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# University labs: Experimentation and innovation. The case of MediaLab UTPL

**Juan Carlos Maldonado** [[CV](#)] [[ID](#)] [[G](#)] Universidad Técnica Particular de Loja -  
[jcmaldonado2@utpl.edu.ec](mailto:jcmaldonado2@utpl.edu.ec)

**Ana María Beltran Flandoli** [[CV](#)] [[ID](#)] [[G](#)] Universidad Técnica Particular de Loja -  
[ambeltran@utpl.edu.ec](mailto:ambeltran@utpl.edu.ec)

**Carlos Ortiz León** [[CV](#)] [[ID](#)] [[G](#)] Universidad Técnica Particular de Loja - [ccortiz@utpl.edu.ec](mailto:ccortiz@utpl.edu.ec)

**Andrea Victoria Velásquez Benavides** [[CV](#)] [[ID](#)] [[G](#)] Universidad Técnica Particular de Loja / -  
[avvelasquez@utpl.edu.ec](mailto:avvelasquez@utpl.edu.ec)

## Abstract

Latin American universities need to undergo a major technological upgrading to meet the challenges posed by the use of labs as teaching and learning tools. These changes should aim to offer an educational option that meets the current and future needs of society, which implies quality education with equality and sociocultural relevance in the context of a permanent education system through internships. Labs as spaces for experimentation have become one of the main innovation centres. The MediaLab UTPL, is a social production space, intended for research and the generation and dissemination of multidisciplinary projects, where researchers, students, faculty, and the general public can propose, create, and explore the different forms of experimentation and collaborative learning, through the use of the available tools and technology. This paper analyses the origin and development of this particular Lab and collects students' opinions about their learning experience in it. The conclusions of this research will be of great importance to educational communities and society in general, since they can serve as the basis to generate quality criteria to improve media skills that improve the dimensions and indicators of university communication labs. The research hypotheses are: 1) The implementation of the lab involves a series of practices that call for innovation in education through internships; 2) The knowledge acquired enables constructive learning through the development of scientific, technical and methodological skills and competences.

**Keywords:** Education; communication; technology; innovation; media; lab; Medialab UTPL.

**Contents:** 1. Introduction. 2. Justification. 3. Theoretical framework. 4. Methods. 5. Conclusions. 6. References.

Translation by **CA Martínez-Arcos**  
PhD, University of London

## 1. Introduction

Since their inception, industrial processes have required technological equipment, tools and gear to improve and innovate production systems correctly, as well as registration and control systems to prevent machinery damage and improve the quality of final projects.

Latin American universities need to undergo a major technological upgrading to meet the challenges posed by the use of teaching and learning technological and digital tools. These changes should aim to offer an educational option that meets the current and future needs of society, which implies quality education, with equality and sociocultural relevance in the context of a permanent education system; that is, an educational model that does not end with undergraduate or postgraduate studies, but is lifelong, implemented through an academic offer directed to the constant updating and improvement of the individual at the professional and personal levels.

Today, social labs are having a strong impact on the world of higher education, becoming spaces for experimentation with the use of technologies and resources that exist in these spaces; in fact, for some authors, education is one of the activities most likely to experience these disruptive innovation processes, given the late impact that technology is having on it. (Rodríguez 2017).

The speed with which these spaces have grown and the new requirements of experimental learning, have generated uncertainties in the design of innovative projects based on the new technological context. Under this premise, the Private Technical University of Loja (UTPL, according to its initials in Spanish), through its Department of Communication Sciences, in 2015, created the MediaLab UTPL, conceived as a lab for research, innovation, experimentation, generation and dissemination of multidisciplinary projects, where researchers, students, teachers and the general public can propose, create, and explore the different forms of experimentation and collaborative learning, making use of the available tools and technology, a meeting point for experimentation with the collaboration of citizens.

Technology and its implications should be a priority for universities because students are moving in a digital society. Hence the importance of labs as spaces where teachers and students combine science, research and experimentation.

## 2. Justification

Scientific and technological development is one of the most influential factors in contemporary society. Globalisation, which polarises wealth and power, would be unthinkable without the advancement of the productive forces that science and technology have made possible (Núñez 1999).

In 1894, John Dewey and his wife set up an experimental school to test their pedagogical theories. They developed a method to generate learning-based innovation and adapted a classroom to execute their proposals. Later Wilbur C. Phillips, in the field of public health, created the “Social Unit Plan”, a model of social organisation developed experimentally in Cincinnati in 1917, and implemented jointly by citizens and experts. After several attempts, media labs joined this model of social labs and over the last decades appropriated this socio-experimental model. According to Saguenza (2013), media labs have their origins in scientific labs, industrial labs, design labs and digital technology labs. Currently, the media lab model has experienced several advances in its social development with the incorporation of new digital technologies. Evolution has forced the “media” part of these labs to stop focusing on the idea of the media to incorporate the idea of mediation (Ruiz and Alcalá, 2016).

