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Social Media Labs in the Social Education Degree: Exploring Digital Competences of University Students

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Abstract: Social media labs, as spaces for experimentation, have recently become one of the main mechanisms for innovation. The role of universities, with degrees focused on subjects linked to social innovation, can be a fundamental factor in social development. It is essential to transform traditional centres into spaces for dialogue, into creative ecosystems, simultaneously dedicated to reflection and debate, research and production, training, and socialisation. Within this framework, we carried out ethnographic research on the implementation of a social media laboratory developed with social education students during the last two academic years at the faculty of education in Palencia. The results provide evidence of the development by university students in some skills related to creativity, reflection, and debate, as well as various digital skills. In line with the existing literature, we show how the social media laboratory enables the acquisition of knowledge situated in the social reality of the environment that is of great use to future social educators, as well as some of its limitations in these processes of experimentation and social innovation.

Keywords: social media lab; educative innovation; digital competences

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1. Introduction

1.1. Social Media Laboratories

Social media "laboratories" [1] are new institutional devices which have emerged to measure social temperature and turn protests into proposals. They are a mechanism with two potential effects: first, they allow for the identification of new social issues that institutions alone would not be able to address, and second, they provide an alternative way of working both on these issues and on those that are already on the political agenda. This makes these laboratories an interesting instrument for providing solutions to social intervention from the citizens themselves.

As spaces for experimentation and cocreation, these research centres have become one of the main mechanisms for innovation. In this framework, they have emerged as a type of laboratory focused on experimentation with technologies and media and have evolved, with the development of a digital society, towards citizen mediation and social innovation laboratories [2]. They are spaces for the generation of ideas, as well as for the development of prototypes, generating a set of practices and forms of production that are specific to them. They are mainly built under the concept of knowledge production, where, through practice, new knowledge is obtained as a result with the aim of socialising it quickly.

To understand what they are, we must understand their history. Although today they form part of an alternative circuit, paradoxically, if we look for the first laboratory antecedent, we find it inscribed in academia. The Massachusetts Institute of Technology's Medialab was created by professors Nicholas Negroponte and Jerome Wiesner in 1985 with the idea of generating an alternative space for production and research to that proposed by traditional academic laboratories oriented towards the study of new media, at the dawn of their development in that decade. It is from this relationship with the study of new media

that the term itself—medialab—arose, as the English conjunction of media laboratory. Over the years, as [3] states, the MIT medialab "has created the technological innovation that is transforming our lives". Eventually, this term became generic and began to be used to define spaces where not only new media were studied, and which were not necessarily affiliated with a university.

As [4] states, labs "are platforms designed to address challenges that are defined, firstly, by their social character, bringing together people with different characteristics and approaches to work collectively; secondly, by their experimental character, as processes of creation continued over time; and finally, by their systemic character, working on the generation of prototypes that can solve the proposed challenges". Thus, labs are built on the concept of social innovation. This is defined as the development and implementation of new ideas (products, services, and models) that meet community needs and create new social relationships and collaborations [5]. Social innovation goes beyond social entrepreneurship, addressing strategies, tactics, and theories of change, as they activate citizen participation in the development of shared solutions [6].

The laboratories or experimental centres of digital culture promote cocreation, generate collaborative thinking, and link multiple intelligences with their experiences, feelings, aesthetics, and knowledge in a playful and innovative dynamic in the generation of processes and products, from contextual research grounded in everyday problems to practical, fast, and low-cost solutions using social and digital technology [7]. These social laboratories are new classrooms without walls, where freedom and creativity are the axes of innovation, based on trial and error, where error is what is sought to better understand reality and the past builds the future in the present. The rapid democratisation of technology has led to a shift from a technological profile to a social perspective [8]. More recently, new forms, such as hacklabs, makespaces, fablabs, citylabs, etc., have been added to the complex landscape of laboratories.

We propose thinking of the media lab as a bet, a prototype or lab model that addresses the transformation of knowledge production processes, the reformulation of university institutions, and the role of the humanities in influencing social processes from the defence of the commons as a local and situated expression of a capacity for resilience. Following this line, a prototype is a tentative, provisional, incomplete, experimental, open product. Prototyping is not so much about finding solutions as it is about making sure that the problems are well understood or, in other words, that we have been critical enough to explore the consequences of our designs and to make sure that we have taken into account almost all possible points of view [9].

Testing and experimenting are the guidelines of a generation that lives from the practical and then reflects and evaluates what it has experienced. Failures are the sum of experimental knowledge that shape success. Simulations serve to make mistakes and then use that practice in reality to avoid making the same mistakes. This makes laboratories a space for reflective learning, whose solutions and proposals are presented in the form of prototypes that (a) are material productions, (b) incorporate different knowledge, and (c) need to be tried and tested. In this sense, they are solutions that can always be improved and that allow new experiences to be incorporated [10]. This means that, although they arise in situated contexts, they can be tested on different scales and in very different realities, adapting to the peculiarities of the new reality, taking advantage of the accumulated citizen wealth, and, at the same time, returning to the original prototype.

1.2. Social Media Laboratories in Universities

While the world is moving at a dizzying pace, universities have changed little in terms of their operating logics and organisational structure inherited from the Middle Ages. However, some institutions are rethinking the foundation of the model of universities that we need in order to respond to contemporary reality [11]. The most disruptive proposals suggest that universities without infrastructure, universities without curricula, or universities in which cooperative problem solving is at the heart of learning. Despite this,

there are still few ideas from the academic structure, administration or forms of validation that break with the dominant models of knowledge production.

The role of universities, with degrees focused on subjects linked to social innovation, is a fundamental factor in social development. It is essential to transform traditional centres into spaces for dialogue, into creative ecosystems, simultaneously dedicated to reflection and debate, research and production, training, and socialisation [12]. In this sense, the new modalities of democratisation of technology and knowledge in laboratories and the practice of prototyping are relevant in the context of transdisciplinarity, the emergence of new research methods, and the need to be creative when it comes to procuring resources (tangible and intangible) for the generation of collective knowledge.

