

## LEARNING SPACES AND STUDENTS' ENTREPRENEURSHIP: THE STRATEGY FOR THE SUCCESSFUL IMPLEMENTATION OF AN E-LEARNING CAFÉ IN CAMPUS U. PORTO

Lígia Ribeiro<sup>1</sup>, Maria Pinto<sup>2</sup>, Pedro Neto<sup>3</sup>, Andrea Vieira<sup>4</sup>

<sup>1</sup>Universidade do Porto, Rectorate, Praça Gomes Teixeira, 4099-002 Porto, Portugal, lmr@reit.up.pt.

<sup>2</sup>Universidade do Porto, Rectorate, Praça Gomes Teixeira, 4099-002 Porto, Portugal, mariapinto@reit.up.pt.

<sup>3</sup>Universidade do Porto, Faculty of Architecture, Rua do Gólgota, 215, 4150-755-Porto –Portugal, pleao@arq.up.pt.

<sup>4</sup>Universidade do Porto, Faculty of Architecture, Rua do Gólgota, 215, 4150-755-Porto –Portugal, apvieira@arq.up.pt.

### Abstract

Universities are facing demanding challenges due to the rising of life-long-learning needs and the responsibility to accommodate new and emerging technologies in the learning process. On the European Higher Education Area “learning” takes a primordial limelight. Also, in a globalized society where information and communication technologies play a major role, employers require higher education graduates not only to be excellent in communication and in the use of information, but also to think creatively, to be able to innovate, cooperate and compete across borders.

The spatial configuration of learning spaces and the facilities and initiatives they accommodate are rather important to provide effective environments for learning, where diverse studying and cultural activities combine, motivating students to become more knowledgeable and equipped with the interdisciplinary and high level skills the 21st century society requires.

The main objective of this work is to present and discuss the contribution of the e-Learning Café project of the University of Porto and of the successful implementation of its program, focused on diverse pedagogical and cultural activities, to the acquisition of students' attitudes and skills essential to handle professional relationships and to facilitate learning, personal development and entrepreneurship.

**Keywords:** Learning spaces program, life-long-learning, ICT for teaching and learning, personal development, entrepreneurship.

### Introduction

University of Porto (U.Porto) is a centenary public research higher education institution in Portugal. Its ongoing mission is focused on the generation of scientific, cultural and artistic knowledge, the high level education strongly anchored in research, the economic and social value of knowledge and the active participation in the progress of communities in which it operates. U.Porto serves more than 31,000 students, 2,300 teachers and researchers and 1,700 non-teaching staff. Offering more than 600 training programs - including undergraduate, masters, integrated masters, doctoral programs, continuing education and specialization courses, U.Porto provides higher education programs in all major areas of knowledge, in line with the Declaration of Bologna. The University is also recognized internationally, due to its scientific research and technological development activities, being part of international reference rankings and being referred to as the best Portuguese university by the large majority of them. The University encompasses 14 schools and 1 business school. U.Porto is also connected to about 70 sectorial, multidisciplinary and/or interdisciplinary research, development and innovation institutes.

In face of the geographic distribution of its premises within the city of Porto and to its decentralized model of governance, U.Porto developed a strategy to reinforce cohesion, the sharing of resources and services, the internal mobility of staff and students and the enhancement of several forms of group interaction, for both socializing and studying activities, promoting the interdisciplinary exchange of

knowledge and experience. Information and Communication Technologies (ICT) play a major role in this strategy.

### **The e-Learning Café project**

The e-Learning Café project of the University of Porto started in 2006-2007 and is an important part of the U.Porto program to provide effective environments and facilities for learning and studying.

The overall aim of this project is to create a set of new dynamic learning spaces that integrate social and study activities and constitute a strategic relational dimension for all the people implicated in some way with U.Porto. The general objective is to promote different types of communication among the users of university facilities, using ICT as the best means to structure and organize the university space [1].

In consequence of the work developed, the University opened in January of 2008 the first e-Learning Café in Portugal, the e-Learning Café of U.Porto Asprela campus. The new space is the upgrade of an old University building into a new social and study space, taking advantage of ICT functionalities by integrating them into the proposed design and by using them as active communication tools within the design process [2] [3].

The space is open on a 24x7 basis to students, teachers and other members of the higher education academic community, not restricted to U.Porto. The various types of communication and events developed at the e-Learning Café - such as readings, music, cinema, sports, exhibitions, theatre, audio and video, social and cultural gatherings and workshops -, the active participation of digital technologies in these initiatives and in the actual structure of the space, linking to its virtual space (<http://elearningcafe.up.pt>), has proved to provide a favorable setting to achieve the proposed aims of encouraging the students to exchange ideas and knowledge, fostering interdisciplinary and innovation.