The media lab model, which is linked to a huge variety and density of discourses and artistic projects and is also linked to the art of new media, also has as mandate to carry out research linked to experimentation. For example, the *Laboratorio de Luz* (“Lab of Light”) (1990 to the present day), linked to the School of Fine Arts of the University of Valencia, was conceived as a meeting space for study and research of aesthetic and expressive principles related to light and image. The Fablab (Seville, 2011), is a space created at the School of Advanced Architecture of the University of Seville for the application of hardware and software in digital manufacturing.

Addressing some connotations on the vision and focus of the work of Media Labs, the objective is to advance towards a better understanding, for example, of the dynamics between humanity and science, a possibility of creating worlds and places to establish dialogue and different connections (Ortega and Villar, 2014). In recent years, one of the most important labs in Spain is *El Prado de Madrid MediaLab*, which was founded in 2000 as a key centre for cultural production through experimentation with digital technologies, placing its research in the intersection between art, science, technology and society.

## 3. Theoretical Framework

In the last two decades, universities have experienced many changes in their regulatory frameworks, curricula reforms and counter-reforms, as well as new and varied degree programmes (Moreno and Pozo, 2003). These institutions must be at the forefront of technology and implement labs for their students’ practices, to achieve a comprehensive context of innovation through experimentation, by harnessing the potential of infrastructure and the appropriation of existing knowledge. One of the main advantages offered by a lab is its interactivity, which allows students to have contact with real projects. By observing what happens in the experiments, students develop cognitive skills. However, despite being ideal places for experimentation, labs pose certain challenges, including their initial cost, maintenance, energy consumption, and space restrictions due to the increase in student enrolment due to demographic explosions (Lorandi, 2014). It should also be noted that students’ professional practices must be constantly supervised by teachers or lab managers.

Due to their particular features, the use of ICT in education can be positive, as they can improve students' attitude towards learning and even improve the teaching process (Pontes, 2001).

#### 4. Methods

Using a descriptive and analytical approach, this article addresses the development of the MediaLab UTPL, since its creation in 2015, emphasising the results of its projects and especially its lines of research. Information has been collected from students and teachers who have worked in this lab.

**Figure 1. Website of the MediaLab UTPL**



The MediaLab UTPL departs from the transversality of communication to devise a physical and virtual meeting point between university and society. Based on digital culture, the lab aims to develop applicable proposals, that is, as method and as result of work, through the incorporation of technology into the processes of knowledge production, interaction with different society groups and public participation. The MediaLab UTPL is integrated into the R&D&I labs proposal of the Vice Chancellor of Research and Transfer through a team of the Department of Communication Sciences of the Private Technical University of Loja. The Lab focuses his work on seven areas: social networks; new trends in the advertising market; new interactive and audiovisual narratives, data-driven journalism, new digital businesses, new technical and journalistic standards in mobile devices and technological innovation.

#### Experimentation in collaboration with students

The implementation of the basic elements of digital technological culture is one of the main objectives in the field of communication training, as students are increasingly in the context of a society that demands the creation of digital products. Precisely for this reason, the Medialab UTPL has been created, giving a space for students to build their first contents linked to the new forms of journalism. According to García (2012), knowledge is produced by the confluence of two processes: information (search, processing, storage) and communication (distribution and exchange of information), which are activated through education and the proper use of currently available resources, tools, applications, and technological and digital environments. The use of technologies should be driven from the areas of formal and informal education, as a means of increasing and improving access to educational and

cultural goods and services, forming critical individuals, assets and creators, not just consumers of technologies and digital content (teacher training). Therefore, teachers should be prepared for this new way of teaching and learning.

In view of these considerations, the MediaLab UTPL has proposed new educational strategies, which give rise to effective and efficient learning, incentivising teamwork and the integration of new technologies. As Sandra Piedra, third-year student of the communication degree programme, points out:

This space has given me the opportunity to work in real-life projects in which we can put into practice and improve the skills and abilities that we possess. This experience has been very satisfactory, because I have had teachers who guide me in different fields of communication (designers, video editors, cameramen, etc.). Experimentation guided by teachers is very important because in several projects we had no knowledge of the technique, such is the case of holograms, on which we started with trial and error, because the technical way of recording with real people was not clear; on the web only examples with animation were found; this motivates us and helps us complement knowledge with real things.

The education of the knowledge society cannot be based solely on the transmission of information by the teacher but should also encourage the acquisition and development of technological and digital skills (Goig, 2014). Pamela Rodríguez, second-year student of the same degree programme, highlights the importance of working on the projects of the MediaLab UTPL:

I have really learnt a lot about production and editing in the audiovisual field, but in addition, I have also developed skills on how to carry out research properly when necessary to be able to develop better projects. Above all, work here is more enjoyable thanks to the team working in this space; teachers' trust and interest in our activities is very important because it allows us to have more confidence in what we do.

