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Published by
IATED Academy
iated.org

ICERI2018 Proceedings
11th International Conference of Education, Research and Innovation
November 12th-14th, 2018 — Seville, Spain

Edited by
L. Gómez Chova, A. López Martínez, I. Candel Torres
IATED Academy

ISBN: 978-84-09-05948-5
ISSN: 2340-1095
Depósito Legal: V-2884-2018

Book cover designed by
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LEARNING CHALLENGES IN THE TEACHING OF URBANISM IN SPAIN, RESULTS AFTER THE BOLOGNA PROCESS

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Abstract

This paper aims to address the challenges faced by the training in urban and territorial planning in the Spanish Schools of Architecture after the adjustment of the Bachelor of Architecture to the European Higher Education Area (Bologna Process).

Architecture is a regulated profession; graduates have access to an enabling degree where professional competence acquires an internationalised global dimension today. But Architecture, compared to newly created degrees, drags centuries-old training baggage, which has been trying to adapt to the changes with the times. Thus, while Engineering -the other main degree of the branch of knowledge Engineering and Architecture- has chosen to specialise, unfold and multiply in a great diversity of university degrees, Spanish professional architectural associations decided to maintain a unique title. Urban planning is one of the specific competences of the architecture degree in Spain, but not in other European countries such as France.

The research will start by analysing what has been the training trajectory in urban and territorial planning in Spain, since the creation of the first Chair of Urbanism at the School of Architecture of Madrid in 1918, until nowadays. In parallel, we will revise the new professional competences involved in the matter. The curriculum of 1932 introduces the subject Urbanology, replacing the matter Layout, Urbanisation and Sanitation of Cities of the Plan of 1914. It was the only subject related to the topic until 1957. This new plan proposed basic training of two urbanistic courses, together with an optional choice for a speciality itinerary in the fifth academic year: Urbanism Section. These successive revisions of the curriculum in 1964 and 1975 maintained and developed this speciality.

From the restructuring of 90s (RD 4/1994) the teaching offer of the already numerous Schools of Architecture was diversified, through the offer of optional subjects. In addition to the two core subjects of city planning, and therefore shared in all the degrees, many centres continued to offer specific routes or itineraries concerning city and territory.

The conclusions of this retrospective analysis will be confronted with the competences currently required in urban planning, through the revision of the present regulatory framework. We will consider the European guidelines and the specific competence content included in the White Paper on Architectural Education for the urban profile. In this sense, the revision of different Spanish Schools of Architecture will be approached, confronting them with educational references in urbanism of other European contexts.

Among the expected results, we can point out that in opposition to the diversification experienced by other disciplines, the training in Architecture has maintained the generalist and integrative character despite the general content reduction that has led to the redefinition of the degree as a consequence of the Bologna Process.

In this context, not only the competence deficit is evident compared to previous curriculums, but it is also difficult to guarantee that the architecture students' learning responds to the new professional demands at a time when urban and territorial planning is in redefinition. Ultimately, the communication aims to reflect on the past and present of the teaching of urbanism in Spain to reflect on the challenges that its training must address in the near future.

Keywords: Curriculum, European Higher Education Area, Schools of Architecture, Urbanism and Territorial Planning.

1 INTRODUCTION

The implementation of the so-called Bologna Process in the Spanish university system has meant a radical change in its structure, management and spirit of teaching. The main idea of this process of updating the system was based on two premises: firstly, the unification of the evaluation criteria and extension of university courses in Europe thanks to the consolidation of exchange and internationalization programs, and secondly, as "an opportunity to rethink the training of graduates and make it more consistent with the reality of our society's work" [1]. The subjects related to urbanism occupy, in the degree of Architecture approximately an average of 12% of the total teaching load in most of the curricula in force in Spain [2]. These subjects, taught in a balanced manner throughout the graduate studies, have evolved from traditional urban planning techniques to the treatment of transversal aspects such as sociology, anthropology or economics. In 67% of Spanish architecture schools, in the majority of cases during the last two years, optional subjects are offered, whose teaching plans deal with complementary aspects such as public space and visual pollution, citizen participation and heritage awareness, or sustainability and energy efficiency. This updating of the perspective from which urban planning is taught highlights as one of the most significant strategies for incorporating the objectives of the 2020 European Strategy into the training of architects.