Users' response to the e-Learning Café of Asprela is collected and analyzed each year. A questionnaire [4] was designed to gather information about what people understood and thought in respect to the space configuration - cafeteria, multimedia space, chill out space and working space - and corresponding website, resources availability and events' annual program. The encouraging answers already lead to the extension of the project and a new e-Learning Café, located on a second campus of U.Porto is now being constructed, the e-Learning Café of U.Porto Botanic Garden.

### **Strategy and model**

A significant amount of diverse information and debate regarding the importance of space and spatial design principles for learning has been taking place since some years ago. A comprehensive bibliography is available, a few examples of which are the "Designing Spaces for Effective Learning, guide for the 21st century" by JISC, several EDUCASE studies [5], [6], [7], [8] and the OECD/CELE Pilot Project [9].

The design principles taken into consideration for the e-Learning Café project comprise stimulating environments, places for group learning, linking indoor and outdoor places, public space, changing displays, flexibility, active/passive places, safety, resources availability and the community as a learning environment [10].

The strategy and adopted methodology for the U.Porto e-Learning Café project have as fundamental pillars:

- (1) Anticipation
- (2) Imagination
- (3) Implementation
- (4) Monitoring
- (5) Program

Anticipation – thinking that social places should be designed in such a way to encourage people to use them also as learning spaces and that ICT plays a very important role in the design of these places;

Imagination – using furniture, flooring, lightning and other architectonic elements to create a strong identity, but giving a certain freedom to the users of these spaces to personalize them in different ways;

Implementation – this meant, besides other things, involving a lot of different people in the project, taking in account the sustainability of the program and integrating ICT functionalities in the process mainly by using them as active communication tools;

Monitoring – the use of the e-Learning Café and its website is being monitored for receiving information on how this space is perceived and utilized by the higher education population.

Program – the most distinctive characteristic of the e-Learning Café project is the development of a program build on a set of activities to implicate the students and aimed to design a rich, diversified and stimulating space that would encourage social and study activities.

The results already achieved confirm that the methodology followed has a great potential for stimulating innovation and entrepreneurship.



Fig. 1. e-Learning Café in Asprela (cafeteria, chillout space, multimedia room, work room)

## Implementation

The learning process and its practice are increasingly understood in the educational universe to be taking place in other locations besides the traditional educational spaces. In the book “Educating the Net Generation”, Malcolm Brown [11] defines as places of learning all the spaces where learning takes place, the real to the virtual classroom to the room “chat.” In “Assessment: The Key to Creating Spaces That Promote Learning,” Sawyer Hundley and Molly Schaller [12] propose a series of criteria and a method for finding measurable factors to assess the complex interactions between universities, students, pedagogy, community, academic research, program planning and learning spaces.

Herman Hertzberger [13] argues that spaces, in general, are more the product of collective appropriation of informal activities.

In recent years, many universities are building or transforming spaces to host functions where study and informal learning are mixed together, encouraging several types of group interaction and socialization, where ITC is embedded.

Examples that reflect some of the considerations and concerns expressed by the authors in the cited bibliography might include the Saltire Centre, at Glasgow Caledonian University, Queen Mary University Blizard Building in UK, Queensland University Interdisciplinary Learning Centres, Collaborative Learning Centre at University of Melbourne, Rolex Learning Centre of Ecole Polytechnique Fédérale (EPFL) in Lausanne, among others.

In Portugal an increasing number of activities related to the quality of teaching spaces are underway. A clear example is the “School Park” in the context of the Governmental Modernization Program for the

Secondary Schools. Within this framework various actions highlighted recently in the International Seminar «Doing School», which focused on the theme of School Architecture, are noteworthy. In particular Herman Hertzberger contribution that focused the importance of the schools' physical space and its quality for the success of the teaching-learning process.

The University of Porto and its Faculty of Architecture started in 2006-2007 a research project called "Study and Socializing Spaces with Strong ICT Integration". So far the main outcomes of this project, besides a significant number of research papers about these issues, were the architecture and construction plans of the e-Learning Café of U.Porto Asprela campus and its monitoring [1] [4]. A very significant aspect was also the initiation of a study branch about learning spaces in the context of the Research and Pedagogical Intervention Working Group of U.Porto. This interdisciplinary group is based on the Faculty of Psychology and Education Science of U.Porto and the main vectors of its activity are (1) methodologies and environments for teaching and learning, (2) pedagogical framework for online teaching and learning in higher education, and (3) relationship between physical spaces in schools and the dynamics of interactivity and sociability. Several training programs were organized by this group for the academic community. These activities, together with the e-Learning Café results, implied a new awareness within the academic community about the importance of the design of learning spaces and consequently its fundamentals were considered already for the renewal of several library spaces within U.Porto. The success of this ongoing research project is also apparent by the decision of the University of Porto to build a new e-Learning at its Campo de Alegre campus, in the Botanic Garden premises.

