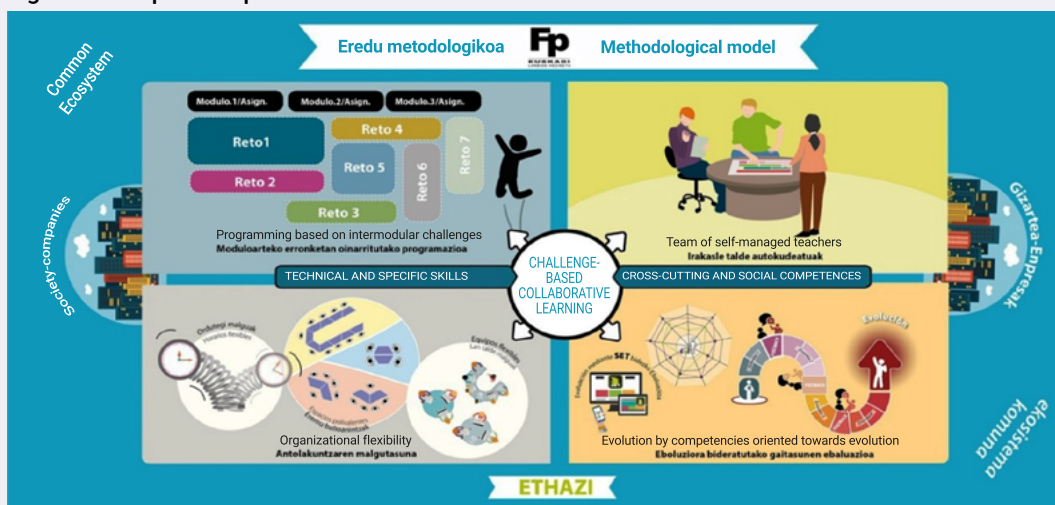
It is necessary to move from models focused on teaching to models that emphasize learning

2.1 Approach to the ETHAZI model (High Performance Cycles)

As stated in Astigarraga, Agirre and Carrera (2017), the analysis of the scope of educational practices and existing trends led Tknika to define the ETHAZI model for vocational training in the Basque Country. This model, still in evolution, development and growth, is represented graphically (Figure 5) based on the following elements:

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a) Context or ecosystem

Figura 5 - Graphical representation of the ETHAZI model

Source: Tknika

The educational activity and, in particular, vocational training is inserted in a social and working context that has its particularities (history, characteristics, evolution, relationships) and needs to which these training proposals must respond. The context or ecosystem - in which both companies and society as a whole are located - has been characterized in recent years by globalization, digitalization and hypertechnologization.

Briefly, some of the main characteristics that the world of work is presenting are:

- Changes in the skills required in jobs from: new jobs and professions, which will demand new skills; modification of the skills required in practically all occupations due to the influence of technology; disappearance of professions, which will render obsolete the skills associated with them.

- Polarization in jobs, which shows a decrease in low-medium complexity levels, which seems to indicate greater difficulties for automation in jobs at both ends, and in particular in those occupations that require medium-high and high skills (AUTHOR; DORN, 2013; CEDEFOP, 2018; ELLIOT, 2017; LOSKHAREVA et al., 2018).

- Greater demand for qualifications, which translates into a broader level of competence for people, integrating both technical or professional skills with the transversal or 21st century skills (ASTIGARRAGA; AGIRRE Y CARRERA, 2017; INTER-AMERICAN DEVELOPMENT BANK, 2016; EUROPEAN COMMISSION, 2015; LOSHKAREVA et al., 2018; WORLD ECONOMIC FORUM, 2015, 2016).

