

The 'enabling' master's degree in architecture, an opportunity for experiential learning

El Máster 'habilitante' en arquitectura, una oportunidad para un aprendizaje experiencial

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Resumen

Schools of architecture have recently converted the former Final Degree Project into a one-year 'enabling' master's degree. This is a collateral effect of adapting Spanish university studies to the European legislative framework. Faced with this challenge, the Escola Tècnica Superior d'Arquitectura del Vallès (ETSAV) proposed the implementation of a teaching model that would allow students to learn based on the experience of interaction with 'the people' and construction experimentation. On a methodological level, the article reviews the theoretical basis related to this model based on the condition of an open process, physical experimentation and social return. It also makes a critical approach of the three first years of the master's degree to identify and review the teaching tools implemented, the subjects being researched and the contradictions that emerge. It concludes by evaluating the results obtained and identifying the need to balance learning between psychosocial competences and construction and technological competences, representing the main challenge and potential complexity of the service-learning projects conducted by the ETSAV's 'enabling' master's degree.

Palabras clave

PFC, master's degree in architecture, ETSAV, participation, competences

Abstract

Las escuelas de arquitectura han convertido recientemente el antiguo Proyecto Final de Carrera en un Máster 'habilitante' de un año de duración; un efecto colateral de la adecuación de los estudios universitarios españoles al marco legislativo europeo. Ante este reto, la Escuela Técnica Superior de Arquitectura del Vallès (ETSAV) planteó implementar un modelo docente que permitiera un aprendizaje desde la experiencia de la interacción con 'la gente' y la experimentación constructiva. A nivel metodológico, el artículo revisa la base teórica relacionada con este modelo basado en la condición de proceso abierto, de experimentación física y de retorno social. Además desarrolla un recorrido crítico por los tres primeros años de funcionamiento para identificar y revisar las herramientas docentes implementadas, los temas objeto de investigación y las propias contradicciones emergentes. Se concluye evaluando los resultados conseguidos e identificando la necesidad de equilibrar los aprendizajes entre competencias psicosociales y competencias constructivo-tecnológicas, principal reto y complejidad potencial de los proyectos de aprendizaje-servicio conducidos por el máster 'habilitante' de la ETSAV.

Keywords

PFC, máster en arquitectura, ETSAV, participación, competencias

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Introduction

The conversion of the curriculums of Spanish schools of architecture, following the guidelines of Ministerial Order EDU/2075/2010,¹ which lays down the requirements for the verification of official university qualifications that enable the profession of architect to be practised, as well as compliance with European Directive 2005/36/EC² and Royal Decree 1393/2007³ on the organisation of official university education, has led to the former Final Degree Project (Proyecto Fin de Carrera, or PFC, in Spanish) being converted into a one-year master's degree. The unitary nature of a master's degree, separate from the graduate degree, the maturity of the student body and the fact that it offers a whole year to carry out a project offers schools the opportunity to design a teaching activity that builds genuine bridges between the academic world and the professional sphere.

This opportunity has inspired the creation of the Master's in Architecture (MArq) from the Escola Tècnica Superior d'Arquitectura del Vallès (ETSAV) that sets out enabling as an opportunity to experience the meaning of 'responsibility'. The MArq, which began in September 2015, has already run 6 one-year courses that correspond to 6 collaborations with city halls that have offered their territory for the experiment. Always based on real case studies, the master's degree offers practical experience based on the service-learning condition, and participatory action research methodology. The responsibility is transferred to the student body, which verifies, corrects, modifies and adapts projects to the vicissitudes of residents, municipal technicians and social actors in order to come up with an 'executable product' that, in some cases, is built. Research and interaction, either from the social and community dimension or from constructive experimentation, make up the two main aims of the master's degree. The reasons that justify these aims lie in ensuring, through action, design mechanisms that can be a reference and influence for the future professional practice of graduate students, a profession that invites us to explore the many facets and functions that architects may exercise. The good results of the school based on experiential learning back up this programme, as does the commitment to the emerging challenges posed by the ETSAV's educational project.

