

UVA students bring Architecture closer to both schools and families in Castilla y León

Estudiantes UVa llevan la Arquitectura a colegios y familias de Castilla y León

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Resumen

There is a general decrease in the interest in architecture that makes it necessary to do initiatives with the aim of children and young people of all ages, and not just before entering university, knowing the profession and competencies that architects can develop. The main goal of this Innovation Project is to organize collaborative and multi-disciplinary procedures to bring architecture closer to both the educational centres in Castilla y León and to society. During the school year students, professors, researchers, administration staff and former Architecture students propose ludic and collaborative activities to do in non-university educational centres. The year ends with a Fair "Espacios de Ingenio" at our own University

Palabras clave

Vocations, workshop, collaborative, childhood, families

Abstract

El descenso global del interés por la arquitectura, principalmente por desconocimiento del amplio abanico de competencias y campos profesionales que permite desarrollar, hace necesaria la realización de iniciativas que la den a conocer, no solo en etapas inmediatamente anteriores al acceso a la Universidad, sino durante el transcurso de la vida escolar. El objetivo principal del PID es estructurar procedimientos colaborativos y multidisciplinares para acercar la arquitectura tanto a los centros educativos no universitarios de Castilla y León como al conjunto de la sociedad. Con este fin, a lo largo del curso se propone la realización de diversas actividades lúdicas, participativas e interactivas promovidas y/o con la participación de los estudiantes de la UVa conjuntamente con profesores, investigadores, PAS y profesionales antiguos alumnos de la UVa, que se realizan en los centros educativos no universitarios y culminan con la celebración de una Feria en la propia Universidad

Keywords

Vocaciones, talleres, colaborativo, jóvenes, infancia, familias

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- 5 Cristina Caro Gallego, "Futuros arquitectos formadores: didáctica de la Arquitectura en la escuela", in *XII Jornadas de Redes de Investigación en Docencia Universitaria 2014. El reconocimiento docente: innovar e investigar con criterios de calidad*, Rafael Muñoz Guillena, María José Rodríguez-Jaume, María Elia Gutiérrez-Mozo, David Fontcuberta Rubio, Juan-David Sempere-Souvannavong, Irene Sentana Gadea, Raquel Pérez del Hoyo, Laura Soler Azorín y María José Torregrosa Vélez, (Universidad de Alicante, 2014), 681-695. <https://web.ua.es/va/ice/jornadas-redes-2014/> (Last accessed 20 August 2018).
- 6 The Obra Social La Caixa and FECYT (Spanish Foundation for Science and Technology) in their study about technological vocations (2015) *¿Cómo podemos estimular una mente científica?* analyse results of some research papers in Psychology, Sociology and Science and Technology Didactic, and they confirm that this process is influenced by other factors such the self-perception, family and educational and social surroundings. Apart from the self-perception, it is key the image that both parents and teachers assign to those students who want to study these subjects. According to Dewitt, youngsters opting or not for a career related to STEM has to do with their capacity to visualise their professional future in a scientific-technological context and with the imbalance between their image of STEM professionals and their own image. On many occasions, youngsters are hardly oriented and when this orientation happens, they have already lost interest in these careers.
- 7 Josep Muntañola Thornberg, professor of the Architectural Projects Department at Universidad Politécnica de Cataluña

Introduction

There has been observed a greater decline in vocations in different technical fields (Architecture and Engineering) over the past few years. This is, apparently, due to a general ignorance and lack of orientation towards these professional competences. Since this situation is not exclusive of our area and is now a real social and business concern, some countries and universities have been promoting several initiatives to boost scientific and technical vocations.¹

The experience and good results of the Innovation Teaching Project ORIENTA-ETSA, during the course 2009-10 (awarded the accésit of the Awards Educational Innovation, Social Council, 2014), which supports a protocol to orientate first-year students at ETSAVA,² highlighted the need to organise multidisciplinary protocols for early orientation at both schools and high schools; hence, children and youngsters could be aware of the Architecture as a close technical-artistic discipline and their interest in one of their best future professional opportunities may be aroused.³