- Importance, not easily automatable, of social-emotional skills (ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT, 2015) and, to a lesser extent, of cognitive skills -mainly those of a high level- as opposed to those of a psychomotor nature, which will entail working with -and controlling of- robots and new intelligent machines in areas such as: cybereconomics, creative economy,

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people-oriented services, care for the environment, new emerging technologies... (LOSHKAREVA et al., 2018).

b) Challenge-Based Collaborative Learning (ACBR)

At present, there are multiple approaches and proposals for educational change based on different strategies and/or methodologies, the ones with the greatest potential being those "based especially on research and collaborative work (given that) these approaches explicitly prepare students for future learning" (ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT, 2013, p. 88). As an example, and without wishing to be exhaustive, it can be mentioned: Project Based Learning; Project Oriented Problem Based Learning; Inquiry Based Learning; Research Based Learning; Phenomenon Based Learning; Event Based Learning; Work Based Learning; Challenge Based Learning and others.

Within these methodological strategies, one can, in turn, find different methodological proposals (Project Method, Analysis Method, Simulations, Case Studies, Workshops, Design Thinking...)[5] that are not exclusive, being able to use many of them in a combined way.

From Tknika, being aware that under the denomination of Challenge Based Learning there are different proposals[6], a wide, flexible, even eclectic view is proposed, along the lines pointed out by Barron and Darling-Hammond (2010, p. 231), when they recognize their importance and validity because "they enable communication, cooperation, creativity and deep thinking". However, they also underline the difficulty of applying them, since:

> depend to a large extent on the knowledge and skills of the teachers who apply them... Teachers need time and a community that supports their ability to organize project work in a sustained way. Strong pedagogical skills are needed to manage long-term projects in classrooms, keeping in mind that the goal is 'do by understanding', not 'do by doing' (BARRON; DARLING-HAMMOND, 2010, p. 231).

In this sense, the ACBR - always open to further and particular concretions, has the following main characteristics:

▸ **Collaborative Learning**

As reflected in Astigarraga, Agirre y Carrera (2017, p. 74), Collaborative Learning entails (BARKLEY; CROSS; MAJOR, 2012; INSTITUTO TECNOLÓGICO Y DE ESTUDIOS SUPERIORES DE MONTERREY, 1999) are based on:

- Work in small teams (usually heterogeneous).
- Positive interdependence between the members of each team, and sometimes - depending on the proposal being developed between the different teams.
- Individual and group responsibility, and reflection throughout the development of the work proposal.
- Simultaneous interaction between team members, but also with teachers.

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- Putting into practice social skills in interactions at the team level, as well as in relations with teachers and people from abroad (companies, institutions, etc.).

▶ **Challenge-Based Learning**

The Challenge is a problem situation that, in general, has the following characteristics [7]:

- It is a situation - as real as possible - of the working context for which it is being trained.

- It therefore requires an analysis of the environment with what is presented as close to the people who have to face it.

- It is sought that it has more than one solution, in order to make possible spaces/situations of divergent and creative thought.

- It therefore involves analysis and reflection on the situation (context, background, parameters and conditions and identification of alternatives).

- In this sense, the proposal that is made can be diffuse, blurred, so that its concretion remains in the hands of the work teams.

- As it has been pointed out, it involves the collaboration and teamwork of the students.

- It is based on and requires the activation of previously worked and developed contents and knowledge.

- However, it is not a mere application of previous contents and knowledge, but it entails the work on new contents and the development of new knowledge.

- It is therefore based on action, directed by the search, analysis and processing of new information, oriented to the achievement of previously defined Learning Outcomes (technical and cross-cutting).