Teaching supported by research and interaction

Teachers like Marina Garcés point out that the success of learning is demonstrated outside of the class since it is exactly on the 'outside' where we find "everything that remains to be thought, the wishes ignited by what we have started learning, the echo of restless words, unresolved problems and, above all, the relationship between all forms of learning with life, one's own and that of the collective".⁴ A sense of restlessness to continue learning 'outside of the class' is therefore the best indicator that evaluates the quality of the work done at the school. And restlessness goes hand-in-hand with challenges, since knowing how to transmit the doubts entailed by the challenges faced by the modern architectural profession was one of the ETSAV's main intentions when it came to designing this 'enabling' master's degree.

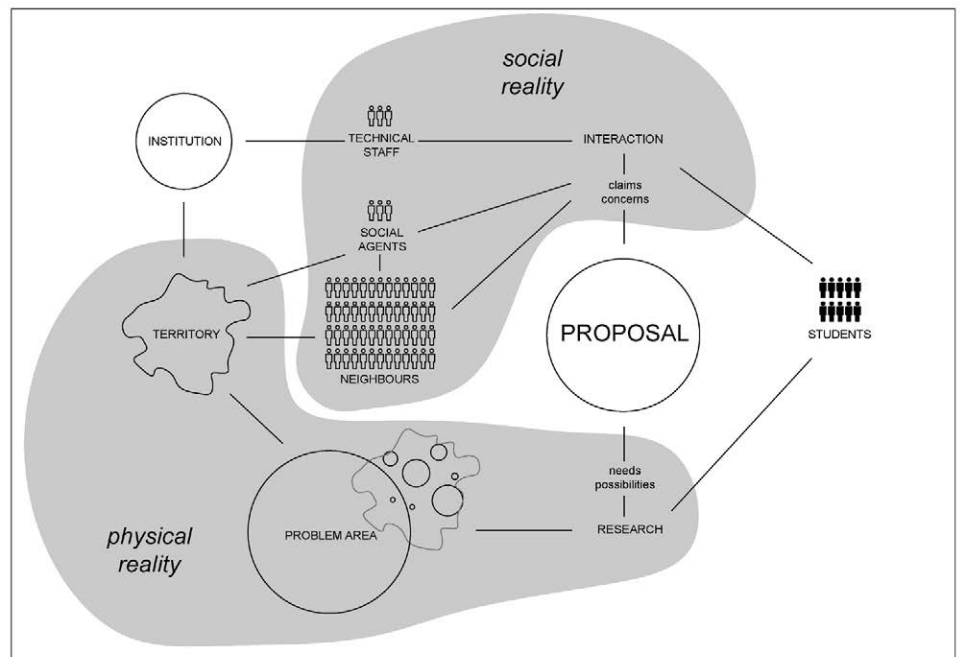
It seemed interesting to move students away from a purely professional, documentary and instrumental form of learning, to instead place them before the decision of 'how to do something', and train them to formulate the right questions when faced with a problem, or a challenge, which they themselves would identify and ask. Root learning needed one essential ingredient, reality, and to be built on two basic and complementary teaching activities: research and interaction with different subjects. So this is how the master's degree was proposed, not with

1 See Order EDU/2075/2010 (Government of Spain, 29 July 2010) which lays down the requirements for the verification of official university qualifications that enable the profession of architect to be practised.

2 See Directive 2005/36/EC (Council of the European Parliament, 2005) on the recognition of professional qualifications.

3 See RD 1393/2007 (Government of Spain, 29 October 2007) modified by RD 861/2010, of 2 July, which establishes the organisation of official university education.

4 See the original in Catalan language, Marina Garcés, *Fora de classe. Textos de filosofia de guerrilla* (Barcelona: Arcàdia, 2016), 17.



[Fig. 1] Image explaining the teaching methodology of the MArq-ETSAV. Source: the authors.

the sole aim of completing a PFC, but as the result of an approach that ranges from questions, concerns and challenges to a concrete physical and constructive response.