Justification

Traditionally, the teaching of the architecture before the university has been limited to the knowledge of some features and buildings of the Classic or, only rarely, recent Architecture, with which the children and youngsters only build up a distant relationship. It is not until the publication of Built Environment Education (BEE) Guidelines by the International Union of Architects (2002), when the importance of the teaching of the architecture and the environment has been recognized not only for future architects but also for the users of buildings. Besides, Howard Gardner (Gardner, 1983)⁴ has identified the "visual-spatial intelligence" as one of the seven that define a person. All this confirms that the teaching of architectural concepts make people more creative, independent⁵ and critical with their built surroundings.⁵

A key stage of the development of aptitudes and sensibilities is the compulsory education⁶ during the childhood, drawing and building are equally natural since children in primary school express their emotions and feelings through creative acts (drawings, building toys...). These capacities are hardly encouraged; they even often disappeared during the following school years. The publications, with regards to this, by professor Josep Muntañola⁷ at UPC are a definite reference about architecture and childhood as he develops several proposals to bring students closer to architecture.

Initiatives in teaching European children architecture

There is currently a growing interest in all activities designed to teach children architecture in Spain,⁸ These experiences are generally focused on artistic concepts. Although some schools organise a few of them, different associations and groups informally undertake most.⁹ For this reason, activities are playful and more focused on the final outcome of the activity itself than on medium to long term educational goals.

The participation of the Superior Council of Spanish Architects' Guild in the international UIA Work Group "The architecture and the children" or the publications by the Arquia Foundation on its blog make clear the concern of architects over the teaching of built environment to children and youngsters as future persons responsible for architecture. There are also some isolated cases by Architects' Guilds such as in Madrid or Valencia involving children in promoting architecture.

In our close, but out of the university or formal, learning environment, some meetings have been held to set up some projects and experiences related to this issue. Since 2014, different meetings to spread educational projects and experiences regarding teaching architecture to children and youth have been

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(Barcelona), has written several books regarding the architecture teaching in which he puts forward Architecture can be conceived by the dialogue between natural and social sciences and between history and nature.

- 8 Virginia Navarro, "¿Porqué enseñar arquitectura a los niños?", in Blog Fundación Arquia, 22 July 2016. <http://blogfundacion-arquia.es/2016/07/por-que-ensenar-arquitectura-a-los-ninos/> (Last accessed 20 August 2018).
- 9 Examples are: "La Casa de Tomasa" "Grupo Playgrounds", "Maushaus", "Osa Menor", "Arquitectives", "Chiquitectos", "Lunarquicos", "Arkikids", "Arkitente", "La casa del vacío", "Asociación Galatea", the online magazine Amag!.... who have been organising activities related to architecture and children for several years.
- 10 Santiago Atrio, "Educación y Arquitectura: ayer, hoy mañana. Crónica del III Encuentro Internacional de Educación en Arquitectura para la Infancia y la Juventud", in Tabiya, Revista de Investigación e Innovación Educativa UAM, nº 44 (2016), Jorge Raedó y Virginia Navarro, 131-148. https://revistas.uam.es/tarbiya/article/view/6809/Tarbiya%2044_08 (Last accessed 20 August 2018).
- 11 Grupo Playgrounds, "Manifiesto sobre educación, arquitectura e infancia", in fronterad Revista digital. <http://www.fronterad.com/?q=manifiesto-sobre-educacion-arquitectura-e-infancia> (Last accessed 20 August 2018).
- 12 Javier Encinas Hernández, "Arquitectura temprana. Estrategias didácticas de formación arquitectónica en el Sistema educativo actual desde la enseñanza secundaria" (doctoral thesis, Universidad de Valladolid. ETS de Arquitectura, 2013). <https://uvadoc.uva.es/bitstream/10324/16246/1/Tesis837-160224.pdf> (Last accessed 20 August 2018).
- 13 Xose Manuel Rosales Noves. "PROXECTOTERRA. Un país: su arquitectura y su territorio", in *VIII Congreso DOCOMOMO Ibérico. La Arquitectura del Movimietno Moderno y la Educación*. (Universidad de Málaga: Ministerio de Educación Cultura y Deporte, 2013), 23-30. <https://dialnet.unirioja.es/servlet/libro?codigo=581375> (Last accessed 20 August 2018).

organised; namely, the "Forum on Teaching Architecture for Children and Youth"¹⁰ or the International Forum "Ludic Architecture" in Oporto. As a result, the "Manifiesto for Education, Architecture and Childhood" was drawn up in 2014¹¹ and I International Biennial in Architecture for Children and Youngsters, LUDANTIA, was held in Pontevedra in May 2018. In the latter, there were shown projects that somehow deal with issues related to childhood, architecture and education, participation processes, teaching architecture as a language, school equipment, teaching space, didactic material from an architectural or design perspective, and urban regeneration for childhood.