Since the Renaissance, when Architecture was instituted as a scientific discipline, urbanism was linked to it as an indispensable branch of knowledge: the construction of the city, as a concatenation of constructed and free spaces, contains a purely spatial condition. Giving a thoughtful, rational logic to architectural and urban forms is a crucial advance in the evolution of Humanity [3]. As they are two elements in permanent contact, the reading of architecture and the urban as a single entity is born from the very conception of the discipline: streets, squares, gardens or courtyards are interstitial spaces that would be meaningless without what has been built, without architecture. In this sense, the indissoluble nature of urbanism and architecture means that, in contrast to the technification and specialisation that had been taking place in Europe, the teaching of architecture in Spain maintains an integral component. This bet has become risky insofar as the format of the Bologna Process led precisely to the division of generalist subjects.

As a permeable discipline, the inclusion of urbanism in the Spanish university system took place in 1914, centuries after the Italian Renaissance laid the foundations of the "thought cities", on the occasion of the first industrialisation of the country, in relation cause-effect with the neutrality chosen by the government of President Eduardo Dato. That is to say, it begins to be taught in the career of architecture as a response to a need to order the growth of cities and to accommodate a population sector that moved en masse from the countryside to the town [4]. Due to this underlying question, it seems logical to think that the updating of the subjects taught is consubstantial to the political-social context of the country. When states stabilise after the Second World War, and the European Union builds a common educational framework, urbanism becomes a supranational subject and, therefore, subject to the pertinent updates of structure and content.

2 METHODOLOGY

The methodology developed for this study is based on a previous delimitation and analysis of the competencies in the training of an architect, having resorted to sources linked to Spanish schools of architecture such as curricula, teaching projects or publications on applied methodologies.

In the first instance, the trajectory of training in urban planning has been traced from the first subject that begins to be taught in the 1914 Plan at the Madrid School to the specific competences in Urban Planning and Territory that are included in Libro Blanco [5] for the degree of architect, drawn up by the social agents that have some responsibility in the matter, such as the Schools of Architectures or the Professional Associations. The fulfilment of this document, of marked suggestive character, demands an effort of synthesis that allows the maximum advantage of its directives. The classification of competences specified for the project block in the Architectural studies, which includes several fields of knowledge among which there is Urbanism, implies the need for a previous selection and elaboration of the competences that affect and therefore requires a degree of coordination with the considerations of the other fields of knowledge of the professional title.

Subsequently, a general study has been carried out of the teaching programmes of different schools (Barcelona, Cartagena, Granada, Madrid, Malaga, Seville, Valencia and Zaragoza), which due to their trajectory, projection, number of students and date of establishment constitute different situations in the national context. Access to these plans has been carried out in two different ways: either by

resorting to the material available through their web portals or by requesting them from the relevant secretariats. The diverse consideration and articulation of studies linked to urbanism have posed a challenge when it comes to finding recognisable dynamics, having detected a difference in trends according to the regions in which they are positioned. In spite of the interest that a comparison with the programs of foreign universities could arouse, it has been understood suitable to focus the study in Spanish scope, since it supposes implantation of the Bologna Process very particular and with some strongly differentiating features.

3 FROM "TRACING, URBANIZATION AND SANITATION OF POPULATIONS" TO A COMPETENCY-BASED TRAINING

It was not until 1914 when the training in Architecture introduced for the first-time contents on urbanism: Layout, Urbanisation and Sanitation of Cities [6]. This new subject was the only entity reform that was carried out on the previous plans of 1875 and 1896, leading to the creation of the first Chair of Urbanism at the School of Architecture in Madrid in 1918. In the Plan of 1932, the urban contents were intensified through the implementation of the subject Urbanology [7]. However, it was not until the 1957 Plan, implemented between 1958 and 1962 [8] [9], when training in urbanism took on a particular role in the teaching of architecture. This new plan proposed basic training of two urbanistic courses, together with an optional choice for a speciality itinerary in the fifth academic year: Urbanism Section.

