

# EDUCATIONAL INNOVATION IN ARCHITECTURE & ENGINEERING

*Advances in final projects and thesis*

Carlos Rosa Jiménez & Alberto E. García Moreno [Coords.]

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Advances in final projects and thesis

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# CONTENTS

- 9      **Introduction**  
Carlos Rosa Jiménez, Alberto E. García Moreno
- 12     **Celebrating architecture, enjoying education: a multi-format project  
(by land, air and sea... And networked)**  
Manuel Gausa Navarro
- 32     **A critical architecture**  
Francisco González de Canales
- TRANSGRESSION**
- 50     **Final degree projects in innovative architecture schools**  
Carlos Rosa Jiménez
- 60     **The right to the city as a fundamental approach for urban planning  
education: the case for final degree projects**  
Eva Álvarez de Andrés
- 66     **The audio-visual document as a complementary element of graduation  
projects in schools of architecture**  
Javier Boned-Purkiss, Alberto E. García-Moreno, M<sup>a</sup> José Márquez-Ballesteros
- 74     **Game versus project: An approximation to the approach, the place and  
the process of projects at the beginning and the end of an architect's education**  
Diego Jiménez López, Jorge Yeregui Tejedor, Luis José García Pulido
- 82     **Towards a radical pedagogy in architecture**  
Enrique España Naveira
- 88     **OPEN ETSAB. Experimenting from altered teaching**  
Celia López Bravo
- 94     **Research-action on the heritage object. Methodologies for approximation  
and teaching experiences at the final degree project course in the school  
of architecture of Seville**  
María Teresa Pérez Cano, José Manuel Aladro Prieto, Blanca del Espino Hidalgo,  
Daniel Navas Carrillo
- 100    **A Sleepless Night**  
Antonio Álvarez Gil, Fernando Pérez del Pulgar Mancebo

## TRANSVERSALITY

- 110 **What happened with bologna and technical studies?**  
Montserrat Palma Muñoz
- 118 **Timeline as analytic tool for investigating tourism evolution and development**  
Cynthia C. Perez, Enrico Porfido, Josep M. Vilanova Claret, Ricard Pié
- 124 **Editing of educational videos in manufacturing engineering with Open Source Software**  
S. Martín-Béjar, M.J. Martín, F. Martín, M.J. Cano, F.J. Trujillo, M. Lozano, J. Solano, L. Sevilla
- 128 **JAMSESSIONS: A flexible methodology to generate synergies between theory and practice in design courses**  
Juana Sánchez Gómez, Nuria Nebot Gómez de Salazar, María Jesús García Granja
- 134 **The definition of the indicators of Malaga's strategic plan as an excuse for learning with the curatorial model**  
Antonio Vargas Yáñez, M<sup>a</sup> del Carmen García Peña
- 142 **Experimental autonomous learning exercise in interior design. Dialogue between ideas from the academic realm and the real needs of the everyday environment**  
Raúl Fernández Contreras
- 148 **Collaborative methodology for the promotion of graphic expression as a professional tool**  
Víctor Miguel González Vera
- 154 **I Conference on mobility, public space and gender. Educating the outlook at the university level**  
Isabel Jiménez López

## TRANSDISCIPLINARITY

- 162 **Exploring the Avant-garde: analysis of constructivist heritage in Moscow through a BIM model**  
Fernando Agrasar Quiroga, Eloy R. Domínguez Díez, Luz Paz Agras, Zaida García Requejo
- 168 **Creative and experimental workshops in the discipline of architecture. Transfers between university, secondary education and training cycles**  
Nuria Nebot Gómez de Salazar, Antonio Álvarez Gil
- 174 **Case study: Monitorization of higrothermic comfort in a house after its sustainable refurbishment**  
Kusha Ghoreishi, Luis Parras, Alberto Fernandez Gutierrez
- 180 **The unhurried architect**  
María José Andrade Marqués
- 184 **Integration of bim methodology into the transversal teaching of architecture**  
Mercedes Aldeanueva Fernández, Alberto García Marín, M<sup>a</sup> Jesús García Granja, Jorge Barrios Corpa
- 190 **Teaching and research projects. Labpatio 2.12: a prototype modular home for applied experimentation**  
Alberto García Marín, Jorge Barrios Corpa, Juan Antonio Marín Malavé, Mercedes Aldeanueva Fernández
- 196 **Interdisciplinary experimental learning exercise between graphic and interior design. How to build and experience, approximations to the visual realm and the physical space**  
Raúl Fernández Contreras, Luis Alhama Maestre
- 202 **Innovative teaching methodology for landscape integration designs. Fissures in the city**  
Luis Machuca Casares

## **JAMSESSIONS:** A flexible methodology to generate synergies between theory and practice in design courses

Juana Sánchez Gómez  
Nuria Nebot Gómez de Salazar  
María Jesús García Granja



Figure 1. Image taken during a JAMSESSION during the 2016-17 academic year at the Escuela Técnica Superior de Arquitectura de Málaga

## 1 FRAMEWORK

Within the context of the architecture degree, there are many theoretical-practical subjects in which the methodology used does not make the relationship between theory and practice clear to the students, as some polls show.