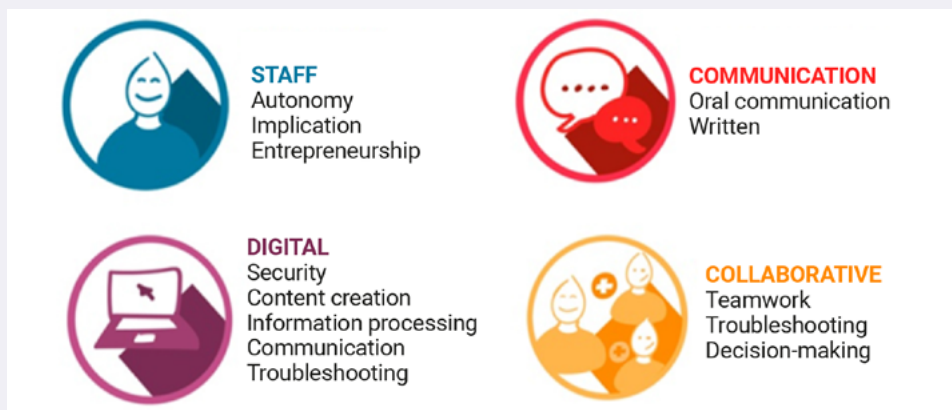**Figure 6 - Phases in the development of a challenge**
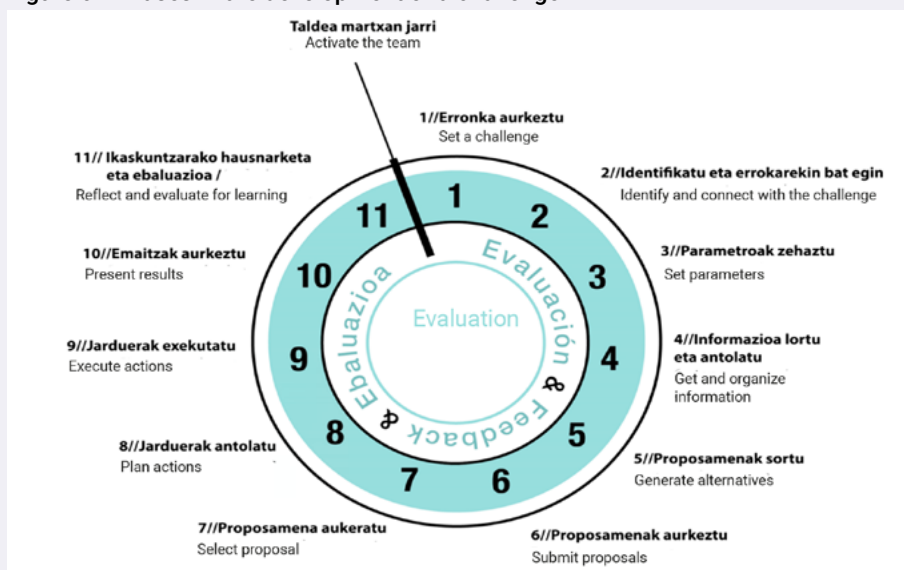
Source: Tknika

- As a result of these processes, it generates evidence and products (reports, prototypes, plans, infographics, videos, presentations, concept maps, and timelines) that make it possible to follow the evolution, as well as the evaluation of the development of the Learning Results (technical and cross-cutting) previously defined.

- Generally speaking, although each challenge may have its own particularities, Figure 6 shows the main steps or stages that the identification, appropriation, development and evaluation of a challenge entails.

▸ **Oriented to the development of technical and cross-cutting competences**

- Following the establishment of the European Qualifications Framework (EUROPEAN UNION, 2009), the definition of curricula based on Learning Outcomes was extended in European Vocational Training (CEDEFOP, 2009, 2010, 2016, 2017). In the Spanish context, the Learning Results (LR) related to Technical Competencies are clearly defined in the corresponding Royal Decrees issued by the Ministry of Education; perhaps less clearly, also in these Royal Decrees there is reference to the LR related to Transverse Competencies. All of this can be consulted on the website of the **Basque Institute of Knowledge - Ezagutzaren Euskal Institutua**.

It is possible to observe that, at the present time, LR related to cross-cutting competences are taking on a new prominence. This is mainly due to a double consideration; on the one hand, to the increased availability of content, easily accessible from virtually anywhere, at any time and at a very low cost; on the other hand, and related to the above, to the perception that this type of skills have a longer life span, and, at the same time, are less easy to automate.

In the context of the development of the ETHAZI model, Tknika proposes to the Centers four groups of cross-cutting competences (Figure 7) for their development in the different challenges.