At the e-Learning Café of Asprela students take an active role on the configuration of the space. This is so because the function of each space can be adapted to the occasion creating, in this way, a new dynamic and interaction by using different furniture and light. All these changes and the dynamics of those spaces sustain the social and spatial importance of informal spaces. More than ever, learning nowadays happens outside the classrooms and of the classes' schedules. With the increase in collaborative and group work, students are learning in small groups outside the classroom, using spaces that foster and allow the group work and interaction between them in new ways. ICT has also a leading role in changing the learning spaces in many ways. At the e-Learning Café different shapes of tables are available favoring group or independent work. Pedagogically the diversity and facility to adapt the physical space for each circumstance is very important for students as well as for teachers. Students and teachers place a high value on the e-Learning Café easiness and freely dynamics they are able to create.



Fig. 2. Working area and ti's multiple ways of use

Students prefer comfortable spaces, with natural light or individual lamps when needed, which help them to concentrate and work without distractions, but they also appreciate spatial configurations where they can exchange and debate ideas and work with their friends and peers. The availability of some elements of comfort like puffs, where they can relax, as well as areas to eat/drink are also very important for allowing the right balance between study and social activities.



Fig. 3. Find and adapt the best spot

One other important aspect highly appreciated is the integration of ICT all around. The transparent and free wireless connection, the system for projections and all the Internet terminals and laptops available are intensively used.

Technology is not, exclusively, an attribute of contemporary architecture, but is inherent in its concept and has always been among its deepest concerns. In fact, nowadays, technology is no longer understood only as a tool to answer to specific problems, but as a reality in itself that is present in all areas of human activity. It has revolutionized our perception of space and of ourselves, assuming a central role in how we understand and relate with the world around us [14].

### Program

The e-Learning Café of Asprela has a nontraditional schedule, it is open all year, 365 days, and throughout the year the opening hours are adapted to the needs of the users. Regular hours are the seven days of the week, from 10 a.m. to 4 a.m., but during examinations periods the space is always open, seven days a week - 24 hours, having security all night.

The e-Learning Café is mainly a place to stay, meet others and feel comfortable, were the design of the furniture and the arrangements of tables are cozy and relaxing. Nevertheless this space is also a place to communicate and socialize. To enhance these soft skills, several activities are proposed throughout the year. Usually activities are planned for the beginning of the semesters, the time par excellence when students are more available to do other things, so they can benefit of the e-Learning Café program. All the activities are free of charge and open to all the academic community. The only limitation is space available, as the areas where activities usually take place are not very large.

To respond to the need of preparing students to achieve increasing levels of communication and collaboration skills and get in touch with excellence superior and significant results, the e-Learning Café of U.Porto brought up the “Show yourself” initiative, which is captivating students, researchers and professors. This activity is mentioned in this work as an example of the importance of this kind of event for the acquisition of knowledge, where students and professors fill comfortable in sharing and discussing diverse subject matter.



Fig. 4. A different configuration for each activity

The main goal of the "Show yourself" initiative is to bring to the e-Learning Café work developed in different research units of the University, namely the work coming from the Young Researchers Project of U.Porto. Furthermore, these events aim to contribute to a better understanding of the research work done by different groups of students who also use this space to learn and socialize. The idea behind "Show yourself" is thus to create a positive and strong dynamic around the "e-Learning cafe", where it assumes a role of "showcase" of these activities and of the University.

The "Show yourself" initiative includes the invitation of researchers from different areas of expertise to conduct lectures for students (public e-Learning Café) and promote entrepreneurship.

An example was the session with Around Knowledge, a startup company created by three former U.Porto students. These researchers have different backgrounds and this fact was one of the strong points of the session, as they explained the importance of working in multidisciplinary teams and how this impacted on their company. The final product of the session was the launching of an application for smartphones' specifically developed for the e-Learning Café. The goal for this session was achieved as the public, mainly students from different curriculum areas - arts, engineer, and science among others - , perceived the importance of multidisciplinary teams to develop successful products and services for the market.