In Europe, there are some interesting initiatives in France, United Kingdom, Germany, Italy or Portugal, but it is Finland the reference since this country has integrated architecture into the school curricula since 2000. Besides, it has an observatory of architectural teaching for children and youngsters and a network of schools to train teachers, students and families.¹²

Antecedents of the Innovation Project (Spaces for Ingenuity, Creativity, Technology and Sustainability): The workshops "Creativity Spaces" at ETSAVA

Among all the researched initiatives, three contributed to the outset and structure of the Innovation Project "Espacios de Ingenio":

Organising the Fair. Both the Fair of Architect's Apprentice and Ingenuity at Universidad Politécnica in Madrid and the contest Ephemeral Architecture at the School of Architecture in Navarra are organised by the University with an aim to involve school and high school students.

Institutional Collaboration for promoting the Project. The Proxectoterra in Galicia, Spain since 2003, collaboration between architecture and schools introducing contents related to built heritage into educational syllabus. This project stands out because of the involvement of both the Architects' Guild and the Regional Government, Xunta de Galicia.¹³

The School of Architecture and activities at schools and high schools. "Little Architects" in United Kingdom, directed by the Spanish architect Dolores Victoria Ruiz Garrido, has developed a platform for teaching architecture and sustainability in London primary schools led by the Architectural Association School of Architecture. Its aim is to promote creative thinking and a better understanding of our built environment for future generations.

The beginning of activities at schools in Castilla y León. The IP "musicARQ. Creating Architecture with music"

Bearing in mind these approaches, in the academic year 2015-16 the Innovation Project "musicArQ. Creating Architecture with music" was conceived in collaboration with Vice-chancellor's Office of University Extension at University of Valladolid, the Provincial Board of Education in Valladolid and the Ministry of Education of the Castilla y León Regional Government and the support of the Spanish Royal Academy of Engineering. This IP became the pilot project to bring architecture closer to children, youngsters, teachers, families, in short, to the whole society with workshops, contests and collaborative activities undertaken by multi-disciplinary groups at the very same schools or social centres. In both, didactic notebooks and an online campus are provided to monitor and assess schools, and to extend the families' experience. These tools try to guide teachers generating a forum to debate and assess the own project. It should be pointed out that some students

[Fig. 1]. Summary of the workshop musiARQ at the school Sagrada Familia, Valladolid, 3^o Primary Education.



of the Degree in Primary School Education collaborated that first year and as a consequence of this, the student Rebeca Martín Carazo did her final degree dissertation “The concept of architecture in Primary Education” with the help of the school Sagrada Familia.

The IP “Espacios de Ingenio” at the UVA and activities and workshops Espacios de Creatividad by School of Architecture ETSAVA at schools and high schools in Castilla y León

The experience of the IP musiARQ was the basis for the IP “Espacios de ingenio. Creatividad, tecnología y sostenibilidad” in 2016-17 and 2017-18, coordinated by Gemma Ramón Cueto, professor at the School of Architecture at University of Valladolid and qualified as “Excellent” by this university. The IP, a joint project among the Schools of Industrial, IT, Telecommunications, Agrarian Engineering and Architecture, considers the proposal, organization and undertaking of different activities to boost technological vocations in educational institutions except for tertiary ones. Each School organises these activities with the same aim to hold the Joint Fair “Espacios de ingenio. Creatividad, tecnología y sostenibilidad” in one of the five Schools yearly. The Fair, open to the public, is thought as an interactive approach to several fields by shows, settings up, workshops, talks, awards ceremonies, guided visits, etc. and always with the involvement of UVA students. The Ministry of Education opened the III Fair “Espacios de Ingenio” on 15 and 16 March 2016 at ETSAVA with about six hundred school students from all over Castilla y León.