This plan arose as a result of the Law on the Management of Technical Education, which enacted that this type of training should have specialities [10]. In spite of the contrary position of the Higher Council of Colleges of Architects of Spain, the plan contemplated five specialisations, called sections: Urbanism, Structures and Economy, Technique of works, Conditioning and Installations and Restoration of Monuments [11]. These would be inserted in the last of the five courses of the degree. However, taking one or another itinerary had no consequences on the professional attributions, which would be common to all of them. Each school, Madrid, Barcelona and Seville -set up in 1959-, selected three or four of these sections. All of them would offer the specialisation of Urbanism, although it was up to each centre to decide the number of hours allocated to each subject. It should be remembered that it coincides temporarily with the approval of the 1956 Law on Land Regime and Urban Planning, which caused a radical change in the previously held view of urban planning in Spain [12].

The successive revisions of the curriculum in 1964 and 1975 maintained and developed this speciality. The plan of 1964 [13] [14] eliminated pre-career introductory courses, incorporating some of the subjects into the teaching program. This fact, together with the increase in speciality subjects, led to a considerable reduction in general matters. However, Urban Planning maintained the two common courses and introduced the urban component in History of Architecture, in addition to the five speciality subjects in the fourth and fifth year. From 1975 onwards, the number of academic courses in the curricula of the Higher Technical Schools was increased [15], and it was made possible for each University to define its own teaching plan. Some of them, such as the Schools of Madrid [16] and La Coruña [17], kept the previous scheme. The School of Seville [18] reinforced the content of urbanism in the shared part. While the School of Barcelona [19] opted for a broader speciality that brought together the areas of Projects, Urbanism and History, with a structure made up of compulsory subjects and others of an optional nature.

The next major revision of the degree took place in the 1990s, following the passage of the University Reform Act of 1983 [20] and the Decree on common general guidelines for curricula leading to degrees of official character and validity throughout the national territory of 1987 [21]. Following the trend initiated in 1975, each school developed its own plan. However, a common programme was defined based on fifteen core subjects, two of them about Urbanism (24 credits) [22]. Besides, each teaching plan added a different offer of compulsory and optional subjects. The teaching load of these plans ranged from 335 to 450 credits and had to be approved by the Council of Universities. In this sense, schools such as Alicante [23] or El Valles [24] didn't offer any compulsory subject related to Urbanism, while others like Valladolid [25], Madrid [26] or Seville [27] had respectively, twenty-four, nineteen or fifteen additional credits. It can be said that the offer of optional subjects was extensive in the majority of cases, although the previous specialities were eliminated. However, some schools such as Madrid, Seville, Alcalá de Henares [28] or La Coruña [29] implemented different curricular itineraries. These itineraries were sets of optional subjects that inherit the tradition of the previous

sections, but with new teaching approaches. Except for Madrid, the offer of optional subjects in urban planning was less than the number of elective credits that students had to take.

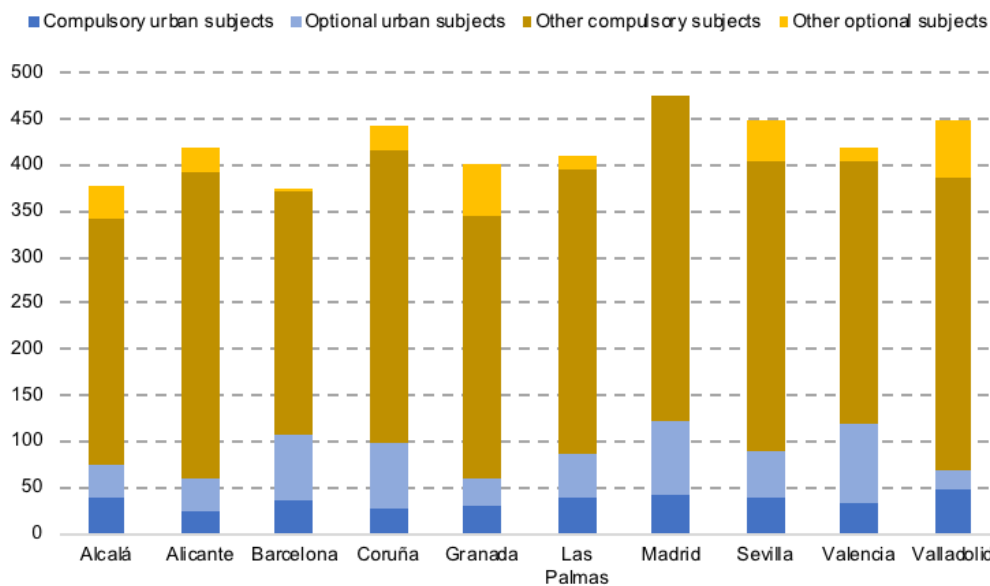


Figure 1. Results' synthesis based on quantitative data about the number of credits about Urbanism taught on each one of the Public Schools of Architecture in 1990's. Source: Compiled by the authors from every Study Plan.

