

**An Experience of PBL in the Learning of Urban Planning. Chair of Urbanism IIA,
FAUD, UNC, Argentine Republic**

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ABSTRACT

Within the framework of the CITYLAB LA "Engaging students with sustainable cities in Latin-America" Project, ERASMUS Program, this article reflects on the application of the Project-oriented Problem-Based Learning pedagogical method in the workshop work carried out by the Chair Urbanism IIA –Faculty of Architecture, Urbanism and Design, National University of Córdoba, Argentine Republic– in the first quarter of the school cycle 2017–, called “Urban-Territorial Plan for the Municipality of Villa Allende, Province of Córdoba. Scenario 2032”. An evaluative analysis of the results of this experience is carried out in relation to the teaching-learning process proposed by the Chair.

The Chair Urbanism IIA belongs to the 5th year of the Architecture Degree and its main objective is that students develop professional competences for the study and intervention of the contemporary city as an integral fact inserted in various territorial and contextual scenarios, from the paradigm of environmental sustainability.

Keywords: Learning, Urban planning, PBL method

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SOME CONSIDERATIONS ON PEDAGOGICAL AND ORGANISATIONAL ASPECTS OF THE CHAIR URBANISM IIA

The Chair Urbanism IIA aims to contribute to the graduate of the Architecture Degree achieving the knowledge, skills, competencies, abilities and attitudes required to practise their profession as an Architect-Urbanist. Therefore, the expected results emerging from the teaching-learning process are as follow:

1. Develop the professional competences for the research and intervention of the contemporary city as an integral reality, inserted within diverse territorial and contextual scenarios.
2. Understand the problems and challenges of urban realities in their cross-scale and multidimensionality and of the urban-territorial transformation processes.
3. Understand and manage the contents, processes, methods, instruments and actors of urban-territorial planning and of local management oriented to physical-spatial-environmental planning.

For these objectives to be achieved, a set of theoretical-conceptual and methodological-instrumental contents are developed, which are organised into two thematic axes: (1) the study of the city in its municipal territory and in its regional context, through a multidimensional and cross-scale approach to urban-territorial studies; performing the analysis of the problems and challenges of the city of the 21st Century; proposing theoretical approaches on the paradigm of environmental sustainability and providing basic notions of demography, urban economy and urban infrastructure; (2) urban planning intervention through urban-territorial management, planning and projection, through the implementation of various methodological approaches that incorporate techniques and instruments of the prospective approach and of strategic thinking, such as the formulation of future scenarios, the key diagnosis Strengths, Opportunities, Weakness and Threats, the identification of opportunity areas for strategic projects and the study of the strategies of the various stakeholders involved in the process.

It should be noted that these contents are a novelty and a challenge for students in the 5th year of the career since in the previous years, the themes of analysis and project intervention are of small scale –a plot, a block or groups of blocks and a small urban fragment–.

The academic year takes place in 25 days and 100 class-hours. The Subject is dictated in two shifts: morning and night. The Chair is made up of a team of seven teachers: senior lecturer, adjunct professor, and five assistant professors.

Annually some 250/300 students attend Urbanism IIA –125/150 per shift–. Each assistant professor has workshops of 40/60 students that make up groups of 3/4 people. An important fact is that 60% of the students come from other cities and towns in the province of Córdoba and the country.

On the other hand, physical space is limited: theoretical lessons are taught in auditoriums with a maximum of 90 minutes per chair; the assigned workshops have a very tight capacity for practices in relation to the number of students, and with a time of 4 hours each.

Characterisation of the Workshop of the Chair Urbanism IIA

Two practical works are carried out for the simulation of the exercise of the professional role as Architect-Urbanist referred to the planning, projection and urban management of municipalities, with the incorporation of knowledge and transdisciplinary practices, for their performance both in the public sphere and in the function of independent professional advisor: (1) *Metropolitan Córdoba in future scenarios. Urban and project guidelines*, whose objective is to reflect on the complex territorial processes of global occurrence; (2) *Urban-Territorial Planning Plans for small/medium-scale municipalities of the Province of Córdoba*, oriented to urban planning intervention and to the exploration of different urban-territorial planning and management methodologies; adopting as cases municipalities in the metropolitan context of Córdoba –8,000 to 30,000 inhabitants–. The objectives of this work are the following:

- Perform a simulated practice of the elaboration process of an Urban-Territorial Planning Plan considering the insertion relations in diverse territorial and contextual scenarios.
- Develop methodological alternatives for the elaboration of an Urban-Territorial Planning Plan.
- Elaborate an urban-territorial diagnosis from a multidimensional approach.
- Perform urban-territorial planning proposals by means of structuring and configuration strategies, key projects and regulation guidelines.
- Essay the management of an integral urban project, recognising key actors and the required urbanistic instruments.