The first exercise in the master's degree is the creation of a programme that reflects the challenges faced by the future of the territory, villages or cities; this is an exercise that requires research. This extensive research, which is perhaps initially scattered, is territorial in nature but is also social and financial. Learning to observe is perhaps one of the greatest difficulties in a teaching scenario dominated by the walls of a classroom. Jane Jacobs stated that "The way to get at what goes on in the seemingly mysterious and perverse behaviour of cities is, I think, to look closely, and with as little previous expectation as is possible, at the most ordinary scenes and events, and attempt to see what they mean and whether any threads of principle emerge among them".⁵ On the challenge of relearning how to see our everyday surroundings, Garcés also adds the need to abandon the position of spectator and recover the power of the situation, the experience of what has been lived. This form of situated knowledge is what allows prejudices and transferrals to be detached from the place. This is how the research begins on the MArq, fostering a liberated, open and critical view in order to identify inconsistencies, imbalances and problems within the territory that can be resolved with an architectural project.

The analysis of solid sources and the mapping of the physical dimension support this first phase, but, nevertheless, the process fits into the moment when interaction with actors from the space who practise the place. Urban studies and the history of humanist architecture demonstrate confidence in the power of architecture to change the reality posed by certain architects like Yona Friedman, who stated that "architecture has to be conceived with the people, and be brought into existence, as far as possible, by the people. This does not mean that the architect has no role in the process: they can provide ideas, techniques, new aesthetics, which will have to be validated with the people, by the people, for the people alone. Incidentally, architects are also people... they belong to the people".⁶ Therefore, the ETSAV identified with the idea of 'democratic' or community-based architecture that was also proposed by other authors, such as De Carlo in "An Architecture of Participation" or the Briton John F.C. Turner based on the practice of observation in the self-built shanty towns of Lima, an experience that he highlights in "Once

5 Jane Jacobs, *Muerte y vida de las grandes ciudades* (Madrid: Ediciones Península, 1967), 17.

6 Yona Friedman, *Architecture with the People, by the People, for the People* (León: Musac-Actar, 2011), 14.

confronted through professional contact with local realities and the people who live them, the creative specialist or open-minded professional is bound to change his or her attitude".⁷

The social matrix will therefore be the basis for interaction with agents who come into play, whether they are developer-politicians, resident users, municipal technicians, financial agents or professionals from other fields. After assembling this ecosystem of stakeholders, the master's degree will activate research towards the definition of a programme and the development of a PFC, and not only as a preliminary diagnosis but from the beginning to the end, passing through different moments and levels of participation. Overcoming the distance between the researcher subject and the researched object is the main challenge of participatory action research, a method to which the master's degree subscribes in order to introduce students to a practice of deliberation and negotiation with antagonistic subjects; this is an exercise that will be habitual in their professional future.

An 'open process'

If the profession of architect has any challenges on the table today, it is knowing how to drive the results of processes of participation towards an improved (and not worse) architectural response. To do this, students have to be made aware that planning is not a physical task carried out exclusively and autonomously by the architect, but rather a process of accumulating information, interests and availabilities to which the architect has been able to give shape.

Although participation in architecture is a very recent and unusual phenomenon, an interest in using participation as a tool for improvement appeared back in 1959, at the CIAM in Otterlo, at which time TEAM X questioned the postulates of modern architecture to go beyond the relationship between privacy and community or between authorship and shared design.

In 1961, in the manifesto '*Open Form*', the Polish architect Oscar Hansen presented the challenges of a design that would incorporate the individual and momentary particularities of those who use the architecture: "The term 'quality' in the language of the Open Form should be understood as the recognition of the individual in a collective. The Open Form is to aid the individual in finding himself in the collective, in make him indispensable in the creation of his own surroundings".⁸ Oscar Hansen's didactics, halfway between physical invention and performance, is a point of reference that invites the student to enter an atmosphere of permanent experimentation and convert contempt towards the interests of users into a source of ideas and inspiration.