This call to break down walls and go in search of other worlds outside the university coincides with [13], who questions the actions needed in academic units to confront the distraction that the institutional structure imposes on them. That is, we must balance the quantification of papers, validation among experts with experimentation, and proximity to other objects of study. This claim is imperative in these times in which, both locally and globally, we face uncertainty in the wake of the COVID-19 pandemic.

For all these reasons, laboratories play an essential role in education. Their didactic potential is high because they advocate for the development of an active vision of the student in the learning process as a unit for the discovery and impulse of new ideas [14]. Universities are spaces for experimentation with digital technologies and are places where people seek to deconstruct and criticise the ways in which these technologies operate within society [15].

Through this reflective exercise, we seek to argue that media labs are platforms that enable creative and productive processes for social and institutional transformation through the disruption of knowledge production processes associated with the defence of the commons [16]. There is no single model or format for laboratories; however, we believe that it is important for universities to rescue the vocation for experimentation inherent to innovation in order to transform academic culture, the environment, and communities.

1.3. Digital Competences in Higher Education

Digital competence is one of the basic competences of 21st century citizens and has also been included as a transversal competence in all Spanish universities since the arrival of European convergence [17]. On the other hand, educational innovation in our higher education system must become a basic element of our daily work if we want to adapt our institutions to the labour and economic context of our current society.

Although the Council of the European Union defines digital competence as "the safe, critical and responsible use of and interaction with digital technologies for learning, working and participating in society" [5], in recent years, the importance of developing this competence among students has been emphasised, with the idea of promoting the integration of technology in university teaching, helping to prepare new generations to be active citizens in a digitalised world. Based on the importance of competences as a central element of a renewed approach to our education systems, institutions and official bodies are beginning to draw up lists of basic competences, all of which include digital competence [18].

Generally speaking, definitions of digital competence can be classified in relation to two main perspectives: those that emphasise the technological component and those that emphasise the informational or communicative dimension [19]. By encompassing both trends, we consider that digital competence should be understood as the values, beliefs, knowledge, skills, and attitudes related to appropriately using technologies, including computers, software, and the Internet, which allow and enable the search, access, organisation, and use of information in order to build knowledge.

Lafuente justifies the need to train university students in digital competences because "they must be able to access new information, be trained in search skills, develop their capacity to construct knowledge in interaction, know how to express themselves and

communicate with new languages and tools and, finally, acquire competences for learning in spaces enriched and constructed with technologies" [4].

The best-known model of digital competence is the one developed by the European Commission [5]. This model is based on a globalising concept of competence—which includes knowledge, skills, and attitudes—and includes the following areas of digital competence: information, communication, content creation, security, and problem solving. Based on these approaches and the development of digital citizenship, this initiative focuses on experimentation through the capacities, skills, and attitudes of pupils in relation to the possibilities of social media laboratories.

2. Objectives

In this study, we investigated the implementation of a project called "Social Media Laboratory for Young People" as an example of content creation that combines multimedia (images, video, text, and audio) with the development of participatory cultures and the acquisition of digital competences. This project was conducted with the aim that the students obtaining degrees in social education go from being mere consumers to coproducers of the narrative, generating new opportunities for social, cultural, and professional development. To this end, we propose the following objectives:

1. To examine social media laboratories based on the production, research, and dissemination of socioeducational projects that explore new forms of creative experimentation and collaborative learning that arise within university environments in the hyperconnected society.
2. To stimulate social innovation and citizenship projects developed at the university, offering open platforms for collaboration between students and social agents to promote knowledge as a common good.
3. To promote the development of digital competences among university students in an environment of learning ecologies as part of their training in the context of expanded education.

3. Materials and Methods

3.1. Context of Study and Selection of Participants

This research was developed with a qualitative approach oriented by an ethnographic study [20] and carried out through nonparticipant observation, description, and analysis of the various technomedia productions created, developed, implemented, and disseminated through various platforms and social networks within the framework of university classrooms converted into media laboratories or innovative ecosystems to promote citizen-oriented and socially relevant communication projects.

The study tries to focus on an experience carried out during the first semester of the 2021/22 academic year within the framework of two subjects belonging to the degree of social education at the University of Valladolid, Palencia: citizen participation (basic training) and social media (optional), third and fourth year, respectively, located in the faculty of education. The implementation of this educational project of citizen participation and sociocommunity action through digital, media, and informational experimentation is carried out by the two groups together, with a total of 32 students participating over six sessions in different roles linked to the generation of ideas, the promotion of technocommunicative prototypes, documentary research, digital performance, feedback and evaluation of the process, the choice of formats, codes and languages of interactive digital communication, or viral dissemination on and through platforms and social networks.

The work proposal included as main phases: (a) start-up of the laboratory, explanation of the proposal, constitution of the working groups, and initial choice of the project theme; (b) bibliographic research linked to the social media laboratories; generation of ideas linked to the project; and initial definition of the objectives and methodology of the proposal and intergroup feedback through coevaluation; (c) documentary expansion of references linked to the field of social education for the improvement of the proposals; development

of the activities with special relevance in matters such as the possibilities of realization of the projects and the adjustment of the objectives according to the audiences; the aesthetic qualities present in relation to the languages and formats used; the refinement of the methodologies implemented; and the implicit ideological functions and social or political orientation of the proposals; (d) tutorial feedback to outline the project in its different elements and the video design process for the purpose of social communication of the project; (e) documentary research in relation to multimedia, digital, and interactive social communication projects previously elaborated by university students within the framework of the subjects; and closure of the design process of the videographic productions through the use of the storyboard tool, in which the script of the project, languages/formats used, and links with social education are mainly specified; and (f) presentation of the videos in the laboratory and group discussion; dissemination of the productions through social networks and platforms; and the documentation of the process through the delivery of workbooks and worksheets.

3.2. Study Focus and Dimensions of Analysis

Based on research designs and frameworks linked to the relationships between technology, participation, and media [21] and the selected digital competence dimensions within the European Union's digital competence framework [5], the following dimensions of analysis and research questions regarding laboratories and digital competences have been developed for the present study (Table 1).