Special features of the Workshop of the Chair Urbanism IIA 2017 in the context of the CITYLAB LA Project

In 2017, the practical work called "Urban-Territorial Planning Plan for the Municipality of Villa Allende, Province of Córdoba, Scenario 2032" was developed, in which a practice of integration was carried out between the project-oriented PBL method –modality of the University of Aalborg (Askehave, Linnemann Prehn, Pedersen, & Thorsø Pedersen, 2016)– and the pedagogical strategy of the Urbanismo IIA Chair (Sánchez, 2015).

To the workshop objectives outlined above, those provided in the CITYLAB Project, Erasmus 2017 were added: work from the sustainable cities paradigm and achieve the continuous involvement of local agents in the analytical and propositive stages of the urban-territorial planning plan (Fernández Güell, Collado Lara, Guzmán Araña, & Fernández Añez, 2016) included in the development of practical work, and that it only implied deepening the application of indicators of the environmental sustainability paradigm, and establishing greater communication with the key actors: officials and inhabitants of the Municipality of Villa Allende and professionals of the provincial level of the Metropolitan Planning Institute

(IPLAM) within the framework of the guidelines proposed in the Master Plan of the Sierras Chicas.

**VALUATION ANALYSIS OF THE RESULTS OF THE EXPERIENCE OF
APPLYING THE PBL METHOD OF THE CITYLAB LA PROJECT IN THE
2017 WORKSHOP WORK OF THE CHAIR URBANISM IIA**

The experience developed in 2017 allows the following evaluative analysis of the application of the PBL method in relation to the pedagogical-didactic proposal that is developed in the project workshop of the Chair Urbanism IIA.

Regarding teaching-learning strategies

The PBL method proposes to work with real-life problem situations from various perspectives and interpretations, such as learning engines (Nunez, Jonasen, Skov, & Ryberg, 2016). The Chair Urbanism IIA addresses the problems and challenges of the sustainable urban-territorial planning of various municipalities of the Province of Córdoba through the simulation of the development of an urban plan, with scales and challenges similar to those of the places of origin of the students. In this way, it is intended to provide them with the skills and abilities for their future professional work as an Architect-Urbanist.

PBL method assigns a key role to the teacher in the design of the problem (Restrepo Gómez, 2005). In this sense, the issue-problem is raised by the Chair, which carries out a profuse preliminary work linked to the search for information and preparation of documentation and cartographic material, and proposes an indicative methodological guide. All this material is shared through a Wix website of the Chair Urbanism IIA (<https://urbanismo2a.wixsite.com/urbanismo2a>). This is necessary because the work is carried out in 12 lessons (48 hours).

The PBL method considers that the student has the responsibility to learn, to identify knowledge gaps and to define a strategy to achieve that knowledge, and that the teacher must be a facilitator and a guide (Nunez et al., 2016). The Urbanism IIA workshop aims to achieve this involvement of students, and the assistant professor fulfills a guiding role, although some general guidelines are established based on the guides of practical work, because the massivity of each commission and the novelty of the work require it. Therefore, the teacher, from his role as facilitator of the teaching-learning process, activates the class through questions, suggests readings, case analysis or other resources to obtain information, answers specific questions, and uses different techniques to assess advance by teamwork, individual or of the entire group of students.

The Chair Urbanism IIA shares with the PBL method the premises that propose that knowledge is built and not transferred, that such construction requires individual, group and context

interaction, and to achieve critical thinking, reflection and communication; that work has to be as a team for collaborative and cooperative learning (Nunez et al., 2016). Each group of 3/5 students of the Urbanism IIA workshop must present their methodological proposal based on the activities of the general practice guide; seminars are held to reflect on the results achieved in the various stages of work with oral presentations based on presentations in power point.

The PBL method, in relation to the CityLab Project, raises the need to identify, select and assign external actors and manage the relationships between them and students (Harmer, 2014). These tasks must be carried out by the Chair, prior to the course development, because of the limited times of the work. On the other hand, the linkage with external actors is carried out in a few instances – since the municipalities with which we work are within a radius of 15 to 50 km from Córdoba Capital–. A key instance is a trip organized by the Chair to make a survey of the city and make contact with some officials of the Municipality and inhabitants of the town; another instance is conducting a talk-debate at the headquarters of the faculty with the participation of some officials in which they expose the problems of their municipalities and where students make various queries. To complete the linkage with actors, in the Plan Management Stage, in a class –4 hours–, the role playing technique is developed and each group of students assumes roles of the key actors for the recognition of their various performance logics, the relations of force and influence between actors, the convergences and possible divergences regarding proposals- with the conceptual basis required for the argumentation of their positioning.

Regarding physical space, times and organisation

In a public university, massive and free, there is little availability of well-designed and equipped workspaces for different groups of students. There are only the workshops assigned for each teacher with commissions of 40/60 students, and at the assigned times.