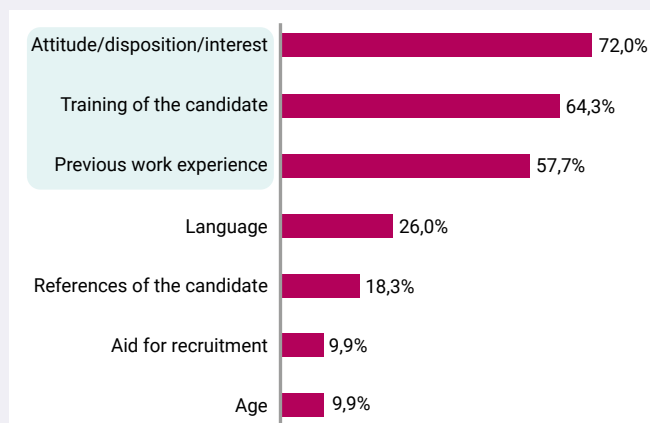**Figure 7 - Cross-cutting competences selected for development in VET in CAPV**

Source: Tknika

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In the productive sphere, the importance of these cross-cutting competences is also evident in the immediate context, in which, as can be seen, are often related to attitudes, involvement and ways of acting in relation to the work context. Proof of this are the results obtained by **Confebask** in a survey answered by nearly 1,000 companies in the Basque Country this year, in which the main aspect taken into consideration by Basque companies when hiring is found under the heading: *Attitude / Disposition / Interest, followed by Training of the candidate* (Figure 8).

Within this cross-cutting scope, there are several characteristics that are highlighted, being among them: responsibility, proactive attitude, adaptability, autonomy and others (Figure 9).

Figure 8 - Priority aspects for contracting in Basque companies

Source: Confebask (2018, p. 27).

Figure 9 - Most valued cross-cutting competences for contracting in Basque companies
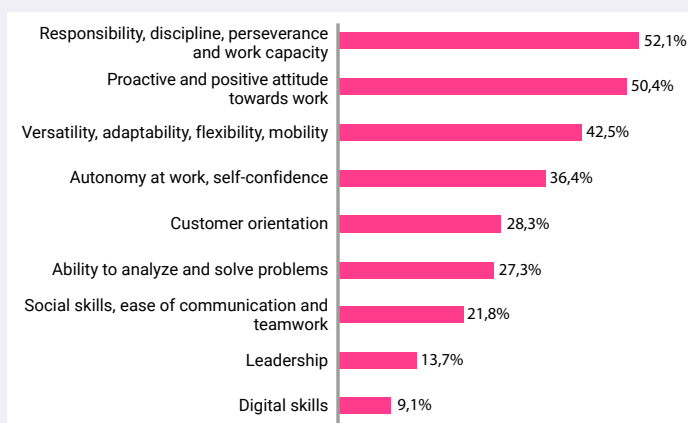
Source: Confebask (2018, p. 28).

In this way, the VET model that is being promoted in the Basque Country - based on Collaborative Learning, which is based on Challenges for the development of Technical and Cross-Cutting Competences - is structured around four axes:

1. Challenge-Based Programming

As it has been pointed out, the aim is for the programming as a whole to be designed and structured on the basis of the development of different Challenges. Given that the activities and situations that students will encounter in the workplace will be interdisciplinary in nature - as well as diverse in nature - the identification and design of intermodular (inter/transdisciplinary) challenges is promoted, which are developed and resolved through the combined use of different methodologies, which require individual and group work.

2. Programming developed by Cycle Teaching Teams (CTT)

The current educational perspective increasingly emphasizes the importance of teamwork among teachers, overcoming individualism and the exercise of the teaching function in isolation. Therefore, it is necessary - in this change of educational paradigm - to give autonomy and responsibility to teaching teams,

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so that they design in a shared and consensual way the different challenges, organize their spaces and times, distribute tasks and responsibilities within the teaching team, and thus become a reference for the teamwork that will be demanded of students. As it is evident, the CTT are the nuclear and essential element for the development of this model, from its leadership, empowerment and training.