In the degree project, this relationship between theory and practice is necessary throughout most of the design process from the beginning, with research into case studies that share strategies, conditions and characteristics with the design, finding tools to approach the setting, or looking into uses to manage a certain space or scale, among other approximations, to the end, with the aim of gathering the necessary technical data to develop the proposal construction wise. Given this, it seems logical that educational innovation in the degree project must focus on the search of methodologies that make this process more agile and efficient.

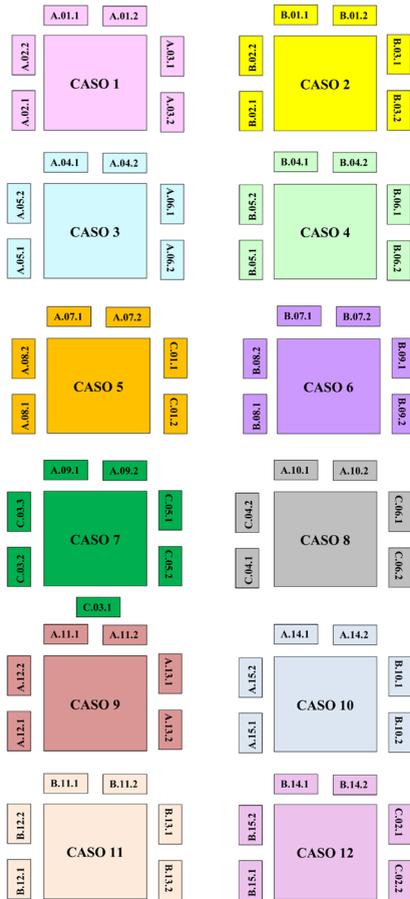
The JAMSESSION methodology follows this line. It has been experimented by the professors that have imparted the Urban Planning III course at the Malaga Architecture School during the last two academic years. Its success has made it exportable to all theoretical-practical subjects, and especially, to the degree project.

## 2 JAMSESSION GOALS

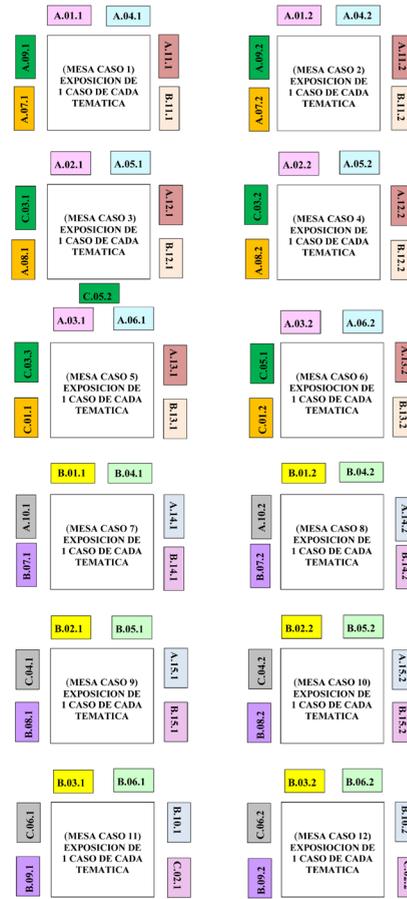
We were aware of the need of fostering research activities by the students in the educational program, orienting them towards establishing relationships between case studies and the design underway (theory and practice), especially given the indolence and disinterest with which the course had been carried out over the past years. Therefore, the goal was to overcome the weaknesses we had detected, by means of the following:

- Dynamizing the research process and its discussion.
- Making this activity take place earlier in the academic year so that it could really inform the design from the very beginning of the design process.
- Making the most out of Internet not only as part of the habit of contemporary society and a key communication tool, especially among younger generations, but also as a source of information for scientific research. Therefore, teaching how to find reliable sources and how to navigate the ocean of virtual data.
- Assuming and promoting the appearance of course work in the virtual realm while also highlighting the importance of dialectics and oratory, both of which are still crucial to communicate work in the academic and professional realms.
- Making communication more fluid and in accordance with the pace of visual communication, by extending and using social media insistently.
- Making the most out of the communications tools offered by the University of Málaga and its virtual campus.
- Persevering in cooperative work, based on the efficiency shown in the professional field of multidisciplinary and multicultural teams. Inclusion in each group of at least one exchange program student, to enable their integration into the class.
- Promoting self assessment in accordance with an assertive critique.