Regarding the times of students, they are limited to the amount of subjects they attend per week, with their own requirements for partial evaluations and the carrying out of various practical works, simultaneously with the work in Urbanism IIA.

Therefore, in our context, the application of all the precepts provided by the PBL methodology cannot be carried out directly, but some aspects must be adapted to local conditions and/or limitations.

Regarding the valuation and assessment

One of the evaluation strategies of the PBL method refers to self and peer assessment, and another, to the importance of evaluating activities in the real world context (Nunez et al, 2016) and with the participation of external professional actors to simulate as far as possible a professional environment. In the Chair Urbanism IIA group presentations are mainly applied: in a seminar-workshop, all groups of students explain their work through the presentation of two panels in which they have synthesized the process of the development of the plan. In the

2017 experience, this was done without the participation of external professional actors, since their participation would have required their presence for 8 hours –4 per shift–.

Before the seminar-workshop, the peer evaluation methodology is applied that allows students to construct a critical discourse of their own work based on “seeing in the other”.

IN CONCLUSION

Based on all of the above, it can be stated that the experience of applying –with the necessary adjustments set forth–, the PBL methodology has made it possible to reinforce and complement the pedagogical-didactic proposal of the Chair Urbanism IIA. In addition, this experience allowed us to test its organisational flexibility, which was able to be adjusted without major difficulties both to the objectives of the CITYLAB Project and to the tasks required for its achievement.

Collaborative learning is a necessity in the context of massiveness of the FAUD, UNC, so that in the Chair an environment is generated that encourages reflection, exploration, exposure, experimentation with ideas and methods, oral, written and visual communication. The student as the protagonist of learning, and peer collaboration is essential in this area of collective knowledge construction.

The approach of the same problem from different perspectives is another aspect of the PBL method proposal coinciding with the multidisciplinary approach proposed by the Chair Urbanism IIA to the issues it addresses, by incorporating basic concepts from other disciplines, the realization of multidisciplinary talks, with municipal and provincial officials and role-playing technique.

The issue of environmental sustainability is key in the diagnostics and proposals of urban-territorial planning in each municipality-case that is addressed, both from the approach held by the Chair throughout its history, and from the proposal of the Project CityLab.

On the other hand, there are two key issues that challenge the implementation of the PBL method from the pedagogical point of view in a public, massive and free university: that related to the roles and times that teachers and students must allocate according to the responsibilities and tasks proposed by the method, as well as the availability of the physical spaces and resources required.

Finally, in line with the Problem-Based Learning Method, the pedagogical-didactic proposal of the Chair Urbanism IIA is oriented so that the students are really the key actors in the construction of their knowledge to solve a certain situation, which allows them to develop skills,

abilities, competences and attitudes that they will require in their professional future as an Architect-Urbanist.

References

- Askehave, I., Linnemann Prehn, H., Pedersen, J., & Thorsø Pedersen, M. (Eds.). (2016). PBL - Problem Based Learning. Aalborg Universitet Rektorssekretariatet. Retrieved from http://www.pbl.aau.dk/digitalAssets/269/269243_148025_pbl-aalborg-model_uk.pdf
- Fernández Güell, J. M., Collado Lara, M., Guzmán Araña, S., & Fernández Añez, V. (2016). Incorporating a Systemic and Foresight Approach into Smart City Initiatives: The Case of Spanish Cities, *Journal of Urban Technology*, 23:3, 43-67, DOI: [10.1080/10630732.2016.1164441](https://doi.org/10.1080/10630732.2016.1164441)
- Harmer, N. (2014). Project-based learning. Literature review. Retrieved from https://www.plymouth.ac.uk/uploads/production/document/path/2/2733/Literature_review_Project-based_learning.pdf
- Nunez, H. C., Jonasen, T. S., Skov, M., & Ryberg, T. (2016). *Deliverable 2.1: Data-driven PBL model*. Retrieved from <https://pdfs.semanticscholar.org/aa45/c5d1cd31453cf357c0a2aa56772edb3a314d.pdf>
- Restrepo Gómez, B. (2005). Aprendizaje basado en problemas (ABP): una innovación didáctica para la enseñanza universitaria. *Revista Educación y Educadores*, 8(8). Retrieved from <https://educacionyeducadores.unisabana.edu.co/index.php/eye/article/view/562/654>
- Sánchez, M. (2015). *Propuesta Pedagógica. Concurso Profesor Titular Cátedra Urbanismo IIA de la Facultad de Arquitectura, Urbanismo y Diseño, Universidad Nacional de Córdoba* [Pedagogical Proposal for the Contest of Professor Holder of the Urbanism Chair IIA. Faculty of Architecture, Urbanism and Design. National University of Cordoba. Cordoba]. (Documento inédito). Universidad Nacional de Córdoba. Argentina.