3. Organizational flexibility

The above aspects, in turn, demand new forms of organization within the Centers[8]. The teamwork of the teachers and the work based on intermodular challenges require time for planning, for the continuous work of the students in different activities, so that the spaces must also be rethought and accommodated to the new forms of work. Together with this, the self-management of the CTT means that the team of teachers themselves can adapt - depending on the needs that arise - the timetables of the students, that they can organize work spaces in a flexible way, etc.

4. Competence-based assessment geared towards the evolution of people and the development of their learning

The changes that are being proposed will hardly be consolidated if special attention is not paid to evaluation, adapting its approach and practice to the new approach that is being developed in VET classrooms. A broad view, in line with current educational approaches, places evaluation as one more tool at the service of learning; we are therefore talking about evaluation as well as evolution for/in the development of the competences - technical and transversal - of people. In this sense, the follow-up of the student, the tutoring of the same and the contribution of the corresponding feedback - both individual and group - are key aspects for the progress and progressive improvement in the training of students. All this is favored by a specific computer platform - Skills Evolution Tool (SET), designed specifically for these purposes.

2.2 Development of the ETHAZI model in VET centers

The development of the ETHAZI model in the VET Centers of the Basque Country has been taking shape on the basis of a structure or organization which, in business management, is called an "oil stain". Initially, Tknika's team of coordinators began by forming a small group of teachers, most of whom - while already working with active methodologies in their classrooms - were later acquiring monitoring and training functions for teachers, both from the Centre itself and from other centers that were incorporating the model in their Training Cycles.

Since work began on this model with five vocational training centers, the attachment to it has been voluntary both for the teachers and for the centers themselves. In order to extend the knowledge and application of the ETHAZI model, training has

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been offered annually to all teachers of VET in the Basque Country, with a first level, basic, oriented to aspects of teamwork, communication and project-based learning; and another second level, the most extended, which focuses on the development of: Fundamentals of Collaborative Learning, Challenge-Based Collaborative Learning, and Competency Assessment. Although, as it has been pointed out, participation has been voluntary, enrolment in the training courses had to be approved by the Management of the Centre from which the teacher came; this is so with a dual purpose, on the one hand, for organizational and/or administrative purposes of the Centre itself, and, on the other hand, in order to progressively involve the Management of the Centers in the support and application of the ETHAZI model.

At the same time, training at a different level has been offered - normally to people who had completed the training proposal previously mentioned in a previous course - in order to generate what is known as Learning Coordinators. This is a figure, also supported and endorsed by the Management of the Centre (it is often an integral part of this Management), which aims to act as a leader of the methodological change in the Centre, for which this training will equip it with leadership and people management skills, competence in learning methods and techniques, and competences in the management of medium to long term projects.

These training courses, at both levels, in addition to the aforementioned aspects, also incorporate themes related to creativity; proposals for the dynamisation of learning - which culminate in the **UrratsBat** program for the creation of companies by vocational training students - and, more recently, with the development of Education in Values, based on the proposal Values 4.0 for VET in Euskadi.

Over the years, some of these Learning Coordinators have taken on functions of a higher level and responsibility, as they become - from their experience in the classroom and in the Centre - dynamisers and facilitators of the work of/in other Centers. In this way, small networks of 5-8 Centers have been consolidated that have a reference in these teachers, who, in turn, coordinate periodically and systematically with the Tknika team.

In addition to the above, (in)formative events are held with the Directors of the Centers, as well as with the persons in charge of the Education Inspectorate. The latter is essential in order to harmonize - and make compatible with existing regulations - the new forms of programming and work in the classroom derived from the application of this new educational proposal; at the same time, it is work that must continue in the coming years, at the same time as the existing Curricular Designs are reviewed and updated with the people who are responsible for them in the *Instituto Vasco del Conocimiento de la Formación Profesional* **(IVAC)**.