In practice, the methodology of the master's degree does not interpret Hansen's theory as a condition for the proposed architectures, although many open proposals have arisen taking into account the security of a PFC, which by tradition is located on the frontier between reality and fiction. More than 'open design', the interest of the master's degree lies in the 'open process', which is committed to exploring and putting into practice the function of the architect as a mediator in the management of resources of local communities involved in design processes, as well as their role as organiser and 'facilitator' of the process of executing those experiences that will come to be built, following the line of certain Anglo-Saxon authors such as Jeremy Till when analysing the relationships between teaching and research from the perspective of the concept of control and power relationships in architecture.⁹

7 John F.C. Turner, "The reeducation of a professional", in *Freedom to Build, dweller control of the housing process* (New York: Collier Macmillan, 1972), 139.

8 Oskar Hansen, "The Open Form in Architecture - the Art of Great Number", in *CIAM'59 in Otterlo*, (Stuttgart: Karl Krämer Verlag, 1961), 190.

9 Jeremy Till. "What is architectural research? Architectural research: three myths and one model" (speech at the RIBA in London, 2005).

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Giancarlo de Carlo also emphasised the idea of an open process and defined a work method that challenges the methodologies of the master. He suggested elevating and integrating the power of the user to the three phases of the project: defining the problem, developing solutions and evaluating the results. With critical purpose, he denounced the fact that these phases are not traditionally related to one another and that only the second becomes important for the architect as the needs and wishes of users take a back seat before the interests of the developer or architect. In addition, he adds, the third phase does not exist. But according to Giancarlo de Carlo's new architecture of participation, these phases become an open design process where the definition of the problem, aims and resources needed are open to discussion. The intention is for this intersectional and cyclical character to be transferred to the master's degree, either from physical experimentation or from community work.

An opportunity for physical experimentation

Another aspect of the ETSAV's MArq is learning based on physical or constructive experimentation, which is another exercise that brings students closer to their immediate future as a professional. Physical experimentation is something that has been moving away from university classrooms and, as a result of this, it is difficult to establish it as a habitual learning practice for the architect. The ease of theoretical teaching, the difficulty in finding a suitable space that is large enough and getting materials means that architecture teachers fall back on the comfort of a chair and a laptop screen.

In his essay *The Thinking Hand*, Juhani Pallasmaa expresses the opinion that "We need an educational change with regard to the sensory sphere, for us to discover ourselves again as physical and mental beings in order to fully use our capabilities and become less vulnerable to manipulation and exploitation".¹⁰ The author proposes that it is necessary to rediscover the skills of the hand and even corporal existence. Pallasmaa's proposal becomes a catalyst to implement experimentation in the everyday didactic practice of the MArq. However, in the three years since the master's degree began, serious difficulties with follow-up by the students are identified, basically due to their distance from the study territory. On very few occasions, the practice of building has arisen spontaneously from the students as an inescapable necessity of their research process¹¹ (this is the case of the figure 2). Thus it has had to be instigated from the faculty to the point that in the 2017/2018 course, the project consisted of a real commission, included within the budget of the city hall developer, with plans that set a deadline of one year to complete the building. As we will see later, it is not the mission of a master's degree to build real projects, but, nevertheless, the urgency of reality was reflected in the students with a change in attitude towards the project, greater responsibility, rigor and empathy.

Learning processes that include constructive experimentation on a 1:1 scale and the acquisition of competences based on real projects are and have been a point of reference for the ETSAV. We can draw parallels with other foreign schools, such as the Rural Studio of Auburn University in Alabama. Representatives of this course have been invited to the ETSAV on several occasions. The planning course at Pascal Rollet in Grenoble, France, is also in the school's line of sight. Among others we find the case of the Floating University at the University of Nuremberg or, closer to home, the interdisciplinary group of the International Cooperation Service of the University of Seville and Pablo de Olavide University which has been working on the rehabilitation of houses in Morocco since 2006. The ETSAV has a long history in learning processes that culminate in a built project, either promoted by

10 Juhani Pallasmaa, *La mano que piensa. Sabiduría existencial y corporal en la arquitectura* (Barcelona: Gustavo Gili, 2012), 19.