Along the same lines are the new schools founded in the years before the implementation of the European Higher Education Area (Gerona and Málaga in 2005). Although they adopt the curricular structure of the 90s, they anticipate some of the measures recommended for the Degree of Architecture in the Libro Blanco [30], published in 2005. This work included an in-depth study of the training and professional exercise of architecture in Spain in comparison with other European countries. For the degree in Architecture defined the following competences as specific to the field of urban and territorial planning: understanding ecology and sustainability; understanding urban sociology and history; understanding urbanistic methods; comprehension of urban planning, knowledge of legal fundamentals; capacity for the project of free spaces; capacity for environmental adequacy; and knowledge of the valuation of immovable goods.

From this study, the conditions to which the curricula leading to the obtaining of qualifications for the exercise of the regulated profession of Architect were established. Initially, these competences were integrated into a single Bachelor's degree in Architecture, of 330 credits and six courses, and later in the combination of Bachelor's and Master's Degrees, made up of five and one courses respectively. These are the structures generally used, but other formulas such as 3+2 have been implemented, especially in private universities. In any case, all of them should include the following competencies about urban and territorial planning in bachelor and master level:

Table 1. Summary of the competences on urban planning taught in the Bachelor's and Master's Degrees in Architecture. Source: Compiled by the authors from Order EDU/2075/2010, of 29 July, which establishes the requirements for the verification of official university degrees that qualify for the exercise of the profession of Architect.

COMPETENCIES	BACHELOR'S LEVEL	MASTER'S LEVEL
Aptitude for:	The conception, practice and development of Urban projects (w)	The conception, practice and development of Urban projects (w)
	Drawing up functional programmes for buildings and urban spaces	Drawing up functional programmes for buildings and urban spaces
	Removing architectural barriers (w)	

	Cataloguing built and urban heritage and planning its protection.	
Capacity for:	Drawing up civil works projects (w)	Drawing up and managing urban plans at any scale (w)
	Design and execute urban layouts and urbanisation, gardening and landscape projects (w)	
	Apply urban planning regulations and ordinances	
	Prepare environmental, landscape and environmental impact correction studies (w).	
Adequate knowledge of:	Methods of studying social needs, quality of life, habitability and basic housing programmes;	
	Ecology, sustainability and the principles of conservation of energy and environmental resources	
	The architectural, urban and landscape traditions of Western culture, as well as their technical, climatic, economic, social and ideological foundations	
	The relationship between cultural patterns and the social responsibilities of the architect	
	Urban sociology, theory, economics and history	
	The methodological foundations of urban planning and territorial and metropolitan planning;	
	Mechanisms for drafting and managing urban plans at any scale.	
Knowledge of:	Civil, administrative, urban planning, building and industry regulations relating to professional performance;	

It should be noted that two types of training are contemplated. In the first place, a content of a purely theoretical-disciplinary nature, in which the student passively receives master classes. For the most part, the content of these classes is based on the transfer of knowledge of basic concepts of urban planning: uses, programmes, equipment, planning parameters, types of plans and jurisprudence or territorial structure. The interrelationship between the different subjects, which are undoubtedly watertight, is then limited to the subsequent putting into practice of the theoretical knowledge acquired at the time when the opportunity for practical application arose.

On the opposite side, workshop teaching (w) represents another type of training, perhaps more conceptually related to the professional practice of Architecture and Urbanism. This teaching method mixes theoretical and practical teaching, and its teaching objective is to carry out a specific urban analysis at different scales depending on the object proposed as a project, in which the teacher suggests goals and themes to be developed individually or in groups. The monitoring of the work is carried out in a tutelary and continuous way, incorporating public critical sessions with the aim of improving the general points and visions of the urban project.