The training and involvement of teachers is the crucial aspect on which new modes of action can be developed in the classroom - with the support and encouragement of the Centre Management and the Education Inspectorate being essential, and complementary to the foregoing. For this reason, together with the different training courses, and understanding that the objective is to put them into practice in the

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classroom, from Tknika - with the support of people experienced in these tasks - there is a follow-up of each and every one of the Centers, and work days are organized with Learning Managers and Coordinators.

At the same time, and as an instrumental support of free access for all VET teachers, there is a **digital repository** that is being built and consolidated with the contributions of the entire educational community. This digital repository offers support to teaching teams in the following aspects:

- Context. This section provides a brief introduction to the model, its origins and its didactic-methodological framework.

- Digital competences. Without going into too much detail, it should be pointed out that a figure similar to that of the Learning Coordinator is being generated in VET Schools, which is that of the TIC Pedagogue, whose function is to dynamise - in accordance with the **European Framework of Digital Competences** (also dynamic and evolving) - the development of Digital Competences at these educational levels. Therefore, in this section teachers find - in addition to the definition and leveling of these Digital Competences - ideas, proposals and activities to work on them in the development of the different phases or moments of a challenge.

- Collaborative learning. In this section, teachers find, together with aspects of a more theoretical nature (who have already worked in some of the courses they have taken), ideas and tools to develop collaborative learning, create teams with different techniques, ideas of what can be an introduction challenge to this form of work.

- Challenges. As in the previous sections, in addition to a presentation of the topic in question - in this case, what is meant by Challenge and what are its main characteristics - there are formats in its two modalities: a) teachers, b) students - for its elaboration. The Bank of Challenges that can be found in the Institution will acquire increasing importance and will be consolidated with the contributions of the different VET Cycles and Centers in the Basque Country.

- Competences and evaluation. One of the main aspects of the ETHAZI model is that it is based on the development of technical and cross-cutting competences, which makes it necessary to identify them. The technical competences (and the learning results associated with them) are established by the basic curricular design of each cycle. On the other hand, the cross-cutting competences must be defined by each of the Centers; in order to facilitate this work - but with no intention of imposition - Tknika presents those which, over the years, have been consolidated as the most necessary in our environment. Thus, in this section you can find both the description and the leveling - based on rubrics - of these cross-cutting competences.

As mentioned above, another key aspect of educational change is the approach to assessment. In this section, you can consult the ETHAZI *Guide for the Evaluation,*

Feedback and Qualification in the Work by Challenges. This is a clarifying, helpful, and open document for the improvement and contributions of the educational community of VET in the Basque Country.

In order to facilitate the new assessment approach - centered on the evolution of students towards the achievement of competences - there is also a computer tool that offers multiple possibilities of work and consultation for both students and teachers. This tool, called **Skills Evolution Tool** (SET), is not in the public domain, although all VET Schools have access to it, and, currently, many of them already carry out the processes of evaluation, follow-up, feedback and qualification from it.

Likewise, in this section there is a dynamic infographics that allows, in a synthetic and pleasant way, to visualize multiple aspects for each one of the steps that, in a generic way, are developed along a Challenge (Figure 10).