Another example was the session with the research group of the project "Sem+nem - moving houses". This session was particularly interesting, as the team concentrated on very important aspects of sustainability and on a vision of the future development of construction. In parallel they brought some models that the students could touch, helping them to understand how the concept works.

This project takes place on the vanguard of Architecture and Engineering, pursuing the concept of "house as a living element", adapting and offering the best quality of the inhabitant's life. A dwelling that interacts with the environment and solar luminosity variations, recreates at each moment a new interior and exterior space, adapting itself to the daily routine, changes its appearance during the day, follows the sun's course, and feeds from it. The impact of the session was mainly the understanding of the key steps to make an idea work. The need of planning and forming the right team with different expertise was perceived as crucial, even when the idea appears to be almost impossible.

We invited also to the e-Learning Café the OSTV channel. The OSTV is a global and unique way to make TV, where most of the contents arrive through an international network of collaborations. It's a channel open to all creators and artists. During the session, the first Creative Camp was launched. Two weeks of intensive creative workshops and art work, in a village at the northern of Portugal where students of all areas of knowledge experiment and learn in a different way. Several of the students that attended the session at the e-Learning Café were interested and attended the Creative Camp.

More recently we had at the e-Learning Café a very interesting exhibition. We invited one of the teachers from the Faculty of Fine Arts to work with the students the idea of using Post-it's as an art support, being the space of the e-Learning Café the backing for the narrative of this work. The idea was to maximize its potential as a vehicle for interdisciplinary communication.

During drawing classes art students worked in one or more 8cm<sup>2</sup> post-it papers (with the e-Learning logo as a watermark). All individual or sets of post-it's were displayed on the walls of the e-Learning Café composing a giant message, that took many forms, a drawing, a word of a visual narrative, a story.

The exhibition was not static, and it took the personality of the post-it, people could rearrange the small pieces of paper, making new compositions, they could add new post-it's and at the end, after two months of having the walls covered with all this art works we invited the academic community to move the post-it's outside of the e-Learning Café, so they could bring them and use them elsewhere as they desired.

## **Looking ahead**

The increased number of students using the e-Learning Café of Asprela encouraged us to launch a competition for proposals aiming the design of a program for the outer space of the building. The main goal was to provide a solution for a coverage area, located on the back patio of the building, extending the e-Learning Café concept outdoors and making possible the use of the garden for studying, working

and for cultural activities, taking into consideration the arrangement of all the outside space surrounding the building.

This competition was open to teams of students involving at least one student from the U.Porto Faculty of Architecture, another from the Faculty of Fine Arts and a third one from the Faculty of Sciences - Degree in Landscape Architecture.

The awarded proposal, named U-thinking, was designed as an inflatable cloud that helps shelter. Its structure provides the necessary shade and protection from the humidity, solving also the problem of night lighting. The interior light is emitted by a system of LED, allowing this space to be used at night.

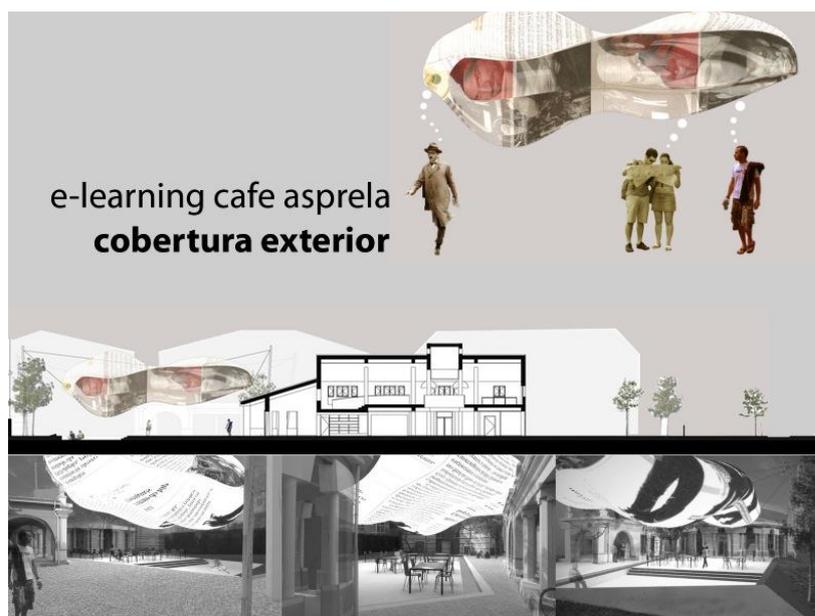


Fig. 5. U-thinking design proposal

The design of the e-Learning Café for the Botanic Garden is another ongoing project, as mentioned before. Again it will encompass the upgrading and transformation of an existing building, the Salabert House, located inside the U.Porto Botanic Garden, which constitutes an important public space and structure that strongly characterizes the architectonic and literary identity of the city of Porto. Because of this, the architectural design proposal is paying special attention to the genius loci of this place proposing the reconstruction of Salabert house to its original volume and typology and a new extension building.