Table 1. Research questions and categories of analysis of the social media lab.

Research Questions	Categories of Analysis
What are the main elements orchestrating the design and implementation of the social media lab?	Prototyping as a challenge for the generation of projects with a socially relevant approach. Sociocommunity projects from multimedia, digital, and interactive communication.
What organizational–methodological strategies are used from the laboratory for the acquisition of digital competences in hyperconnected university students?	Activities, tasks, and forms of evaluation used for the development of information skills and media literacy. Activities, tasks, and forms of evaluation used for the creation and expression of digital content in multiple formats. Activities, tasks, and forms of assessment used for the responsible, participatory, and collaborative use of digital technology and social communication. Activities, tasks, and forms of evaluation used for the creative transfer to professional situations of technomedia knowledge.

Source: own elaboration.

3.3. Data Collection Instruments and Procedures

At the same time, and given that our research aimed at analysing the social experience mediated by digital technologies and social media, our inquiry was not only focused on the media ecosystem, but also on the opportunity to use the network as a research tool [22]. Therefore, we used digital ethnography [23] as a mechanism that would allow us to examine the relationships between the virtual and face-to-face spheres, also understanding that the emergence of radio, television, computer, smartphones, the Internet, search engines, web, e-mail, social networks, etc., have influenced and mediated personal inter-relationships. Therefore, this study includes the collection and analysis of the aspects linked to the analogical and face-to-face reality of the classroom, as well as the elements of teaching and the virtual/digital reality of the participants.

The research techniques used respond to the complexities of digital ethnography: (1) analysis of the audiovisual productions made by the future social educators in digital format, together with their reflective texts; and (2) classroom observations made by an external observer who was present in the two classrooms, analysing the work dynamics in the process of making the media labs.

For the coding and categorization of data, we followed systematic and exhaustive procedures in which we gradually sought to generate compressions on the object of study (Table 2). On the one hand, the conceptual mapping of graphic and audiovisual representations has allowed us to proceed to the representation of knowledge in a visual way, linking related concepts in the interpretation of data [23]. On the other hand, the analysis of narratives and videos from the laboratories focuses not only on what people say and their description of a series of events and key actors in the processes studied, but also on how they say it and why they say it. The narratives allow us to share the meaning of the experience for the participants in the selected cases [24].

Table 2. Instruments and data collection procedures.

Instrument	Procedures	Coding
Laboratory cards	• Classroom observation. • Analysis of audiovisual productions.	F_1–F_26
Storyboard		S_1–S_26
Vídeo Laboratory		V_1–V_26
Infographics		I_1–I_26

Source: own elaboration.

Finally, we have taken into account a series of ethical criteria in fieldwork, such as negotiation, informed consent, the involvement of participants in the identification and clarification of issues, confidentiality, and anonymity. We also used the proposals of Ausín and Robles [25] to evaluate the quality of the research in terms of credibility and verisimilitude in the process of data analysis and interpretation

4. Results

4.1. The Orchestration of the Social Media Laboratory

Design of Prototypes with a Sociocommunity Perspective from the PBL Methodology

As already mentioned in the section on research design, the media laboratory project was structured through the methodology and tools of project-based learning (PBL) with the aim of developing prototypes with a social and community perspective.

The initial proposal was based on proposing a challenge in which the design of a social media laboratory for young people was proposed within the different areas of work related to social education: leisure, participation, and the world of work. The idea was, therefore, that different working groups formed for this purpose would elaborate different prototypes through digital and/or media technologies through which to disseminate different contents, actions, and proposals related to profiles and fields of action in the social and community fields. In this sense, the prototypes generated by the students initially become the initial models or learning objects that must be subjected to subsequent testing to prove the validity and reliability of their conceptualization and design. They are not perfect versions of a final product, at least at first, but become proposals subject to modification and revision throughout the laboratory. Table 3 shows the different prototypes generated and their different thematic orientations.

Table 3. Social media labs for young people.

Field	Denomination	Description of the Social Media Lab
Leisure	SportLab	Physical activity at home
	VitalPal	Body expression, music, and dance
	TecdePal	Sports and technology
	EncuPal	Binding with recycled materials
	ArtPal	Drawing on photographs
	FloWorld	Creating floral decorations
	RedPal	Cultural challenges on Instagram
	PanfotPal	Inclusive photography
	PalHuerto	Home gardens
	DepWorld	Sports and social challenges
	CociLab	Economic cooking for students
	PalMagic	Making videos with social themes
Participation	EducoLogía	Emotional education
	DearDiary	Personal online diaries
	VozPal	Political participation
	Emosan	Emotional management
	PalBooking	Making diaries with recycled material
	Signolízate	Learning sign language
	RRRPal	Reuse and recycling of materials
	MercaLab	Second-hand clothes market
	Elaborando	Analysis of information in the digital press
Working World	GreenLab	Exchange between farmers and consumers
	PalCorte	Home hairdressing workshop
	LaborAl	Social insertion launching pad
	InfoJov	Preparation of online CVs
	Desertes	Training and job search

We see, therefore, that the laboratory project in the line of design thinking and prototyping culture is defined as an open, tentative, and unfinished process, but above all it is based on an initial challenge, a specific problem posed to the students: on what problems or social situations do they want to generate a proposal for educational action? In this sense, it is important to emphasize that the importance here does not lie so much, or not exclusively, in the ability of the working groups to develop a media product. Much more important—at least in our opinion—will be the possibility of elaborating alternative solutions, interpretations, and discourses about problems that are part of our contemporaneity and that are relatively complex: the social inclusion of the group of functional diversity, job training in a context of labour market precariousness, the generation of critical discourses in the face of infoxication, the option for sustainable trade proposals and responsible self-consumption, psychic conflicts within neoliberal capitalism, or alternative forms of leisure in the face of hyperconsumerist commodification.