**Figure 10 - Dynamic infographics to support the development of a challenge**
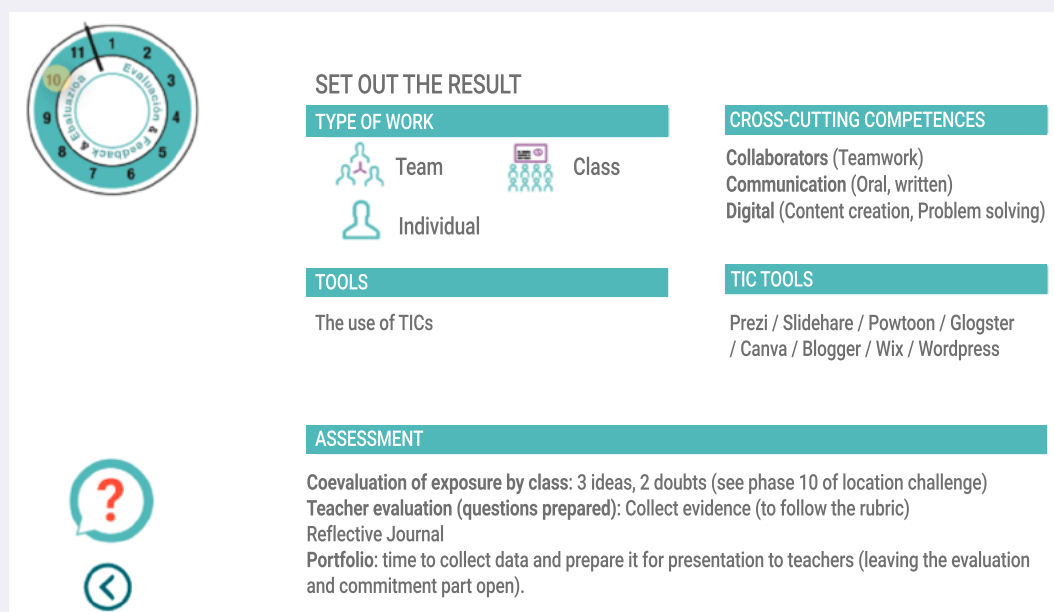
Source: Tknika

• eNOLA. In this repository, which we underline, it is in permanent construction with the contributions of the entire educational community of the Basque Country VET, also a self-diagnosis tool for the teaching teams of each Cycle (**eNOLA**). This tool seeks to encourage the reflection of each teaching team on the level of implementation of this model in their corresponding Training Cycles, which continues with the design of improvement plans.

At the same time, from a systemic point of view, the results of the diagnoses offer the possibility of deciding on the lines of action to be implemented in each course, since this tool offers information on five areas:

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- Challenge-Based Collaborative Learning.
- Programming based on intermodular challenges.
- Evolution-oriented competency-based assessment.
- Self-managed teaching teams.
- Organizational flexibility.

In quantitative terms, Figure 11 shows the evolution in the implementation of this model over the last five school years, which clearly reflects the conviction of the Basque Country's Vocational Training Centers for innovation and change in their classrooms.

Figure 11 - Evolution of the ETHAZI program. Participating centers and cycles (left axis) / Pupils and teachers involved (right axis)
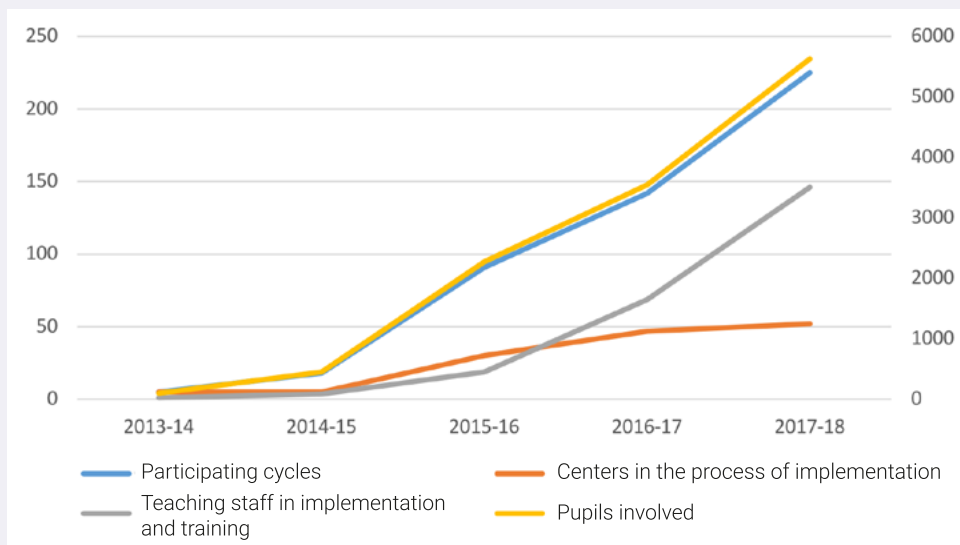
Source: Own depiction.