11 For more information consult the work of Ocamica, Iñigo; Tudanca, Iñigo. "Intervención en el entorno edificado de Mas Vilanova dentro de los límites sostenibles del territorio". (Final Master's Degree Project, ETSAV-UPC, 2017) in the section "Màster Universitari en Arquitectura" of the website Escola Tècnica Superior d'Arquitectura del Vallès <https://marq.etsav.masters.upc.edu/ca> (consulted 15 September 2018). The video of the construction process in situ can also be seen at <<https://vimeo.com/243347829>> (consulted 15 September 2018).



[Fig. 2] Self-building process in Mas Vilanova, Sant Bartomeu del Grau, 2017. Authors: Iñigo Ocamica and Iñigo Tudanca.

[Fig. 3] Process of construction management in Sallent, 2018. Author of picture: Maria Melo.



12 Solar Decathlon is an international contest for the construction of a sustainable home in which the ETSAV has taken part on three occasions. Its is currently preparing to participate for the fourth time. These projects are basically led by students, and enjoy the collaboration of some of the school's teaching staff. The posterior use of the contest is of interest, having led to some of the prototypes generated by the ETSAV, and being put into place in neighbourhoods with social issues as a kind of meeting space.

13 The PUD graduate project workshop is coordinated by faculty members Coque Claret and Dani Calatayud, the main teaching staff who promoted the processes of auto-construction. The subject can be seen in (ETSAV, 2018).



students as in the Solar Decathlon competitions,¹² or by teachers from the PUD planning workshop.¹³ However, these initiatives have been rather disparate or on an individual basis. The main difficulty lies in setting up an infrastructure of spaces and companies that provide material, or simply sponsors, to ensure the construction exercise to train architects constantly and continuously.

Stewardship and social return

Working in a real social and territorial scenario and physically carrying out constructive experimentation that is also real means that a 'service-learning' methodology can



[Fig. 4] Collective participation. Sabadell participatory process run by ETSAV, 2018.

[Fig. 5] Individual participation in Sallent. Students' project codesigning a square with local skaters, 2018. Authors: Mar Esteve, Miguel A. Hernández and Yeray Sarmiento.

be implemented that seeks to apply generated learning to a real demand. This is an extra-academic utility that gives meaning to the public university.

The municipalities that the MARq has collaborated with not only achieve a kind of diverse architectural solution in the PFC format, but also a reflection on the problems in their territory, generating awareness of them amongst residents and a certain acceptance of the proposals.

For Steen Eiler Rasmussen, being able to count on 'the people' is also a way of making architecture easier to understand. In *Experiencing Architecture*, he argued that "architecture is produced by ordinary people, for ordinary people; therefore it should be easily comprehensible to all".¹⁴ This is, therefore, also one of the MARq's goals, to 'democratise' our understanding of architecture, take it down into the terrain of recognition and the acceptance of the people. Methodologically-speaking, 'participatory action research' allows the evolution of the design process to be planned in a way that takes into account the goals of community work, such as the empowerment of the person doing research and the one being researched, the links created and the transformation of the perception of them both through shared action. All of this is to satisfy a final purpose, which is the improvement of living conditions in shared habitats.

14 Steen Eiler Rasmussen, *La experiencia de la arquitectura* (Madrid: Mairera-Celeste, 2000), 20.

At a practical and methodological level, this community dimension seeks to manage inclusion and diversity in the decision-making process of future architects. Therefore the decision of the people who inhabit the place is present in each phase, and from the perspective of the master's degree this is applied at two different speeds: on one hand a slow speed, a participatory process that is open to the whole matrix of agents involved and that is sustained from start to finish where the students work together towards a common goal. And on the other hand, a fast speed, individual processes where only students who are especially interested in participation and in building activate intense collaborations with particular actors and with timings limited to the project's requirements. One example of this comparative difference can be seen in the following images. Figure 4 shows a slow and transversal participation comprising three participatory sessions in 2018 with the Nostrallar Neighbourhood Association in Sabadell, Sabadell City Hall and the participation of all students of the MARq.¹⁵ Figure 5 is an example of rapid and individual participation, where a project coordinated by three students activates sessions of co-design in order to build and meet the needs of particular users.