A second important issue to highlight within the work methodology followed during the laboratory, based on articulating the PBL methodology with design-based thinking, is the need to gather inspirational sources, that is, to search through the different contexts of action for contents, imaginaries, metaphors, voices, perceptions, experiences, and even knowledge given by different agents involved in the prototyping proposals that are in-

tended to be promoted from and by the working groups. Hence, in the laboratory, the different teams carry out a search for information and references in social, professional, and digital environments to initiate and outline their own project designs. During this process, they also learn to organize, analyse, and critically evaluate the credibility and reliability of the information and its sources, as reflected in the following narrative vignette where this process of dialogue and learning of university students together with citizens, users or experts is illustrated:

"The following references serve us to contact these people and have them come to our debates as speakers, as well as to acquire new knowledge about the topics being discussed. Instagram profiles: @SantaMandanga, @somosestupendas, @interseccionalidad. TikToK profile: madredecroquetas" (F_20).

This way of acting and the collective construction of knowledge allows us to break with certain unidirectional and hierarchical models of learning and knowledge transmission by seeking frames of reference and theoretical contexts, not only from the official knowledge offered by the university and its professionals, but from an epistemic conception that claims the civic knowledge of people and communities in different fields of human activity. And at the same time, we place ourselves in a model of initial training that bets on an ecology of knowledge that breaks with a model of knowledge elaboration and top–down cultural action.

Building and experimenting with prototypes from multimedia, digital, and interactive communication

One of the most important characteristics in the prototyping culture is, without a doubt, that it has an experimental character. Therefore, we will seek to build designs that materialize the processes of research, exchange of knowledge, and reflective dialogue previously carried out, subjecting them continuously to collective, public, and contrasted scrutiny in the ecosystem of the laboratory. In the case we are analysing, the students organize and plan the task, starting by defining the objectives and the methodology of each prototype, and exchanging ideas with the rest of the teams in a sharing process in which each prototype receives feedback from the rest of the teams. In this process, each team must suggest improvements to the rest, which are noted down for later analysis in the working groups (Figure 1).

Figure 1. Feedback among teams. Source: screen shot V_4.

This issue of permanent intra- and intergroup feedback is not a minor issue, since it not only allows refining the idea of the prototype that each of the working groups have, but, at the same time, it allows increasing the understanding that the group-class has—that the laboratory as a whole has—regarding the problems related to digital culture and the media, as well as with regard to the different topics and fields of action that are subjected to a review within the field of social education. This group evaluation process has, therefore, an iterative component, as it allows the revision of the initial ideas of each of the prototypes, trying to progressively adapt them to the objectives to be achieved.

Another important issue is that, in the construction of prototypes, if more advanced and improved versions are to be achieved, dimensions such as creativity, the application of knowledge, and experimentation will undoubtedly play an important role. This experimentation will involve trial-and-error testing, error analysis, and redesign. That is why, in the laboratory under study, the moment of model construction and subsequent testing play a fundamental role. Hence, a video presentation of each of the prototypes (with a maximum duration of 3 min) will be made, in which the teams will have to identify and solve technical problems during its creation, while at the same time, they will have to transfer technological, audiovisual, digital information, or media knowledge in a creative way to the new situations linked to the sociocommunity. To mediate in this prototype design process, each group elaborates a storyboard of the laboratory video prior to its recording, as illustrated in the following Figure 2.

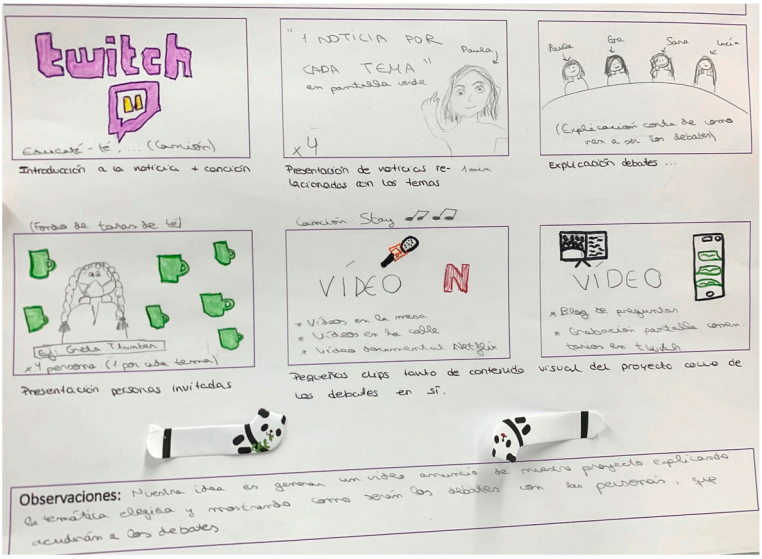

Figure 2. Storyboard video laboratory. Source: S_12.

In this experimentation phase, we observe how the work teams develop different prototyping modalities, not only because they are different in their presentation formats but also because they have been progressively changing significantly throughout the duration of the laboratory. That is why it is important in this moment, reserved for experimentation the presentation and projection in the classroom of the videos made within each prototype, accompanied also by a brief presentation of each of the teams about the different phases of their development.

It is at this moment that the issue of feedback becomes especially relevant again, generating in the laboratory an environment that favours and facilitates conversational dynamics, the introduction of different points of view that allow enriching each of the prototypes according to their purposes, field of action, chosen narrative structure, formats, and languages of multimedia communication presented, etc. Each working group, therefore, will carry out a peer evaluation of the prototypes presented. In addition, each team must perform a written self-evaluation of its social media laboratory.