3. Final considerations

At present, the ETHAZI model proposed for VET in the Basque Country is presented as a useful tool that - through methodological change - seeks to respond to the changes that are taking place at the labor, technological and social levels.

In this context, it is necessary to continue with the generalization of the ETHAZI model to all the vocational training centers in the Basque Country; with the evaluation and monitoring of the impacts that the application of this model has at different levels in VET centers; the generation and/or adaptation of the challenges according to the particularities of each training cycle and of the groups of students who are going to work in them, always having the working environment as a horizon; the contrast with the companies for the validation and improvement of the model in order to respond

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to their different demands; and the socialization and valorization of the results and conclusions of the implementation of the ETHAZI model.

Although the tool for self-diagnosis is still new for the Centers, among the data obtained from the self-evaluations carried out it was possible to appreciate that the teaching teams of 35% of the cycles offered in the VET of the Basque Country have carried out their self-diagnosis evaluations. In these cycles, programming based on intermodular challenges is highly developed and, in coherence with the above, collaborative learning based on challenges is a reality in most of the centers that have carried out the self-diagnosis. In addition, most teaching teams have modified and broadened their perspective of assessment, and are focused on the area of evolution-oriented assessment.

Most teaching teams have modified and broadened their perspective of assessment

It follows that it is important to work on three lines of action:

a. To deepen the quality application of the ETHAZI model in all the VET Centers in the Basque Country, placing special emphasis on the profile of the teaching staff, as well as on the aids and training required for the satisfactory implementation of the model.

b. To analyze the influence of other aspects (spaces, resources, organization...) on the development of the ETHAZI model, applying the improvements that may result in a higher quality of the model.

c. To assess the impact and repercussion of this training model for the new needs presented by companies, adapting it according to the results obtained.

d. Reinforce research for the improvement of Vocational Training in the Basque Country based on existing practices and realities, promoting the development of both technical and cross-cutting competences.

Notes

[1] From a historical and cultural perspective, we will also find references to the Basque Country (Euskal Herria, in the Basque language or Euskera) with a wider geographical scope, which includes the Foral Community of Navarra (in the Spanish state), and the Basque provinces of Southwest France (Lapurdi, Behenafarroa, Zuberoa).

[2] Throughout the text, it will be used to refer to the different people or professions mentioned, the generic words professor, teacher or student, and it should be understood that it refers to both the masculine and feminine gender.

[3] Some antecedents that led both to the creation of Tknika and to the change that the Basque Country's vocational training has undergone in recent years are included in Intxausti et al. (1999). Likewise, the first works mentioned in this article, which constitute the beginnings of the current educational model, can be seen in Astigarraga, Agirre and Carrera (2017).

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4 The bulk of initial VET training is organized on the basis of two-year cycles. Those of the Middle Level give continuity to Compulsory Secondary Education; those of the Higher Grade, are taken after the High School. In graphic form, the Educational System as a whole can be seen **here**.

5 What is more, often under the same name reference is made sometimes to the methodological strategy, while on other occasions the specific methodology is referred to.

6 See as an example: Johnson et al. (2009), Apple (2010), Instituto Tecnológico y de Estudios Superiores de Monterrey (2015).

7 Evidently, here we point out those that a priori we could consider ideal; depending on the context, the educational level, the experience of the students in the development of this type of work, the moment of the course, the subject to be dealt with, the time available... these conditions are nuanced and contextualized by the teaching team.

8 An example of this can be found at: https://www.youtube.com/watch?v=u 9OKadUVLjs or more broadly: https://www.youtube.com/watch?v=CusOD9 WdiIg&t=310s

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