POLITECNICO DI TORINO
Repository ISTITUZIONALE

The Crowdmapping Mirafiori Sud experience (Torino, Italy): an educational methodology through a collaborative and inclusive process

Original
The Crowdmapping Mirafiori Sud experience (Torino, Italy): an educational methodology through a collaborative and inclusive process / Coscia, Cristina; DE FILIPPI, Francesca. - In: JOURNAL OF PROBLEM BASED LEARNING IN HIGHER EDUCATION. - ISSN 2246-0918. - ELETTRONICO. - 8:1(2020), pp. 86-98. [10.5278/ojs.jpblhe.v8i1.2648]

Availability:
This version is available at: 11583/2713941 since: 2020-10-30T10:03:40Z

Publisher:
Aalborg University Press

Published
DOI:10.5278/ojs.jpblhe.v8i1.2648

Terms of use:

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

Publisher copyright

(Article begins on next page)

12 October 2024

Journal of Problem Based Learning in Higher Education

VOL. 8, NO. 1, 2020 – Page I-V

Problem Based Learning for Sustainability and Sustainable Cities

Tom Coppens, Elena Fregonara, Andrés Felipe Valderrama Pineda, Jette Egelund Holgaard, and Patrik Kjærsdam Telléus *

INTRODUCTION

Dear Reader,

Problem Based Learning (PBL) has been stressed as a pedagogical approach, which is suited for engaging students actively in addressing complex real life problems. Taking into consideration the complexity and urgency of the sustainability challenge, PBL have gained increasing attention in education for sustainability.

This special issue is dedicated to the relationship between PBL and Sustainability and includes perspectives and proposals on how to engage students in interdisciplinary educational activities for sustainability with specific focus on PBL research and experiences related to sustainable cities. The research papers and cases will illustrate how PBL as a pedagogical approach can support students engagement and learning to create change on a system level, and also how the interdisciplinary and participatory approaches in urban planning can inspire PBL and especially the problem analysis.

The idea for this special issue came from participants of the Project "Citylab - Engaging Students with Sustainable Cities in Latin-America", co-funded by the Erasmus+ Programme of the European Union (www.citylab-la.eu). The aim of this project was to enhance the quality of Higher Education Institutions in Latin America by increasing their capacity to do Problem Based Learning. The main effort was to increase active, integrated and constructive learning

* Tom Coppens, Architecture, Interior Architecture and Urban Department, Antwerp University, Belgium
Email: tom.coppens@uantwerpen.be
Elena Fregonara, Department of Architecture and Design, Politecnico di Torino, Italy
Email: elena.fregonara@polito.it
Andrés Felipe Valderrama Pineda, Department of Planning, Aalborg University, Denmark.
Email: afvp@plan.aau.dk
Jette Egelund Holgaard, Department of Planning, Aalborg University, Denmark
Email: jeh@plan.aau.dk
Patrik K. Kjærsdam Telléus, Department of Health Science and Technology, Aalborg University, Denmark
Email: pkt@hst.aau.dk

methods, assuming a student centered approach, emphasizing on learning to learn and learning by doing, and breaking with traditional teaching methods such as ex-cathedra lectures.

In order to introduce and spread PBL, the partners (12 Latin American and 5 European) worked on specific problems through interdisciplinary approaches, with the support of campus teams represented by pools of teaching staff, administrative staff and policy makers from the different faculties. The partners worked on typical urban problems, related to architecture, urban planning, conservation, energy and climate change, poverty and crime, employment, water management and others similar challenges, which are in general complex, and wicked problems in need of an interdisciplinary approach. Moreover, the selection of urban problems, and the interdisciplinary approach, have provided the opportunity to strengthen the relation between universities and external actors such as urban governments and community associations.

At the end of the project, the Citylab LA project consortium organized a final conference "PBL for Sustainable Cities" in Bogotá, Colombia. This conference had several aims: to disseminate insights and stimulate academic discussion on problem based teaching methods, to present the work of the students in the PBL modules, to present the results of a students' competition after the selection operated by an interdisciplinary jury involving academics and professionals. Then, the conference aimed to involve not only the partners of the Citylab LA project, but also a broad range of teachers in Europe and Latin America to share ideas and experiences on problem based learning.

This academic conference was characterised by a wide range of inspiring lectures, discussions and networking opportunities with experts in the field of Problem Based Learning, researchers and key actors in Sustainable Cities. It has been an important opportunity to share Problem Based Learning research and experiences related to the sustainable development of cities with international colleagues who are actively involved in innovative teaching methods and sustainable cities.

This special issue presents selected and developed papers from this academic conference to further disseminate Problem Based Learning research and experiences relate to the Citylab LA project. In this way, this special issue is targeted to an audience, who are actively involved in PBL and interested in the dialectic relationship between PBL and education for sustainability.

The issue contains ***two research papers*** and six cases all related to PBL and Sustainable Cities representing a variety of different synergies (see the following table for overview).