"After the realization of this work, we consider that we have followed a good dynamic since we have all been involved equally, we have had many diverse ideas, we have also been aware of the feasibility of some of them when making the video having to discard those that were not. We are satisfied with the work done and we are aware that as we have advanced in this project we have had to modify according to the needs that have arisen, but we are calm because we have discovered that our resolute spirit is very broad." (F_4)

Finally, an important aspect will be to make the different projects evolve, in this case through a series of steps taken within the laboratory, in order to engage others and build community, which are undoubtedly essential aspects of any project based on the

design of prototypes and are even more important, if possible, in the case of the initial training of social educators. Therefore, now is the time to seek to expand the potential of the prototypes generated through design dissemination processes, either because the working groups seek to share their ideas or stories or because they intend to engage others in the projects, and even because they think in terms of future differential employability in light of the characteristics of each prototype and the audiences they intend to reach in communicative terms. Therefore, the last element to be orchestrated by the laboratory will be the dissemination of the different projects developed. To this end, all the videos of the social media labs have been uploaded to a YouTube MediaPaLab channel (https://www.youtube.com/playlist?list=PLcaTa04HAxMYKSB-BTPbsZ8OIyxEGQcPu, accessed on 10 December 2022). At the same time, it will be publicized through the different social networks and platforms of students and teachers, as well as on the website of the media Lab of the Recognized Research Group Citizenship, Ecologies of Learning and Expanded Education (CEAEX) of the University of Valladolid (https://ceaex.uva.es, accessed on 10 December 2022).

4.2. Digital Competences in University Social Media Labs

Using digital technologies to promote the active and creative engagement of students while integrating them into pedagogical strategies that enhance their transversal competences, as well as complex thinking and creative expression, was one of the main objectives in the design of the social media lab project. On the other hand, it also sought to open learning to the new, to real-world contexts that would involve them in practical activities, in scientific research, or in the resolution of complex problems, or that, by any other means, would encourage their active participation in topics, contents, and processes related to social education.

In educational terms, and for the case study at hand, the acquisition of digital competences arises from the need to train students in global learning contexts, with high technological and informational mastery, but above all with critical thinking skills through the formative premise of lifelong learning. And in this sense, it seemed necessary that the media lab and the design of prototypes within this ecosystem, would allow establishing action guidelines regarding media, digital, and information literacy that would allow students as hyperconnected youth to understand the role and functions of the media in democratic societies, and in this case, to review and expand their skills to produce content generated as media users with a sociocommunity perspective.

Development of information and media literacy skills

Within the competence linked to information and media literacy, students developed a process of content curation. For this purpose, each of the groups had to search for different information in digital environments in relation to the chosen field of social education. They had to organize, analyse, and critically evaluate the contents located in different formats: (1) research and scientific articles, (2) current news in the press, (3) information in social networks, and (4) images and videos. Once the group search was completed, they selected the most relevant information on the topic and created an infographic (using one of the free tools available on the Internet) to share with the rest of the groups (Figure 3).

In relation to the above, the design of prototypes within the framework of the media lab seems to be a device that mediates the consolidation of a multiliterate model in which at least these characteristics are present. Firstly, the learning ecosystem offers possibilities for hyperconnected students to autonomously dispose and deploy a series of skills that allow them to search for information through various technological devices (printed, audiovisual, or digital). Secondly, the laboratory seems to be committed to a model of situated and distributed cognition of knowledge in which, as already mentioned, the work teams have to critically analyse the information related to their experimental prototypes. At the same time, they must contrast it with other work groups, with communities of experts, users, or people who not only enrich the projects but also force them to a subsequent reconstruction and intelligent application of the same to the challenges and problems set at the outset.

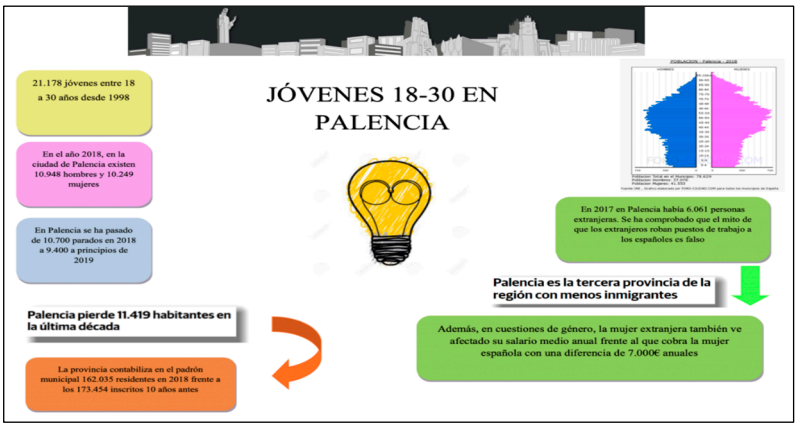

Figure 3. Infographic about young people in Palencia. Source: screen shot I_21.

There is also a third issue related to the idea of the prototyping laboratory as a multiliterate device that concerns precisely the ability of the working groups and the people who constitute them to use multiple resources and expressive forms or languages, especially for the purpose of being able to disseminate the information contained in the prototypes in various communicative contexts and areas of socialization. And, finally, it is a project that aims to internalize social criteria and values for a digital communication oriented towards the common good, as well as the ethical and democratic use of information and knowledge.

Creation and development of multimedia digital content

In relation to the competence on digital content creation, each team had to elaborate a video for the presentation of the social media labs created by the groups. During the process, technical problems were solved in the classroom and the technological needs and answers, innovation, and creative use of technologies necessary for the elaboration of the video were identified. All videos were shared on a YouTube channel (Figure 4).

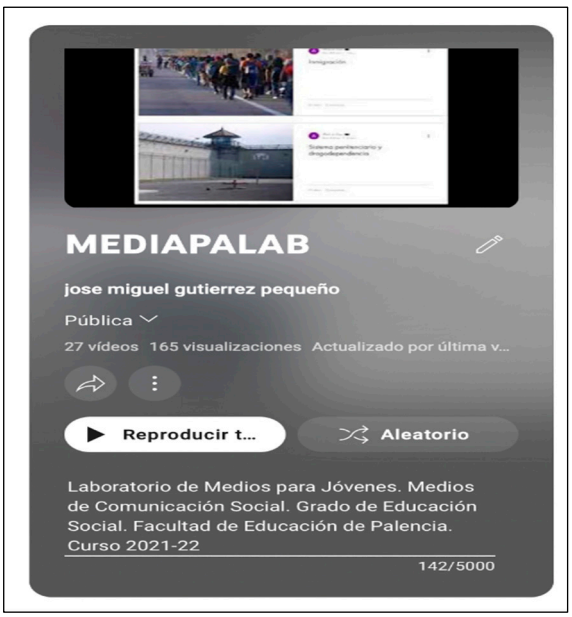

Figure 4. MediaPaLab Chanel. Source: YouTube.