There are different ways of learning and different ways of teaching. Universities have to be open to all these different methods and practices and create the necessary conditions for them to arise, facilitating interaction, collaboration and creativity.

The results already achieved by the U.Porto research project "Study and Socializing Spaces with Strong ICT Integration" and its e-Learning Café subprojects had already a broad and inclusive impact on the academic community and on the community of Porto citizens.

The University of Porto is committed to contribute to the teaching and learning that effectively prepares students for the future and to an innovative and sustainable society.

## References

- [1] - Vieira, Andrea; Neto, Pedro; Ribeiro, Ligia; Sousa, Maria (2009); Requalifying Old Place For New Uses – The E-Learning Café U. Porto. Requalifying Old Places for New Uses - International Symposium. IAPS-CSBE 'CULTURE&SPACE IN THE BUILT ENVIRONMENT NETWORK' and IAPS - HOUSING NETWORK REVITALISING BUILT ENVIRONMENTS, Istanbul, Turkey 2009. [http://www.culturespace2009.org/#cnt=sem\\_genInfo.html](http://www.culturespace2009.org/#cnt=sem_genInfo.html)

- [2] Sanof, H. 1992. *Integrating Programming, evaluation and Participation in design: A Theory Z Approach*. Vol.V.7. Avebury: Ethnoscapas
- [3] Sanoff, Henry. *School Building Assessment Methods*. National Clearinghouse for Educational Facilities 2001 [cited. Available from [http://eric.ed.gov/ERICWebPortal/custom/portlets/recordDetails/detailmini.jsp?\\_nfpb=true&\\_ERICExtSearch\\_SearchValue\\_0=ED448588&ERICExtSearch\\_SearchType\\_0=eric\\_accno&accno=ED448588](http://eric.ed.gov/ERICWebPortal/custom/portlets/recordDetails/detailmini.jsp?_nfpb=true&_ERICExtSearch_SearchValue_0=ED448588&ERICExtSearch_SearchType_0=eric_accno&accno=ED448588).
- [4] E-Learning Cafe in University of Porto: ICT influence in the design of social learning spaces, Pedro Neto, Andrea Vieira, Clara do Vale and Lúgia Maria Ribeiro.
- [5] Malcolm B. Brown and Joan K. Lippincott, "Learning Spaces: More than Meets the Eye," *EDUCAUSE Quarterly*, vol. 26, no. 1 (2003), pp. 14– 16, <http://www.educause.edu/ir/library/pdf/eqm0312.pdf>.
- [6] Hunley, S., and Schaller, M. (2006). Assessing Learning Spaces. In Oblinger, D. (Ed.) *Learning Spaces*. Boulder, CO: Educause.
- [7] Oblinger, D. (2006). (Ed.) *Learning Spaces*. Boulder, CO: Educause
- [8] Tom, J., Voss, K. and Scheetz, C. (2008). The Space is the Message: first assessment of a learning studio. *Educause Quarterly*, 31 (2)
- [9] Evaluating Quality in Educational Spaces: OECD/CELE Pilot Project CELE Exchange 2009/9, ISSN 2072-7925, <http://www.oecd.org/edu/country-studies/centreforeffectivelearningenvironmentscele/43904538.pdf>
- [10] Neto, Lúgia Ribeiro, Maria Sousa (2009) Proceedings, International IAPS-CSBE & HOUSING 2 Network Requalifying Old Place For New Uses: The E-Learning Café U. Porto
- [11] Malcolm B. "Learning Spaces" in *Educating the Net Generation*. Diana G. Oblinger and James L. Oblinger, eds. Boulder, Colo.: EDUCAUSE, 2005. <http://www.educause.edu/Resources/EducatingtheNetGeneration/LearningSpaces/6072> (accessed, February 2013).
- [12] Sawyer H.; Schaller M., Assessment: The Key to Creating Spaces That Promote Learning, *EDUCAUSE Review*, vol. 44, no. 2 (March/April 2009): 26-35, 2009.
- [13] Hertzberger, Herman, *Space and Learning*. International Conference, 2009.
- [14] Neto P, Vieira A, Ribeiro L, Sousa M (2011) Digital multi-User Interactive Systems to Enrich Socialization and the Learning Process: E-Learning Centers U.Porto