Author country	Keywords	Type of publication
Belgium, Colombia, France and Denmark	Cross-university experiences, management of change	Research paper
Belgium and Denmark	World Café technique, qualitative insights	Research paper
Venezuela	Design Studio, Architecture and Urban planning programme	Case
Venezuela	Urban design Course, PBL implementation in workshop	Case
Argentina	Progressive PBL implementation in interdisciplinary urban areas	Case
Italy	Crowd mapping, use of ICT, community engaged learning	Case
Argentina	PBL implementation in urban planning workshop	Case
Mexico	PBL implementation across programs, interdisciplinarity	Case

The first paper is written by seven authors from Belgium, Colombia, France and Denmark and presents cross-institutional research results from the City-Lab project (Coppens, Pineda, Henao, Rybels, Samoilovich, Jonghe, & Camacho). The purpose of the paper is to investigate challenges and opportunities during the implementation of problem based learning in 12 Latin American universities based on the experience of the Citylab LA project. The authors as well as external partners monitored the development in the project and methods includes face-to-face meetings, surveys and focus group interviews. The authors conclude that critical factors were related to the role of the project leader in the organisation, the flexibility of the implementation and cultural differences. Furthermore, the results of the survey showed that the teachers believed that the didactic methods of their Citylab modules significantly contributed to the stimulation of critical thinking and complex problem solving. Further diffusion of PBL on the institutions depended critically on creating support from the top academic administration of the university.

The second paper is written by four authors from Belgium and Denmark (Camacho, Rybels, Coppens & Pineda). The purpose of the paper is to investigate the World Café Technique as a mean to support problem based learning by taking a qualitative approach. The authors identify three aspects of the implementation process of PBL in Higher Education Institutions that can be facilitated through the World Café technique: (1) understanding the principles of PBL through engaging in a constructive dialogue, (2) fostering critical reflections about teaching and learning practices, and (3) changing the organisational culture by promoting collective sense-making and the construction of meaning. Furthermore, the empirical data showed that the World Café technique helps to reveal assumptions, beliefs, and understandings about teaching and learning in general and about PBL in particular. For readers who want to experiment with the World Café technique in a PBL perspective the paper offers an introduction and framing of the technique as well as quotes providing a sense of practice.

The special issue furthermore includes six ***cases*** that exemplify different PBL practices when studying sustainable cities in an action oriented and participatory approach.

The first case is written by five authors from Universidad Simón Bolívar in Venezuela (Soonets, Olaizola, Mena, Dorbessan & Micucci). The purpose of the paper is to show how students in architecture define themselves and the role of architecture together with design methodology and technical knowledge in learning process based on problem solving. The authors of the paper use different approaches in the same institutional context to explore the similarities and differences between Design Studio Learning (DSL) and PBL. The authors exemplifies how DSL can be seen as a type of PBL, but also stress that the PBL approach adds another dimension to DSL and seems to improve the performance of students.

The second case provides another perspective from two authors from Universidad Simón Bolívar (Vasquez & Lara). The purpose of the paper is to show how PBL was used in an urban planning workshop in the third year of study. The authors outline and exemplify the PBL process in the workshop in three steps including 1) problem diagnosis (from complexity and sustainability), 2) prospective (scenarios, concept and strategic lines) and 3) formulation of urban proposals. The authors conclude that compared to the more traditional method in Architecture, PBL methods promoted capacity building for critical analysis, teamwork and consensus building in addressing complex problems of the city.

The third case is written by nine authors from Argentina (Fernández, Orduna, Bonvecchi, Brignone, Carbone, Constantinidis, Otero, Ciarciá & Souza). The purpose of the paper is to show how PBL has been implemented across interdisciplinary areas including urban morphology, urban planning, project development as well as public and institutional relations. The model presented outlines a three-year process, where these areas are combined. Furthermore, it is exemplified, how PBL is integrated in each stage together with a presentation of the experiences in doing so. The authors conclude that PBL increased the students responsibility and self-assessment, allowed more free and wider analysis and succeeded to integrate a range of disciplines.

The fourth case is written by two authors from Italy (Coscia & De Filippi). The purpose of the paper is to show how a project, not born as a PBL initiative in the first phase, developed a problem based and community engaged learning approach. The project used as case example is the Crowd Mapping Mirafiori Sud (CMMS) pilot project, carried out by the Politecnico di Torino (Italy), which besides the academics (students and professors) also includes local institutions and the community in a participatory and inclusive process. This story of this project is framed and exemplified to emphasize the adapted PBL approach. The authors conclude that the combination of problem based and community engaged learning proves to be strategic in the implementation phases of projects, especially in terms of mapping interested parties and connections between networks of actors.

The fifth case is written by five authors from Argentina (Sánchez, Cebrián, Repiso, Torres & Ruiz). The purpose of the paper is to reflect the application of a Project-oriented Problem-based pedagogy in an urban planning workshop. The objective is that students develop professional competences as an Architect-Urbanist including an understanding of the problems and challenges of urban realities. Challenges are pointed out regarding adaptation to new roles and time allocated for both teachers and students. The authors however also conclude that the experience applying the PBL methodology reinforces the pedagogical approach in terms of collaborative learning, perspective shifting and realization of the multidisciplinary nature of the planning process.

The sixth case is written by three authors from Mexico (Aparicio, Hinojosa & Zapata). The case describes how different academic programs from the Autonomous University of Nuevo Leon (UANL) were integrated in a learning unit using PBL methodology. The case tells the story from the initial introduction to PBL, to PBL experimentations in different pilot groups addressing different urban areas. Based on this case, it is concluded that students favour working in interdisciplinary teams, but it challenged the teachers to monitor students learning process and cope with a different time distribution of activities. Furthermore, it was observed that when contextual learning is relevant for students, as in the PBL courses, there is a great potential for projects to add value beyond the intended goals for learning.

We hope that you will enjoy the reading.