Nevertheless, and with respect to the creation processes carried out, we must emphasize the fact that, in the laboratory, the really important thing will not be so much experimentation with and through technology or the assembly of prototypes. Without

detracting from the educational purpose of the processes of figuring and generating ideas, they certainly have a social purpose. Through the different activities proposed, what is really tested is the generation of a community, initially within the classroom ecosystem itself, since it is undoubtedly important that the process of encouragement regarding prototyping is maintained throughout all the work sessions. But it is also relevant to establish links that reinforce service learning, the articulation and relationship with communities, organizations, collectives, users of digital platforms, or simply individual citizens.

In this sense, through the laboratory and design-based learning, what is also obtained as an added value is a dialogic, horizontal, and participatory way of building knowledge in university classrooms. They are plural in the views offered since the contexts of action from which the prototypes are thought and designed are diverse. They are also diverse in the work methodologies offered, involving in the project and in a nonhierarchical way information from different sources of knowledge. However, they also include strategies that collect imaginations and perceptions of experts and users, opinion surveys and questionnaires, data extracted from studies and statistical analyses, working hypotheses that are tested during the prototyping process to assess their level of incidence or impact on the community, and audiovisual materials that are analysed as examples, etc. They are nonhierarchical in the forms of relationships between the various agents involved (teachers, working groups, communities, and users) because the created ecosystem requires a multidisciplinary and collaborative work, which breaks with the single thought of an official and monolithic knowledge from which to start as a working method for prototyping. In this case, using the subject of social media as a framework allows us to search from the periphery of digital and media communities for ideas, knowledge, procedures, and even axiological positions from which to reduce some of the social gaps that university students carry with them.

Communication, participation, and collaboration through online platforms and networks.

Linked to the competence of digital communication and collaboration, and directly related to the previous task, the students designed a network communication plan whose objective was to disseminate the videos of the laboratories carried out—a plan that, among other strategies, should include an entry on the laboratories' website of their own elaboration (www.medialabceaex.es, accessed on 10 December 2022). Once the network dissemination plan had been designed, the audience, the communication channels to be used, the strategies, and the timing were specified. Finally, they had to provide evidence of the dissemination carried out on social networks (Figure 5).

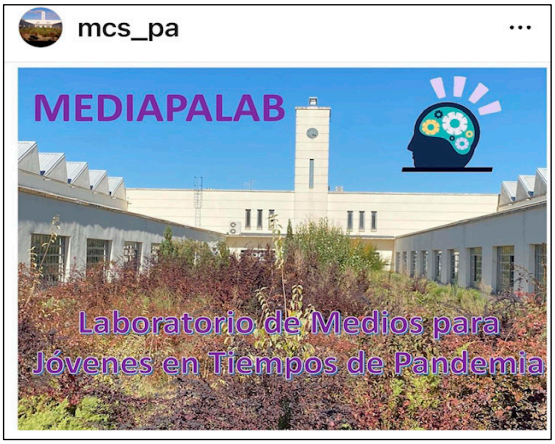

Figure 5. Logo MediaPaLab. Source: Instagram.

Taking advantage of the fact that cyberculture is structured and based on shared knowledge mediated by technology to create and strengthen networks, the media lab becomes an ecosystem of experimentation of digital culture, where the generation of collective

thinking is promoted through the articulation of multiple intelligences. Through the diverse experiences, feelings, aesthetics, and knowledges deposited, not only in the working groups themselves as learners, but also in the plurality of user communities—experts with whom, from playful dynamics throughout the process of design and implementation of prototypes—the various groups will develop a learning-by-doing and a doing-researching, whose ultimate effect will be the generation of a knowledge located and always linked to everyday problems and the possibility of delivering to these communities and users of practical solutions.

The project rests, therefore, on the basis of the participatory culture of web 2.0 and digital social innovation. It seeks to integrate distributed knowledge in society to promote the development of transformative projects cocreated by a plurality of social actors, highlighting the leading role of citizenship. The social media laboratory for young people in the degree of social education aims to function as an instrument of visibility and strengthening of existing initiatives, as well as a promoter of those that emerge in the field of leisure, citizen participation, or the world of work.

Creative transfer to social and professional situations

Finally, in relation to the competence referred to as digital problem solving, each team analysed and selected the digital tools necessary for the elaboration of the social media lab video, solving according to their technological knowledge the different technical problems that arose during the process.

"The first complication was to be clear about what I wanted to tell, how I wanted to tell it, what tools I was going to use and what form I wanted to give it. The initial idea was a bit of a failure, because it wasn't clear what the lab was about. I divided the video into parts: the first was a mix of videos of artistic skills taken from Tik Tok with some phrases at the end as a way of expectations towards the laboratory; the second part was a screen recording where you could see the content of the Instagram page of PALMAGIC (I had to create an account). On it should be an initial post where it briefly explained what the lab was going to be about." (F_17)

In this sense, the lab is framed in a paradigm of social and open innovation. On the one hand, the design of prototypes becomes a device or learning object through which to achieve a novel solution to different social problems. In some cases, prototyping is oriented towards work related to sustainability in terms of food, or the reduction in environmental impact through recycling practices or barter economy. In other cases, the designs will seek more communicative effectiveness and the use of marketing strategies for the improvement of personal profiles in the search for employment, or differentiation in the individual portfolio of professional skills.

On the other hand, the laboratory implies an innovative openness towards the possibility that other social agents and collectives or communities may be interested in the projects developed, since the knowledge generated in the ecosystem created allows knowledge to circulate and be distributed freely through different social networks and digital platforms, being able to be transformed into new products and services for future markets, ultimately fostering a new culture of entrepreneurship. This seems to be clear in the research we have carried out, as we see emerging proposals for personal self-realization through artistic expression, projects in which ideas are launched regarding issues such as home decoration or culinary creation for people with low economic income.