Goals of the workshops “Espacios de Creatividad” at ETSAVA

Taking into account the main goal of developing new multidisciplinary protocols to get architecture closer and known, seventeen types of workshops have been put together and are hold at educational institutions. Accordingly, several ludic, collaborative and interactive activities are carried out to bring schools and high schools in Castilla y León closer to architecture with the participation of current and former ETSAVA students.

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Specific goals are to:

Goal 1. Inform about the skills and professional fields developed in the Degree and the Master's degree in Architecture. Get both schools and high schools from Castilla y León closer to architecture. Make students at ETSAVA be aware of the professional skills and prospects when transmitting others.

Goal 2. Get working groups together at ETSAVA to structure multidisciplinary protocols by ludic and collaborative experiences, which make Architecture known by the students at schools and high schools. Some activities are part of the subjects taught by professors and GIR (Consolidated Research Group) researchers taking part in the IP.

Goal 3. Foster the sense of belonging by activities aimed to get UVA, and, particularly, ETSAVA and the Degree and the Master's degree in Architecture known.

Goal 4. Boost the use of IT and the dissemination of ETSAVA activities on social networks among participants: ETSAVA, students and contributors. Broadcast the ETSAVA activities on media.

Goal 5. Propose actions to boost the external role of ETSAVA by broadcasting the activities undertaken by working groups on media, consolidating the institutional collaboration of former editions (Ministry of Education, Ministry of Family of the Regional Government of Castilla y León, and the City Council of Valladolid) and promoting new potential collaboration with other institutions. The involvement with other City Councils or Provincial Councils in Castilla y León and the Music Conservatory (in the case of msicARQ) is to be sought.

Goal 6. Identify the causes to the decline of the interest in Architecture and Engineering to work towards possible solutions.

Developed Work

The warm welcoming of the educational institutions of the IP musiARQ, with more than thirty applications for the course 2016-17, and its wide broadcast on social networks and media encouraged professors and researchers at ETSAVA to organise more workshops and collaborative activities within the IP "Espacios de Ingenio" which were mainly undertaken at schools and high schools.

Putting professors of all departments, students of every course, GIR researchers, former students, administration staff at UVA and teachers together in working groups, ETSAVA have organised twenty-six different types of activities and workshops called "Espacios de Creatividad", which strengthens the cross-wise knowledge of Architecture students. Every activity, coordinated by professors or students or being part of a subject or, even, of the GIR, is organised in groups and are dedicated to families and children between five and seventeen years old. In this way, Architecture students directly apply the knowledge acquired in the classrooms out of them contributing to their own learning process and innovating in their cross-wise training. On the other hand, information processes and advertising of the degree notably improve with the active role of our students.

Any interested school must fill in a form to take part in on the ETSAVA website or Educacyl (Ministry of Education, JCYL, website) applying for three or four workshops or activities they consider more attractive. Once the availability is checked, working groups visit the schools to do the workshops on Fridays. Different groups run workshops for a maximum of fifty students during the school timetable simultaneously. Once the academic year is finished, the schools receive an assessment form in which they can also include suggestions.



[Fig. 2]. Summary of workshops Espacios de Ingenio #EspaciosDeCreatividad #ETSAVA at secondary and higher education courses.

Every team consists of four or five people: two or three coordinators (professors, students or former students) and two or three ETSAVA students. Hence, about twenty UVA people run workshops for about two hundred children of different ages on every session.

Three kinds of workshops have been organised over these past years: coordinated by professors and researchers with the help of students, coordinated and organised by students with the help of professors and researchers, and workshops within subjects or GIR.

The workshops are arranged reproducing the creative process (preparation, inspiration, project and materialization), which is along the whole training period of an architect. The collaborative work allows children to use the innate capacity to express themselves through the drawing and the buildings. The last step, the materialization has the aim to regard the architecture as close and part of our landscape since our childhood. Therefore, the main goal is boosting creativity and the knowledge of the interaction among society, architecture and environment. This contributes to the idea of the architecture as a close discipline in both the educational and family surroundings.