Faced with this new panorama, in which the purely disciplinary subjects are mixed with the workshops, the incorporation of practical skills as a structuring element of teaching is an opportunity. And, therefore, it responds to a need to reflect on how to teach Urbanism in this new framework. The greater involvement of the professional profile in training has direct consequences on the teaching objectives proposed so far, which although maintaining the same substratum, must take measures that allow adaptation to this new situation.

4 RESULTS. CURRENT VISION OF URBANISM AND LAND PLANNING IN ARCHITECTURE SCHOOLS IN SPAIN

In order to find out how the current Spanish university integrates the discipline of urban planning in the teaching of architecture, an analysis sample has been taken consisting of the curricula corresponding to the Bachelor's and Master's degrees of eight schools of architecture in Spain. It is considered as a sample of schools of a more significant historical route and others of recent foundation and in different geographical points of Spain: Barcelona, Cartagena, Granada, Madrid, Malaga, Seville, Valencia and Zaragoza. For this paper, the eight schools have been sorted alphabetically.

To this end, data have been extracted from teaching programmes and projects of all the subjects taught by the Departments of Urban Planning and Territorial Planning or subjects where urban planning and territory are essential of the eight universities mentioned, both for Bachelor's and Master's degrees (Table 2). For each one, the following data have been collected: School, Degree, Name of the subject, Course in which it is taught, and whether it is Compulsory or Optional in the Curriculum (Type).

Table 2. Summary of the subjects on urban planning taught in the Bachelor's and Master's Degrees of the eight selected Spanish Schools of Architecture. Source: Prepared by the authors on the information collected from the Study Plans and Verification Memories of Degrees.

BARCELONA				CARTAGENA					
Degree	Subject	Course	Type	Degree	Subject	Course	Type		
Bachelor	Urban Planning I	2	Compul.	Bachelor	Introduction to urban planning	2	Compul.		
	Urban Planning II				Urban Planning 1	3			
	Urban Planning III	Urban Planning 2			4				
	Urban Planning IV	Urban Legislation							
	Urban Planning V	Territorial Planning			5				
	Urban Planning VI	Urban Planning			4- 5				
	New York-Barcelona: Atlas of Urban Fabrics	4	Optional	Master	Urban Management	5	Optional		
	Urban politics				Urban and Natural Landscape	3 - 5			
	Seminar Infrastructure, City & Architecture	5			Optional	Urbanism	1	Compul.	
	Territory and Landscape					MADRID			
	Urbanism and Ecology. Concepts, Strategies and Projects					Bachelor	The City and Town Planning	2	Compul.
	The city drawn by the architects						The City and the Built Environment	3	
	Learning from X City		Urban Project	4					
	Urban Architecture. Historic City		Urban and Land Planning	5					
	Public Space/Urban Design		Master	Optional		Experimental Workshop 2 (Urbanism, City & Territory)	4	Optional	
	Urban Studies with GIS technology					Intensified study subject of Urbanism and Town Planning	5		
The Urban Reform	Urban and regional planning workshop					1	Compul.		
Urban Recycling	1		Optional	Territory, environment and landscape		1	Optional		
Theory and Practice of Urban and Building Design		Urban history and culture							
Activities and Architecture in the City		Accesibility, uses, spaces & mobility							

	Processes, Instruments and Procedures of the Urban Planning Practice				Research workshop: research in urban planning				
GRANADA					Research workshop: lines of research				
Bachelor	Urban Planning 1	3	Compul.		Research in urban planning				
	Urban Planning 2				Towards a more sustainable city. Urban planning and the paradigm of sustainability				
	Urban Planning 3	4			Town planning for equality in diversity: Gender, age, immigration				
	Urban Planning 4				Strategic urban planning				
	Urban Planning 5	5			Environmental planning				
Monographic Urbanism and Landscape	3-5	Optional	The Project and making of new urban territories						
Master	Architecture: Project and planning	1	Compul.		The territory as socioeconomic basis				
	Sustainable Urbanism Laboratory	1	Optional						
MALAGA					SEVILLA				
Bachelor	Urban Planning 1	2	Compul.		Urban Planning 1	1	Compul.		
	Urban Planning 2				Urban Planning 2	3			
	Urban Planning 3	3			Urban Planning 3	4			
	Urban Planning 4	4			Urban Planning 4	5			
	Urban Planning 5	5			Urban Planning and Sustainability	5		Optional	
	Heritage, Tourism and Territory	5			Public Space in Urban Planning				
Master	Urban Planning and Legislation	1	Compul.	Master	Urban Planning and Masterplans	1	Compul.		
	Healthy City and Ambient Intelligence	1	Optional						
VALENCIA					ZARAGOZA				
Bachelor	Urban Planning 1	2	Compul.		Urban Planning 1	2	Compul.		
	Urban Planning 2	3			Urban Planning 2	3			
	Urban Planning 3	4			Urban Planning 3	4			
	Legal architecture, planning legislation and valuations	5			Urban Planning 4	5			
	Sustainable Urbanism	5			Landscape projects	5		Optional	
	Workshop on Urban Planning, Territory and Landscape Projects				5	Urbanization projects		1	Compul.
	Legal Architecture, Urban Legislation and Valuations					integrated urban and landscape projects			
	Computer Applications for Urbanism and Territorial Planning					Urban and landscape management			
Master	Workshop of Advanced Projects of Urbanism, Territory and Landscape	1	Optional		The city as a cultural landscape. Building on what has been built	1	Optional		
	Urban Regeneration and Renovation								
	Urban Management								
	Urban Economy								