5. Discussion

The experience we have tried to analyse regarding the design, development, and implementation of social media laboratories at the university and the possibilities they offer for the acquisition and development of digital competences, allows us to expose a series of lines of problematization in relation to media education.

5.1. Social Media Labs as Mediation Tools for the Development of Soft Skills and the Management of Tacit Knowledge

First of all, the results derived from our teaching work with young university students question some of the criticisms that are made regarding whether hyperconnected young people function perfectly in a technologized society presenting common and homogeneous characteristics (the myth of digital native). As we have been able to verify, the students participating in the laboratory show high skills in the use of digital technology for communication and its use for training, creation, or information in the field of social education, showing a good development in skills such as critical thinking, self-direction, and collaborative work, which to some extent contradicts some studies that have indicated that the degree of media competence of citizens is rather precarious [26].

Laboratories, such as the ones analysed here, become spaces for creation, typical of advanced users, in which practices related to open innovation are carried out. The dynamics are usually associated with an interdisciplinary collective work methodology. The projects and productions that the students have generated cover a wide range, from forms of social activism to the production of technology-related objects. This has allowed us to confirm, therefore, the value of experiences based on prototyping for the development of competences and the acquisition of socially relevant knowledge, as stated in [27]. This points to the need to train university students in digital competences [12] so that they acquire a series of transversal skills necessary for their professional future (in this case, those related to the professional profile of the field of social education).

We believe that the research we have developed allows us to understand the role that the design and implementation of prototypes can play in university classrooms, turning them into citizen spaces for reflection and work from a conception of innovation that starts from the premise of offering options for students to develop proposals for direct action related to their motivations, interests, or situations that affect them (in fields related to leisure, citizen participation, or the professional world). Our objective was not focused on the construction of knowledge to be able to be transmitted, but on proposing citizen actions that can provide solutions to problems that affect them directly or indirectly, in line with what was proposed by Lafuente and Cancela [9].

5.2. Prototyping Experiences through the Development of Experimentation and the Generation of Participatory Cultures

Secondly, the exploratory analysis that we have conducted regarding the implementation of social media laboratories, which enhance participation and collaboration in areas such as higher education, seems to confirm the role of these as catalysts of innovative processes mediated by digital technology. The projects presented by the students in the laboratory have as a common denominator an empowerment of the subjects with respect to their learning processes by promoting teamwork and the production of collective knowledge [28].

From this perspective, testing and experimenting in order to make mistakes and achieve a more real and contextualized learning is essential for this generation of hyperconnected young people. Therefore, and as we have been able to describe in light of the design implemented, university classrooms are transformed into spaces where students' creativity and their ability to seek innovative solutions are put to the test, whether it is in the choice of the different topics related to the field of work of social education or in the preparation of the scripts (storyboards) that will be used for the making of the videos. This is also with respect to the formats and languages used for the various audiovisual presentations and the use they make of social networks and platforms for their subsequent dissemination. In all these cases, and along with the same lines as Nunes et al. [29], the processual and communitarian aspects are privileged from the point of view of their development and implementation, as well as their preparation within the framework of horizontal and non-hierarchical work dynamics supported by open sources. These sources allow the work of

the collective to be used and others can offer alternatives and ideas on the work carried out by each group.

As we have tried to show, we all go to the laboratory to produce, as a team, generating communities and mixing knowledge. This is also reflected in the opportunities that have arisen throughout the experience analysed for the search of shared practices (e.g., in the discussion and debate forums generated to enrich the projects developed by the different work groups). The laboratory, as we have tried to show, also provides organizational freedom, since it can be developed in a wide variety of formats: physical, virtual, or hybrid, the latter being the most recommendable as it is the most inclusive and the one that best takes advantage of the potential of both formats. Likewise, it can be carried out in an established physical space (the media classroom), can be changeable depending on the needs (the link of the projects generated with organizations linked to the sociocommunity field), has a permanent structure over time, and can be activated each time a new project has to be addressed (the use of the virtual campus and the various social platforms used throughout the experience).

In this sense, the social media laboratory under discussion here becomes an interepistemic space of knowledge, of recognition of the cognitive plurality of the students, and of cultural hybridization, but also of articulation between different ways of thinking and doing. Indeed, the experience described here points to the possibilities offered by the laboratory: either to experiment with new digital, multimedia, and interactive formats of content creation, or to investigate a plurality of topics related to the role of youth today. It links in an interdisciplinary way the ecology of mass media and digital culture with concepts and topics coming from citizen participation, emotional education, the field of art, or vocational training (to give a few examples). It also de-hierarchises knowledge based on the official curriculum of the study plans and allows, on the contrary, contemplation and connection of the plurality of student interests regarding the world around them (aesthetic or emotional care, social activism, healthy living habits, ecological activism, professional orientation, online sales markets, artistic and cultural heritage, technoactivism, etc.). Each of these options enabled by the laboratory confirms what Kieboom [30] and Gutiérrez and Fernández [7] pointed out towards the roles played by these ecosystems of transversal communication between knowledges, and of collective experimentation based on trial and error and occasional failures, for the generation of creative and innovative paths that are, in themselves, their curriculum for life and experience in the world (personal, professional, and social).

5.3. An Ecological Conception of Media Education Oriented towards Social Commitment and Citizen Innovation

The result derived from the research in relation to the social media laboratory has allowed us to evidence the importance of articulating the learning that takes place inside the university with the learning that takes place outside the classroom, trying, at all times, to take advantage of, integrate, and enhance the new forms and opportunities for learning that the technological-digital development brings with it. As we have intended to show, the experience implemented around the prototyping in the social media classroom reinforces the theses sustained by González-Sanmamed et al. [31] when considering as main catalysts of a digital ecology in higher education issues such as:

On the one hand, the need to stimulate connectivity and the culture of propagation (in this case, establishing, for example, mechanisms and supports that allow the viral dissemination of the work done by the working groups on different platforms).