## organización mesas de trabajo fase1



## organización mesas de trabajo fase2



[A,B,C corresponden a los diferentes subgrupos de UIII]

Figure 2. Organization of groups in each class

## 3 METHODOLOGY

In accordance with the aforementioned goals, the methodology proposed for the JAMSESSIONS has two parts, two phases that are carried out in two class sessions respectively, available in the virtual campus with the following description:

### Phase 1:

- 1.1. Explanation by the professors of how the JAMSESSION works, of the time available for each phase and the assessment system.
- 1.2. Redistribution of the furniture in the class room in order to work around several computers, in teams of 6 students, on the case studies assigned by the professors to each group, accompanied by instructions. (See figures 2 and 3)
- 1.3. Designation, by voting, of a group moderator and a secretary per table. The moderator will be in charge of solving conflicts in the event of disagreements.

The secretary will be in charge of writing up the organizational document including the number and title of the case study, the names of the group members and the task assigned to each, to be carried out in the classroom and out of the classroom in Phase 2.

1.4. Analysis of the link that has been provided in relation with the case study assigned to each group, corresponding to one of six different themes regarding urban recycling.

1.5. Equal distribution of tasks related with the search of information regarding the case study, beginning with a debate around the case study, followed by the search of further information and other related case studies and a summary with all of this material—including conclusions—to be presented in Phase 2 in 15 minutes, deciding what tools will be used for the presentation, which has to be uploaded to the virtual campus before Phase 2 (Word files, Power Point presentations, Images, Videos, Audios...)

1.6. At the end of the class, the secretary of each group must upload onto the virtual campus both the draft of the document produced during the class and the organizational document described in step 3.

#### Phase 2:

2.1. Before the session begins, a representative of each group defined in Phase 1 has to upload onto the virtual campus the material that each component will use for their oral presentation of the case assigned in Phase 1.

2.2. Establishment of new groups of 6, made up of a representative of each theme—according to the diagram shown—so that each group includes a specialist of each theme. Each student has to present their case study to the other five members of the group, in a maximum time of 15 minutes.

2.3. Presentation by each member of the new group of the urban recycling case study analyzed by their group in Phase 1, responding to the questions and thoughts of the members of the group in a two-minute debate period after each presentation.

2.4. After the presentations, each student must download the Excell assessment template corresponding to their table from the virtual campus.

2.5. Each student must give scores from 1 to 5, without repeating the score, to the other components of the group. Only in the case of absence can points not be allocated. These scores must be based on the level of the presentations according to the criteria explained in the virtual campus.

The JAMSESSION was an intuitive idea of the professors. It was later verified by the existence of similar methodologies. It could be associated with a cooperative learning methods such as the Jigsaw method, proposed by Aronson in 1978<sup>1</sup>. This convergence may put into question the novelty of the method, but, on the other hand, it guarantees its success. The JAMSESSION methodology proposes the implementation of the generic strategy of the Jigsaw technique with a specific methodology in a practical course in the architecture school, with the support of contemporary tools such as the virtual campus of the University of Málaga.

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[ 1 ] Consultar Aronson, E. i col (1978). *The jigsaw classroom*. Beverly Hills: CA Sage

## 4 CONCLUSIONS

The success of the JAMSESSION during the 2015-2016 and 2016-2017 academic years, when it was put into practice, has been verified by the following observations: In General:

- a) Student participation has grown, and they pay more attention, given that it takes place in a short period of time (8 hours) and it is carried out mostly within the class room.
- b) Discussion in small groups made the students feel more secure and act more spontaneously in front of their class mates, also making them more sure of themselves when it came to orally presenting their ideas.
- c) The constant references made during the year to the case studies shared during the sessions, evidenced the discovery of theoretical-practical synergies. It also motivated students to continue researching, precisely due to the direct relationship between research and practice.
- d) The 24-hour debate forum of the virtual campus was used more intensely.
- e) It promoted the integration and socialization among students of different groups, nationalities or capabilities, favoring deeper ties with the entire class and reinforcing the self-esteem of weaker students, since they all become key players in the success of their group.

Specifically, for the degree project, it represents a the adequate methodology to minimize individuality and the feeling of aloneness that a student might feel when facing this task, as well as the optimal management of a data base that has been agreed upon by those who are doing the same project.

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Education is at the center of humanity's fundamental rights, it transforms our lives and it is the culmination of one of the basic aspects of our full exercise as such, contributing to the consolidation of peace, the eradication of poverty and the encouragement of sustainable development. As a fundamental right accessible to all, education must go hand in hand with quality and innovation. The role educators play is crucial in the way they generate innovative experiences that turn learning into a creative, dynamic, enriching and motivating process, producing tools which make possible a responsible and mature education that is committed to society.

In the branch of Architecture and Engineering innovation in higher education acquires even more relevance, since it has a significant impact on the improvement of the autonomy and motivation of students in a collaborative and knowledge transferring working environment.

This publication gathers methodologies, projects and experiences carried out in Architecture and Engineering Schools, showing the optimum results of innovative practices in learning practices. This material aspires to contribute both to the training of students and docents, while it also aims to generate debate and reflection regarding academic and professional practice and therefore introduce the necessary changes to guarantee a comprehensive and innovative education in accordance to the needs of the individual and our advanced society.



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