Chelsy Segurola and Jason Espinoza, third- and fourth-year students of the Communication BA degree, agree that the use and management of technological and digital tools is very important, as this allows them to be at the forefront of current journalism. This is because in the new globalised context, digital information and digital technologies penetrate the most diverse production processes and occupy a decisive place in them, so that the areas of science and technology are once again shown as central (Martínez, 2015).

## **Projects**

In 2018, the MediaLab UTPL undertook several projects that aimed to be permanent. However, it is important to take into account the lines of research of the Department of Communication Sciences, where the actions of the lab are supported. In this context, different projects have been developed with the aim of positioning themselves as a consolidated, participatory, innovative, competitive and relevant lab for the integral training of students, teachers and technicians, promoting a civic sense, change and technological innovation. All this framed within a combination of teaching, research and experimentation, with interdisciplinary connections in different fields of knowledge.

That is why the MediaLab UTPL has been developing a series of initiatives, which include:

**Table 1. MediaLab UTPL Projects**

| Project   | Description   |
|---|---|
|   | Proposal for innovation in institutional-student communication. Creation of the news programme <i>La Nota UTPL</i> .  |
| Cultural industries   | Transmedia Project <i>Loja, ayer y hoy</i> . Production of communication products (video, audio, photography) based on the audiovisual archive of the UTPL. |
|   | Proposal for the creation of the UTPL audiovisual archive.  |
|   | Implementation of the UTPL Collaborative Digital Photo Library.   |
|   | Project <i>Fotoensayos</i> (“Photo-assays”): Experience the power of the image.   |
|   | Creation of tourist videos about Loja in 360-degree.  |
| Educational, academic and scientific communication resources. | Project for the creation of holograms applied to education.   |
|   | Creation of audiovisual resources for MOOC UTPL.  |
|   | Thematic talks with students and teachers.  |

These projects are framed within the lab’s aforementioned research lines. From the perspective of the model of experimentation, teamwork, research and development, each of these projects is coordinated by teachers and supported by students of the Communication Degree, working interdisciplinarily with the BA programmes in: Public Relations, Architecture, Computer Systems, among others.

Marques (2000) notes that the teaching means perform, among others, the following functions:

- Motivate, generate and maintain interest
- Provide information
- Guide students’ learning: organise data, relate knowledge, create and apply new knowledge.
- Evaluate knowledge and skills.
- Provide environments for observation, exploration and experimentation
- Provide environments for creation, expression, and dissemination.

The MediaLab UTPL model aligns with other models of social labs existing in Europe and Latin America. The maintenance of the lab is subject to the budget of the Department of Communication Sciences and to specific project proposals sponsored by the Private Technical University of Loja.

Finally, it is considered that for the fulfilment of any project that is developed in the MediaLab UTPL, it is necessary to fulfil a series of objectives, means or purposes as a starting point. The general aspects are listed below:

- Technological and digital equipment in spaces assigned for each project.
- Installation and integration of the technical and human team required for experimentation and innovation in a space where teachers and students can develop their activities.
- Provision of technological and digital tools in the different spaces to highlight positive results in the production and termination of the products.
- Collaborative work is necessary between teachers and students to develop activities jointly, facilitating the exchange of experiences.
- It is very important to promote joint actions to communicate and share knowledge through the dissemination and implementation of the results.

The connection between the concepts of social labs and media labs is relevant, since it is precisely the channel for the development of the digital society in which we live, for which experimentation with technology no longer make sense if it is disconnected from the social context in which it is circumscribed and implemented and should be carried out in specific areas of the university field.

## 5. Conclusions

This work introduces a form of innovation in the educational field of university faculty staff training, based on the use of tools of digital culture and materialised in specific formats and projects of experimentation and collaborative learning.

It can be argued that the projects developed in the MediaLab UTPL mark a milestone in the development of the university education of the country, since it is the only lab that works directly linked to a higher education institution in Ecuador. The picture is broad and so are the initiatives that arise from university contexts inside and outside our country. The open, social and digital nature of these labs requires the generation of new metrics of social involvement that go beyond the measurement models traditionally used for research.

For teachers, it is very important and very useful to get access to the ideas and information of students, which also encourages the combination of collaborative learning and experimentation. In addition, the lab enables its members to carry out a reflection on and self-assessment of the skills and capacities acquired through the activities entrusted to each individual.

This article presents the case of the MediaLab UTPL, by analysing its scope, projects, proposals and experiments in collaboration with students. It has been shown that digital culture and collaborative work

have fundamentally expanded the boundaries of the university and its action in society, facing new challenges to capture and meet its purpose.

It is desirable for governing bodies to ensure the well-being of university education and develop lifelong programs that encourage teachers to have a direct relationship with students in the learning process that encourage an interest in learning about new strategies and tools that contribute effectively to their training.

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