Table 1. Workshops Espacios de Creatividad ETSAVA at schools

| Workshop | Name | GIR o Group | Age |
|----------|--|---|-------|
| T0 | Classrooms at hospitals | PID | 5-17 |
| T1 | Creating architecture with music | PIE musiARQ | 5-12 |
| T2 | Create your own room | GIR Architecture and film | 12-17 |
| T3 | Cardboard Project | EfimerARQ | 12-17 |
| T6 | Dressing-up with Architecture | Architecture & Theatre | 12-17 |
| T/ | Time Machine. Urban Landscapes from our memory | GIR LAB Research and Intervention on Architectural Landscape, Heritage and Culture. | 12-17 |
| T9 | A from Architecture | GIR LAB Research and Intervention on Architectural Landscape, Heritage and Culture | 12-17 |

| Workshop | Name | Subject and year | Age |
|----------|--------------------------------------|-----------------------------------|-------|
| T1 | festiMARQ | Wooden Structures (5º) | 12-17 |
| T4 | Paper Architecture | Architectural Representation (1º) | 12-17 |
| T5 | Playing with chalks | Architectural Projects (3º) | 12-17 |
| T10 | Figurative Shadows | Architectural Representation (1º) | 12-17 |
| T16 | Materials Workshop. Build as you can | Building I y II (1º) | 12-17 |
| T17 | Spaces for Creativity | Building IV (2º) | 12-17 |

| Workshop | Name | ETSAVA Students Coordinators | Age |
|----------|----------------------------------|---|-------|
| T11 | Things that are almost houses | Héctor Jimeno Merino | 12-17 |
| T12 | Tape Art | Teresa Bahillo León y María Basterra García | 12-17 |
| T14 | 3D Game. Pop up and Architecture | Cynthia Ortega Méndez y María Rodríguez Marcos | 12-17 |
| T15 | UBICA-T | Sergio Riestra Guerra y Marina Pariente Lorenzo | 12-17 |

| Workshop | Name | Architects | Age |
|------------------------|----------------------|-------------------------|-------|
| Former students ETSAVA | Age | | |
| T8 | Instant Architecture | Leonardo Tamargo Niebla | 12-17 |

Table 2. Workshops Espacios de Creatividad ETSAVA to run at ETSAVA or Fairs

| Workshop | Name | GIR o Coordinator Group | Age |
|----------|---|---|-------|
| E1 | Drones and the conservation of Architectural Heritage | Laboratory of Architectural Photogrammetric | 5-17 |
| E2 | Air! | GIR Architecture and energy | 5-12 |
| E3 | Solar House. Urcomante | GIR Architecture and energy | 12-17 |
| E4 | Materials Workshop. Getting drenched! | Building I and the company PUMA | 12-17 |
| E5 | You Adobe. Building a Nubian vault. | Group Tierra | 12-17 |
| E6 | 3D. Cut or print, this is the question. | Workshops of Scale models | 12-17 |
| E7 | Filmed experiences | GIR Architecture and film | 12-17 |

[Fig. 3]. Activities and workshops Espacios de Ingenio #EspaciosDeCreatividad undertaken at the School of Architecture.

Semana de la Ciencia de Castilla y León 2017

Viernes, 17 de noviembre

Universidad de Valladolid

ETSAVA
ESCUELA TÉCNICA SUPERIOR DE ARQUITECTURA
UNIVERSIDAD DE VALLADOLID

Taller 1. "Su Adobe". Cátedra Juan de Villanueva y Grupo Tierra.

Taller 2. "¡Ventilate!". GIR Arquitectura y Energía.

Taller 3. "StandUva". CARDBOARD PROJECT. Taller y Concurso StandUva de cartón. EfimerARQ.

Taller 4. "Hoja en blanco". Pop up y arquitectura. Representación de la arquitectura.

Taller 5. "Urcomante". Casa solar. GIR Arquitectura y Energía.

Taller 6. "Los drones y la conservación del Patrimonio Arquitectónico". Laboratorio de Fotogrametría Arquitectónica.

Taller 7. "A de Arquitectura". GIR Laboratorio para la Investigación e Intervención en el Paisaje Arquitectónico, Patrimonial y Cultural.

Taller 8. "3d. Cortar o imprimir, he ahí la cuestión". Taller de maquetas y exposición para el vuelo de drones.