A critical approach of the first MARq courses

The teaching structure of the MARq takes form around a project carried out by the students from the first ideas for a programme to writing up a PFC. This process begins, in a fairly collectivised work, in compulsory workshops during the first term. A territory, usually a municipality within Barcelona, is studied by all students to find out its needs, shortcomings and problems that can be solved by an architectural project. The first goal is to develop the programme that will govern the students' projects. A group structure allows the reality of the municipality to be divided into subjects like habitat, territory and urban planning, and heritage. Electives in this first term can match these specialisms and maintain a direct link with the subject of the workshop. Once the programme is defined, the projects are carried out individually or in groups of two or three students. The second term focuses on the definition, verification and constructive experimentation of the project to complete a PFC as defined by the regulations.¹⁶

The following municipalities have been used for the master's degree: Sallent (autumn 2015/2016 and autumn 2017-2018), Sant Cugat del Vallès (spring 2015/2016), Sant Bartomeu del Grau (autumn 2016/2017), Barberà del Vallès (spring 2016/2017) and the neighbourhood of Nostra Llar de Sabadell (spring 2017/2018). The case studies include small municipalities like Sant Bartomeu del Grau, with 900 inhabitants, and large municipalities in the metropolitan area, like Sant Cugat and Sabadell with 90,000 and 200,000 inhabitants respectively.

When the master's degree has studied larger municipalities, the focus has been on one neighbourhood or area to limit the areas to be researched. In fact, if anything has become evident over the past six courses it is that the ideal framework to implement a teaching methodology based on participatory action research and service-learning is a small municipality or neighbourhood with a strong identity and community. In participation sessions, attendance is normally between 30 and 60 people, regardless of the size of the municipality. This participation in a limited territory (small village or neighbourhood) offers a much more representative sample than in a big city. Communication and interaction with the population has turned out to be more fluid in villages than in big cities. In rural areas, more need for reflection at a territorial level has also been detected, something that is already practised in the city by teams of architects from public institutions.

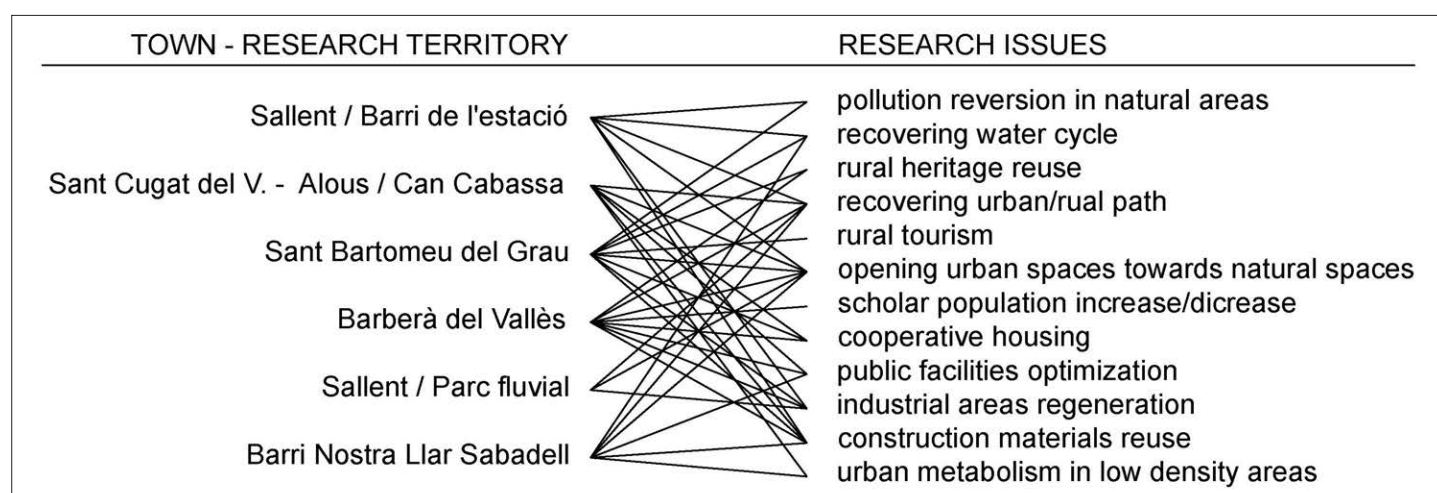
15 The summaries and reports of the participatory sessions are made public and can be consulted online at: "Blog of the Master's Degree in Architecture", <https://marq.etsav.masters.upc.edu/ca/blog> (consulted on 4 March 2019).