In addition, and although due to the limitation of space it has not been possible to include it expressly in Table 2, both the contents of all the subjects and the Specific Competences dealt with in each one - according to the guidelines of the White Paper on Architecture- have been analysed. Further details can be found in the Study Plans and Verification Memories of the Degrees referenced below. After quantifying the information presented above, some results have been extracted, which are expressed, in a synthetic way, in Figure 2.

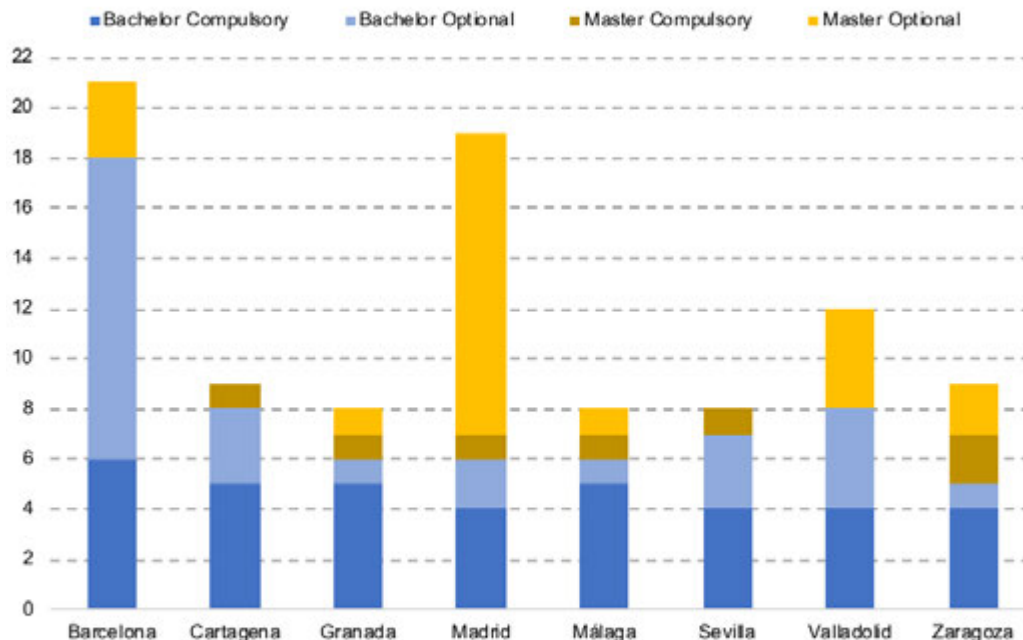


Figure 2. Results' synthesis based on quantitative data about the number of Subjects about Urbanism taught on each one of the Schools of Architecture considered. Source: Prepared by the authors.