On the other hand, a teaching work oriented towards the empowerment of students (which leads us to think not only about the development of digital competences and literacy processes of an informational and media nature, but also about dimensions linked to the enrichment of their social and political capital, so necessary in the initial training in the field of social education).

It is also necessary to establish organizational and methodological conditions for the development of learning characterized by its ubiquity (which would refer, in the case we have studied, to a series of digital resources that are offered during the main stages linked to the design, development, implementation, and dissemination of the media prototypes generated, but also the consideration of the different learning flows that are required during the whole process and that tell us about the different digital gaps related, in turn, to the unequal appropriation of the technomedia contents by the working groups, their different levels of involvement, and capacities of digital performativity).

Finally, there is a need to make visible and incorporate the tacit knowledge and the invisible and informal learning that students bring to the classroom (the result in this case of their differential position with respect to the contents and products of the knowledge society, the activity networks of which they are a part of, and even their own personal configuration through which they establish weak or strong links with the challenge posed in the laboratory).

We have been able to see how the students participating in the media and social communication subjects. Although it is true that they show an acceptable use of technology and integration of software in their productions, what they show above all are their potentialities in relation to the critical use of technology in matters related to audiovisual and media literacy. It is true that students are large consumers of media, mostly audiovisual (series, movies, platforms and networks, video games, etc.) but through the dynamics generated in the laboratory we sought a critical consumption of them, positioning them also as creators of content.

In relation to the above, we also analysed how the dynamics generated in the social media laboratory enable spaces in which the idea of a production and transmission of knowledge, inspired by hacker culture and the principles of collective intelligence, is cultivated, that is, that what is done belongs to everyone and that, likewise, it should also be for everyone. That is why it is so important for us, following the postulates already developed in Lafuente [4], to have documented the process for its communicability and possibility of future use. This is not only in relation to this research but, above all, so that the students can give continuity to their work through the feedback that arises from the comments, assessments, and nuances originating in the processes of dissemination and implementation of the social projects that they have developed away from the classroom, within social networks or in the field of citizen, and professional activity related to social education and community development.

The methodologies developed throughout the process of creation and implementation of media prototypes have allowed us to verify that such observed initiatives can be useful examples of the democratization of science and technology through media education. This is in line with research developed by Ferres and Massanet [32] and Fueyo, Rodríguez and Hoechsmann [33], since a sine qua non condition of the social media laboratory is that hyperconnected young people through design, research, experimentation, reflection, and search for prototypes with a social perspective can contemplate and confront, at the same time, the new processes of social exclusion generated in the context of the late capitalist information society, as has also been opportunely indicated in studies carried out by Viñoles-Cosentino et al. [17]. In this sense, we believe that the dynamics and projects generated within the framework of the learning ecosystem fostered by the media laboratory have allowed students to guide projects related to economic inequality, gender violence, job insecurity, intragenerational conflicts, and the search for processes based on empathy and personal self-regulation, not to mention the challenges linked to the ecosocial dimension and quality of life, or the roles played by visual culture and image in our lives.

6. Conclusions

Media labs provide us with a pragmatic dimension: the capacity to produce collaborative solutions. This capacity involves incorporating people's creativity into policy production, through innovation processes that include and combine diverse knowledge.

Chief among these is their extensive capacity for trial and error. This enables agile error analysis, while facilitating rapid learning, which avoids the cost of larger errors and converts it into accumulated knowledge for the institution. It is a model, therefore, that allows for error and transforms it into learning, but also does so as part of its very nature. We always move at the level of experimentation and prototyping of the projects that form part of a laboratory, of the design of the laboratory itself, and of the programme in which it is inserted.

The development of social media labs in the university environment generates new opportunities for innovation, incorporating the hacker spirit within sometimes century-old institutions. Digital transformation, openness, and social involvement take on a new dimension that is rare in higher education institutions. The innovation that the lab brings is materialised in the materialisation of the principles and forms learned in the digital sphere and the generation of open and shared innovation processes. They are configured as generative platforms oriented towards production, as opposed to the idea of a portal that shows closed content to consumer users. They are also a way of exploring the continuity of the physical and digital dimensions, far from false dichotomies between the real and the virtual.

Along with the lessons learned, the experience of the media laboratories also leads us to reflect on some of the limitations and difficulties involved in setting up new institutional models, such as who participates, how they participate, or what the final result of the prototypes is. In this respect, neither including new actors nor avoiding biases in participation are easy tasks. Addressing the causes of these barriers and actively promoting the participation of traditionally excluded actors is one of the main challenges for any laboratory of this kind.

Similarly, balancing the participants' dialogue with the digital competences put into practice during the labs is another challenge, as is generating a common language and a form of communication that allows transcending deliberation to turn it into collaboration.

As for the prototypes, this is undoubtedly the most visible tangible result of a laboratory, and so ensuring that they become sustainable solutions over time is a priority for their consolidation as spaces for the codesign of sociocommunity intervention policies.

In this context of innovation through media laboratories as processes that are carried out collectively, it should be pointed out that the results are neither rushed nor magical. As in all changes and processes of evolution and transformation of societies, they develop in stages or phases to shape a project, a response, or a new innovative product.

These stages relate to the analysis or diagnosis of the situation; the preparation or discussion of the response; the design and generation of the prototype; the implementation and application of the innovation; and, finally, its evaluation. Likewise, in the dynamics of media laboratories, knowledge is disseminated in open access and made available to the entire community, which can, in turn, adapt, modify, transform, and use it for their social interventions.

Media laboratories are spaces of indefinitions and questioning, yes, but knowledge is not coproduced in an improvised way. In these labs, specific methodologies are used, certain organizational models are developed, and certain practices are identified. They are spaces where knowledge is collaboratively coproduced, where collaborative practices of exchange are made visible, and data and information are shared. In them, the central figures in the innovation process are the users, a term that tends to be replaced by the public, communities, or collectives. In social media labs, the communitarian and the domestic are hybridized, what is learned thanks to a hobby can become a very valuable contribution, a public forum for discussion, and the collective creativity developed in a lab can have a strong impact on private welfare.

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