16 Order EDU/2075/2010, from 29 July, which lays down the requirements for the verification of official university qualifications that enable the profession of architect to be practised, states that the PFC must be an original exercise carried out individually, which will consist of a professional comprehensive architectural project which synthesises all the competences acquired during the degree course, developed to demonstrate sufficiency to determine the completion of the building works it applies to, in compliance with the technical regulations and applicable administration.

Table 1. Teaching tools, strengths and weaknesses. MArc, period 2015-2018. Source: the authors.

Teaching tool	Brief description	Strengths	Weaknesses
Real case study.	Municipality that by means of an agreement with a financial contribution offers its territory to the MArc for research and experimentation.	Rooted to reality, possibility of reaching 'the people', carried out in an environment similar to the professional one.	Difficulty of complete 'rooting' due to remoteness, the negative influence of political forces in some cases, the inheritance of past conflicts that hinder participation.
Research.	Continuous and parallel thread to the project that allows the progress of the project to be validated with 'objective' information.	Provides an objective and firm substrate for the decisions made by the student when carrying out the project.	Difficulty in orienting all the research to the project and avoiding generalist analyses that entail a considerable loss of time.
Interaction with people.	Participatory workshops held both in the first semester of the master's degree and in the second. At the beginning, the purpose is to find needs and concerns. At the end, it is to validate the proposals by convincing the population.	Links projects to reality, validates and shapes their development and guarantees acceptance in the municipality. It also allows mediation and negotiation skills to be acquired, introduces an idea of opening up the architectural process and adds complexity.	Difficulty in interpreting the needs of the population, municipal technicians, or politicians, attracting them to the project, knowing how to find the right balance of these demands in the heart of the entire project process.
Constructive experimentation.	1:1 scale productions to validate the materiality, usefulness and function of a project.	Improvement in the student's empathy towards the project, feeling of responsibility, practical demonstration of intuitions on the project, learning to plan under financial limitations.	Difficulty of implementation due to distance, lack of infrastructure, economic resources. Reduced intellectual interest in the projects due to the urgency of the rhythms of a building project when a PFC has been built 100%.

[Fig. 6] Graphic that relates the subjects researched to the municipalities studied. Source: the authors.



Teaching tools

The teaching methodology of the MARq combines different tools, some of which are traditional when training to be an architect, and others that are more innovative. We divide the tools into two types. Those that are specific to the master's degree —the real case study, research, interaction with people and constructive experimentation— and those of teaching practice —workshops, theory, physical and social cartography, tutorials and public correction. The following table shows the strengths and weaknesses found in the specific tools of the MARq.

Topics researched

One of the main difficulties detected when planning consists of the thematic contribution or transfer of global values that occasionally move away from the needs and specificities of the local territory. Even so, we identify common themes that intersect with the different locations: the opening up and connection of free spaces with the natural landscape, the reprogramming of disused industrial buildings, recycling of materials, territorial connectivity and cooperative housing are the most common. Low density, the recovery of the water cycle and energy efficiency, rural heritage and tourism, or the optimisation of facilities do happen but less frequently.