It is observed how, in general terms, the School of Architecture with the most significant attention to the discipline of Urbanism is Barcelona. It has, in total, 18 subjects of the area in Bachelor [31] (of which six are compulsory), and three optional ones in Master [32]. Madrid, however, offers a total of 13 Master's subjects (one of them compulsory) [33], while in Bachelor 6 only: 2 optional and four obligatory [34]. The same number of mandatory subjects -4- have Seville [35], Valencia [36] and Zaragoza [37]. Between these three, Valencia offers the most urbanism subjects, a total of 12. The second is Zaragoza which provides 9 subjects; nevertheless, Seville, with four optional, give more subjects in Bachelor than this, so Zaragoza is the school with the lowest total range of matters related to Urbanism in Bachelor of those analysed in this work. In the case of Master: Seville [38] offers one compulsory, Valencia [39] provides four optional and Zaragoza [40] two obligatory and two optional. In total, Granada [41] [42], Malaga [43] [44] and Seville (all three in Andalusia region) are the ones that offer fewer urbanism subjects, but of these three, Granada and Malaga offer fewer subjects in Bachelor than Seville. Cartagena [45] [46], finally, only has one compulsory in Master, as well as Seville, and five compulsory subjects plus three optional in Bachelor.

As for the contents and specific competences, we find the most significant similarities in the compulsory subjects of the Bachelor, while the optional ones of both the Bachelor and Master are more varied, not only in quantity, as we have already seen, but also concerning their orientation and topics. In this sense, all the Study Plans begin the compulsory Bachelor subjects with an introduction to general terms and concepts of urbanism. They then generally study the forms of urban growth and, later, the planning figures and more technical and legal aspects, first on an urban scale and then on a territorial scale. In some cases, compulsory subjects include specific courses on housing, as well as contents relating to the environment, sustainability or urban regeneration.

A greater variety is found, as we said, both in the Bachelor's optional courses and in the Master's subjects. In this sense, Barcelona is the one that, naturally, offers the broadest range for undergraduate electives, which come to deal with particular topics, including specific cities that are used as case studies for a full course, or intensive workshops on a specific issue. Other peculiarities are detected, for example, in the case of Seville which, although with three optional subjects, is the only one that deals with Urban Heritage Protection Planning, or that includes contents on landscape

design and use of vegetation on the subject about Public Space. Malaga, Granada and Zaragoza, with only one optional subject, are the schools that offer the less variety in Bachelor. As a singularity, Malaga treats the heritage from the tourism and the territory, while the others two deals the landscape. Both Barcelona and Valencia include the study of GIS systems as an optional degree, as well as an introduction to the subjects of urban management, official and legal procedures and professional performance of urbanism. In this last optional are included Cartagena in the Bachelor's level and Zaragoza in the Master's one.

As far as the Master's is concerned, Madrid offers an excellent variety, including many optional courses with particular and varied subjects, as was the case for Barcelona with the Bachelor's Degree. It includes, for example, two introductory subjects on city research or a specific one on socio-economic issues and, as a unique case, a matter on gender issues in urbanism. As a peculiarity to highlight an optional subject in Malaga about the healthy city and ambient intelligence.

5 CONCLUSIONS

This paper has sought to show the evolution of the teaching of urbanism in the Schools of Architecture. Its incorporation has been progressive, in parallel with the development of the urban discipline, which has a significant milestone in the approval of the Land Law of 1957. Expansion of professional attributions which resulted in the introduction of specialities in the title of Architect from 1957 onwards. This fact did not mean a decrease in professional attributions, being common regardless of the specialisation studied. Specialities were maintained until the 1990s, although many schools continue to offer elective itineraries in urbanism. In the opinion of the authors, not having diverted professional attributions by specialities has meant a mismatch between the training received and the skills acquired by the students.

This imbalance has also been increased as a consequence of the diversification of the teaching offered as a consequence of the creation of numerous schools of Architecture. Beyond the shared subjects, it has been detected that the schools with the most magnificent trajectory, and that have a higher number of students, have a more diverse curricular offer. In contrast, newly established schools, most of which have fewer pupils, have a reduced elective programme.

During the debate that accompanied the Bologna process, the possibility of specialising, unfolding and multiplying in a great diversity of university degrees was put on the table [47]. However, Spanish professional architectural associations pressed to maintain a unique title. A mismatch that even is mentioned in the Libro Blanco. This document goes so far as to propose the need to define a master's program about urban and territorial planning of 60-120 credits, which will allow students to be adequately trained in this subject. Without assessing whether this is the ideal formula, the truth is that the speciality demanded by the current labour market requires a reformulation of the educational planning of the training of future responsible for urban and territorial development in our country.

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