Taller 9. "¡Que me mojo!". Taller de materiales de construcción: impermeabilidad, durabilidad, resistencia, etc.

Taller 10. "Arquitectura de papel". Representación de la arquitectura.

Taller 11. "Sombras figurativas". Taller de impresión 3d y sombras. Geometría descriptiva.

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Main outcomes

For three consecutive years, ETSAVA has undertaken 67 workshops for more than 2000 children at 15 different educational institutions, Secondary, Higher Courses and Vocational Training stages; 35 musiARQ workshops and family activities for 1600 children and 6 different Kindergarten and Primary schools: 6 workshops in hospitals; it has taken part in 6 science fairs for 1400 children and adults and has organised 3 Fairs "Espacios de Ingenio", the last one —III Edition at ETSAVA involved 16 centres from Castilla y León and 700 students of all the stages. All these activities have been carried out in collaboration with the Ministry of Education, Regional Government Castilla y León and the Educational Board of the City Council of Valladolid.

ETSAVA organises an award ceremony for both the Architecture students and other participants at the beginning of each course. Last edition has coincided with the Week of Science. For this reason, an open day full of workshops was organised, including lab workshops impossible to run at schools. Its turnout was 300 students of 8 different schools. In this way, students who were part of the IP at their school know the results got by Architecture students first hand. Besides, they can know and get involved in more activities performed by the Research Groups.

All this is possible thanks to the participation of 21 professors and researchers, 41 students regularly listed in working groups (all they are entitled to get 1 ECTS towards their degree; attendance is free and voluntary; being all welcomed), 11 of them are coordinators, 5 former students and 5 administration staff. The ETSAVA has endorsed this IP so positively and a numerous group has responded so well that it is foreseeable that the activities continue to be organised in following editions.

It is of vital importance the broadcasting on both media and social networks (@ musiARQ, Facebook, Twitter, Instagram and YouTube) adding the hashtags #EspaciosDeCreatividad, #ETSAVA to hashtag #EspaciosDelIngenio. Not only must the involvement of UVA professors, researchers and students be highlighted but educational institutions as well. It must also be pointed out the specific place of this IP on the ETSAVA website, which gives access to enrolment forms, and the indispensable help of the Ministry of Education, Castilla y León and its website Educacyl and the Educational Board of the City of Valladolid to make this project known by centres.



[Fig. 4]. Working Groups on multidisciplinary Espacios de Creatividad and Hospital Classrooms

Among all the activities, these must be outlined: the workshops “Espacios de Creatividad”, at the high school IES Las Salinas de Laguna de Duero (Valladolid) with the students of the subject Building IV in June 2017, awarded with the National Prize “Escuelas Creativas” (Creative Schools) sponsored by Fundación Telefónica and Fundación Ferran Adrià; the workshop “Cardboard Project” jointly done with eífimerARQ at “Laboratorio de las Artes de Valladolid” (LAVA, City Council of Valladolid), which was shortlisted by the platform ArchDaily as one of the best 34 architectural designs created by Architecture; or the participation of “musiARQ” in Naukas at the theatre Teatro Calderón in Valladolid.

Conclusions

The success of this second edition of the IP, and the third edition of the Fair, as the numerous turnouts at schools or at the III Fair proved, confirms the demand of Architecture students in these initiatives. For this reason and for the previously stated significant decrease of technological vocations, this IP and all its activities are to be continued.

The strengthening of the working groups and the organised activities, apart from others thought by Architect students, bring to light the warm welcoming of this IP not only among current Architecture students but also among former ones and other ETSAVA groups. Taking always into account students, knowing the causes of this steady decline of vocations first-hand will allow us to take the pertinent measures in the short, mid and long term.

Appreciations

Ministry of Education Castilla y León (JCyL), Youth General Directorate Ministry of Family and Equal Opportunities, (JCyL) and Youth Council of the City of Valladolid: dissemination of workshops and activities. Assistance of the opening day of the Fair by the Minister of Education, Innovation and Educational Equality GD, Youth GD, Education Council of the City of Valladolid.

Parque Científico (UVA), body organiser of the Fair “Sustainable Science” and the Science Week.

Schools and High schools which took part in the Fair.

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