The contradictions of the MARq

As a critical exercise with regard to the complexity of a collaborative work like this type of PFC, we can highlight a series of contradictions or challenges on which to continue working until the right measure is found to reach a situation of optimum balance and comfort.

From the outset, the first contradiction lies in the need to work in a group from start to finish with regard to the regulatory requirement for the PFC to have a personal and unique result.¹⁷ Dynamics that flow in a group are affected and sometimes slow down in the second part of the academic year by seeking to adapt in order to give a result that can be individually assessed, even though the transversal competences of the master's degree include teamwork and cooperation. The individuality of a project is somewhat questionable in light of a professional reality that is increasingly less generalist, with more projects carried out by multidisciplinary teams.

The second contradiction is manifested in the loss of focus or in the symptom of the researched researcher. Whether it is the result of participation sessions (disagreements, power roles) or, if the PFC culminates in building the plans, of the construction phase (decisions that are not shared, the day-to-day business of the work, technical data and the budget, among others), the critical distance required at the beginning of the course is distorted. Everyday situations that are on a small scale but consume a great deal of energy are sometimes perceived as agents that threaten the quality of the final result.

Third, the impact of the vacuum on the theory or practice of participatory architecture. In spite of the students' interest, in the master's degree it is evident that the degree curriculum does not include these competences. The lack of tools, key concepts and referents is a constant that has to be dealt with in parallel to the planning exercise. This lack of experience is also suffered by part of the teaching team and sometimes involves divergent opinions on the issue of participation, which in turn contributes to a critical view that has a positive influence on the process.

Fourth, academic timings are often out of synch with the administrative times of developers and even more so with the biorhythms of the communities involved. This means a great deal of effort must be made during communication between the different actors and the school.

And fifth, the total dedication of students decreases due to their need or opportunity to do work placements, which places greater pressure on the workload deriving from the master's degree. The high level of complexity of a real project like this therefore represents certain incompatibilities outside of teaching hours, especially for those groups that end up building their plans.

Conclusions: consolidations and incorporations

For many students, the master's degree has become their first real experience of service-learning. This progressively allows change and reflection to be made on the social responsibility of the architect in the city of sweat equity. The MArq is therefore an opportunity and a pretext to recover the inheritance of counter-discourses that are typical of the history of architecture and urbanism featuring humanist authors who today can inspire future architects interested in community practices and participation. The connection with this heritage and tradition plus the interdisciplinary approach become allies when it comes to continuing to refine and polish what will struggle to become predictable or controllable as an experience and social entity. In the words of Richard Sennett,¹⁸ the master's degree as a teaching project finds its nature not in an ecosystem limited by its balance, but in a social device that works in a network, an open system and a place to learn to manage the vicissitudes of the uncertain.

The experience acquired during the three years the degree has been running, with its six case studies, allows us to evaluate the consequences of this methodology.¹⁹ The panels that assess each course agree in stating that, compared to the projects that result from the old final degree project, those of the master's degree show evidence of the development of a less productive entity but immense control and research by the students. The nature of each assignment has also conditioned the final result, especially in those contexts where the commitment to build has leveraged and reduced the ability to control the scale of the territory. In spite of the small circumstantial scale, placing students before an interlocutor external to the university and the profession who questions their decisions obliges them to consolidate the progress of the project with solid and transversal arguments, and the positive aspects of this interaction are not in doubt. On the other hand, the trajectory of the master's degree has been much more erratic, with methods to encourage constructive experimentation. On some courses this experience has been non-existent, and on others all teaching has been devoted to construction. Neither one thing or the other. Therefore, we still have to find the right balance between the intellectual development of a project, work in a workshop, interaction with 'the people' and constructive experimentation on a real scale.

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17 See previous note.

18 Richard Sennett, *L'espai públic. Un sistema obert, un procés inacabat* (Barcelona: Arcàdia, 2014).

19 The completed PFCs are posted on UPC Commons and can be seen on the MArq website (ETSAV, 2018).

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